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THE ARCHITECTS' & BUILDERS' JOURNAL.

A Weekly Journal for Architects Surveyors Builders and Constructional Engineers.

It is our aim, our ambition, our aspiration even, to build our Journal worthily and well, not for the hour only, but for future years; for the few men in the forefront of an enduring and a laborious art; for the disciplined ranks of a distinguished profession; for the young men—Architects to be—and for all who love a clustered column or a flying buttress, a traceried window or a Greek frieze; for the man, too, who honestly plumbs a jamb. . . . .

CAXTON HOUSE, WESTMINSTER.

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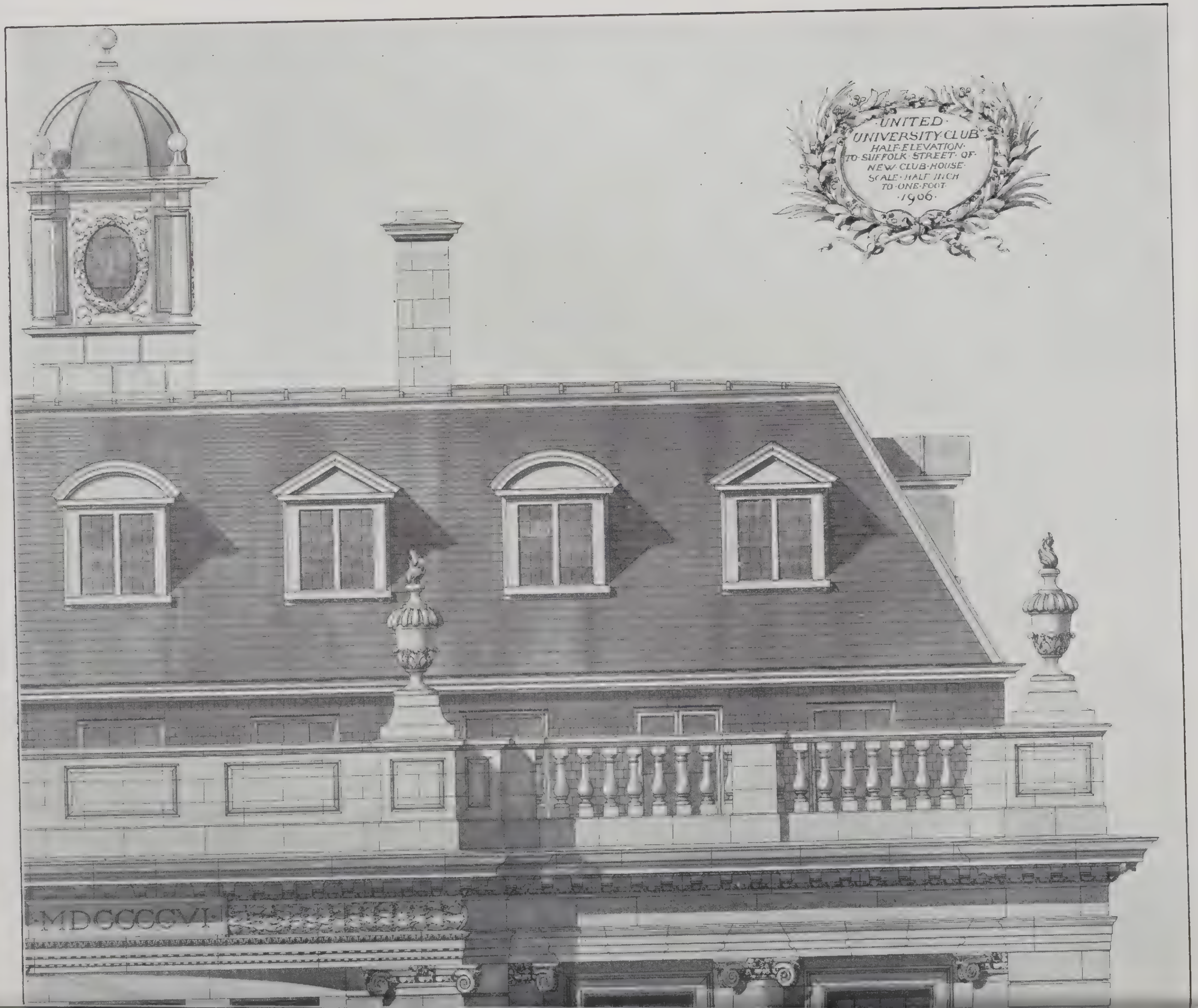

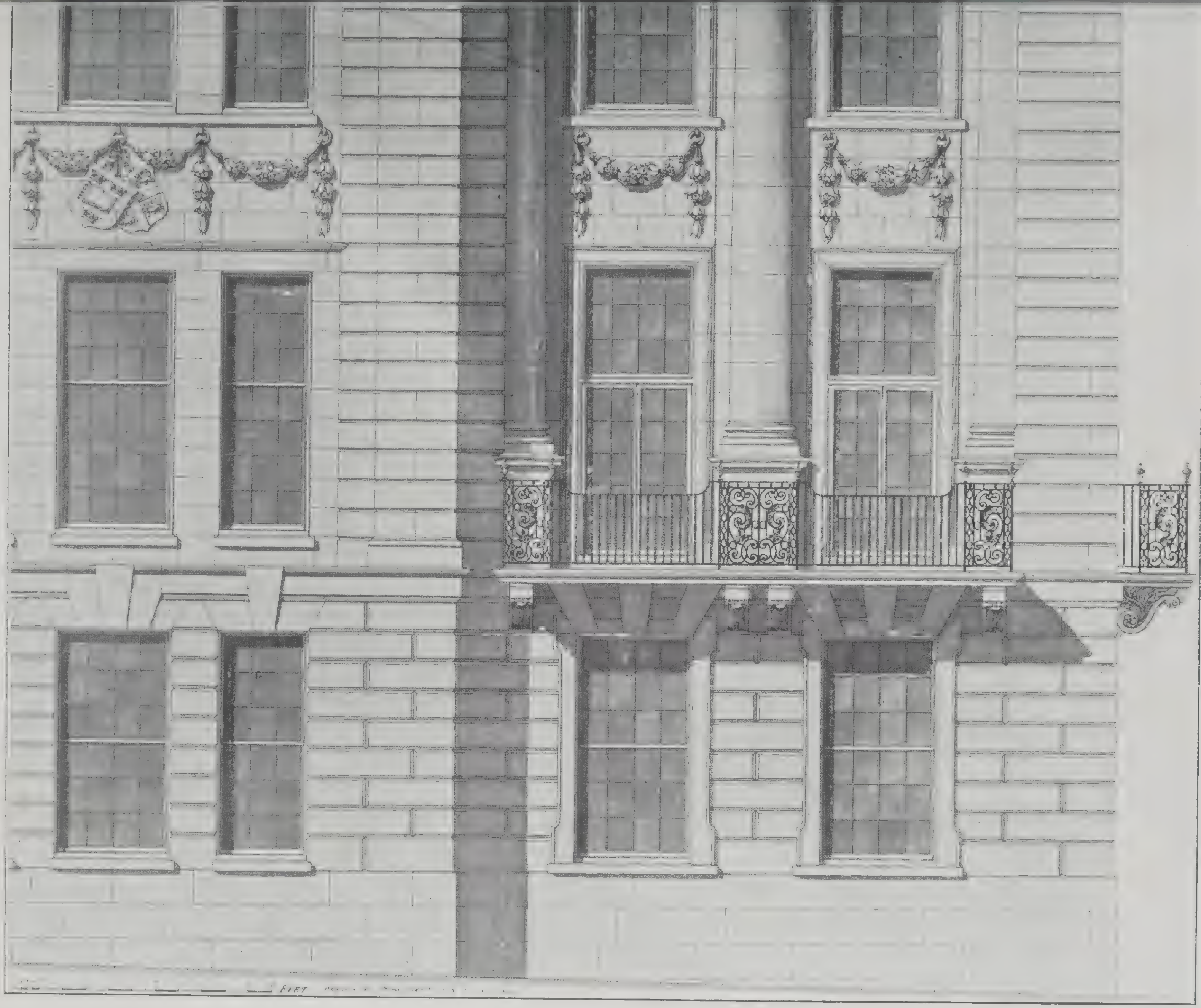

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THE ARCHITECTS' &
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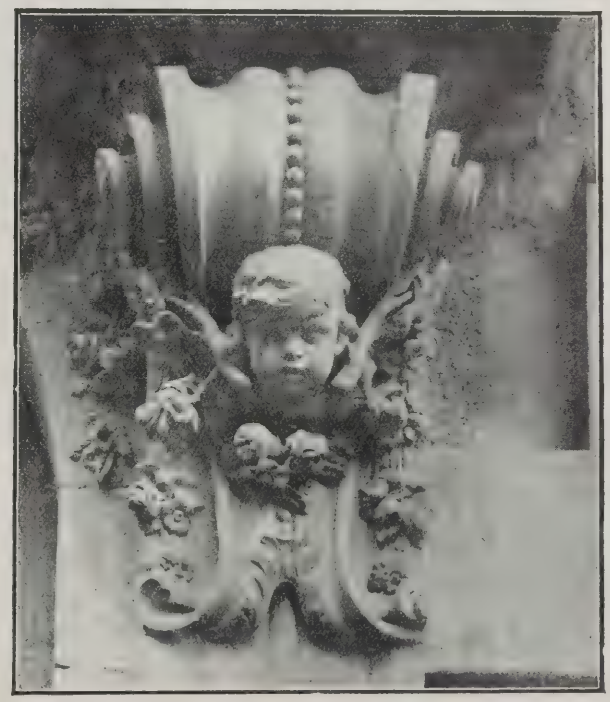
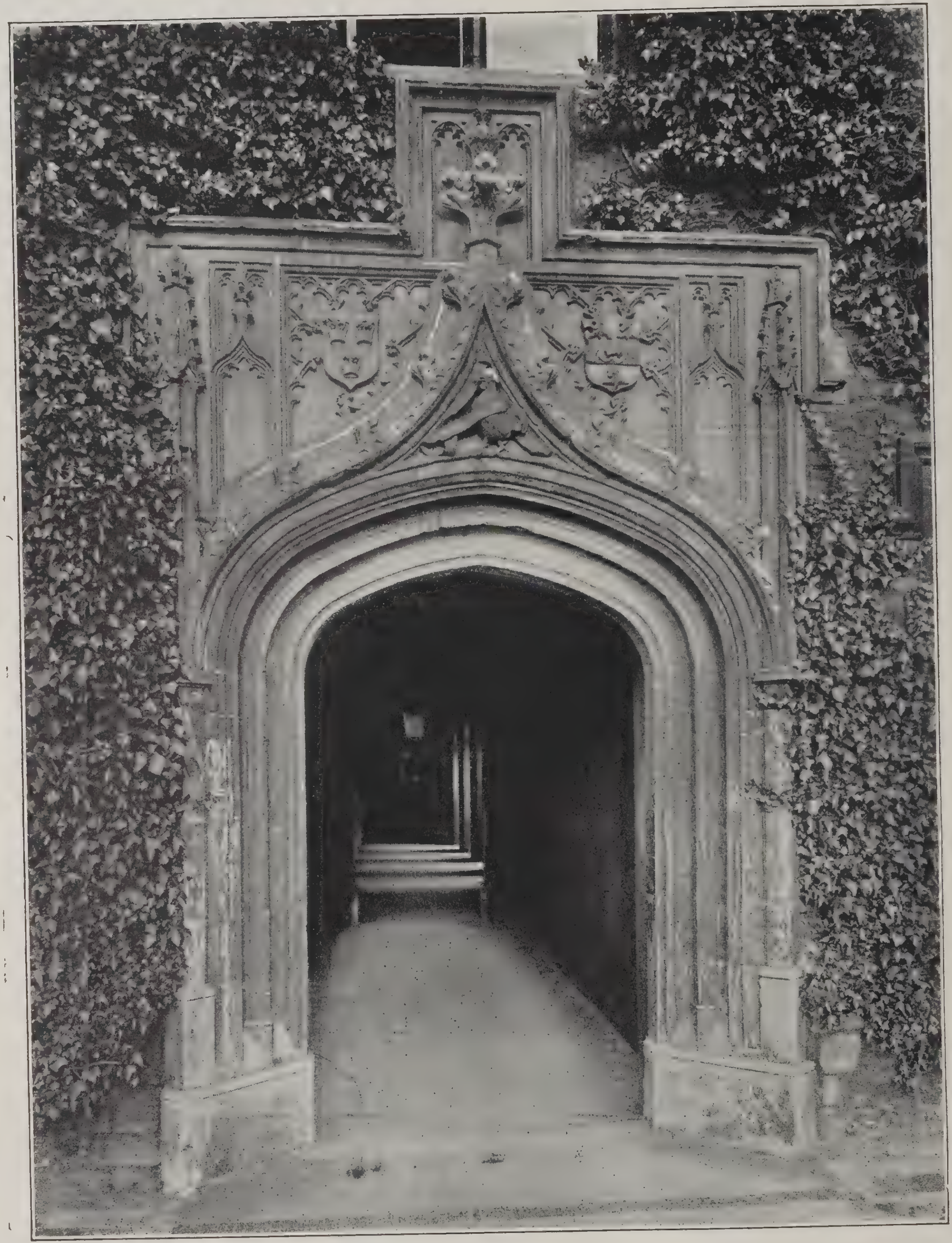


The door showing the bracket of which this is a detail gives access to the base of the geometrical stairs in the southern or clock tower. The tympanum is filled with winged heads of children, but it is the brackets that give the door its distinction.

DETAIL OF BRACKET, THE DEAN'S DOOR, ST. PAUL'S CATHEDRAL.



This doorway, which leads into the second court, is noticeable for the cock which can be seen above the middle of the arch. The cock is the principal emblem of the College, and recalls John Alcock, Bishop of Ely, who, by a charter of 1497, converted the old existing nunnery into a college.

DOORWAY TO SECOND COURT, JESUS COLLEGE, CAMBRIDGE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

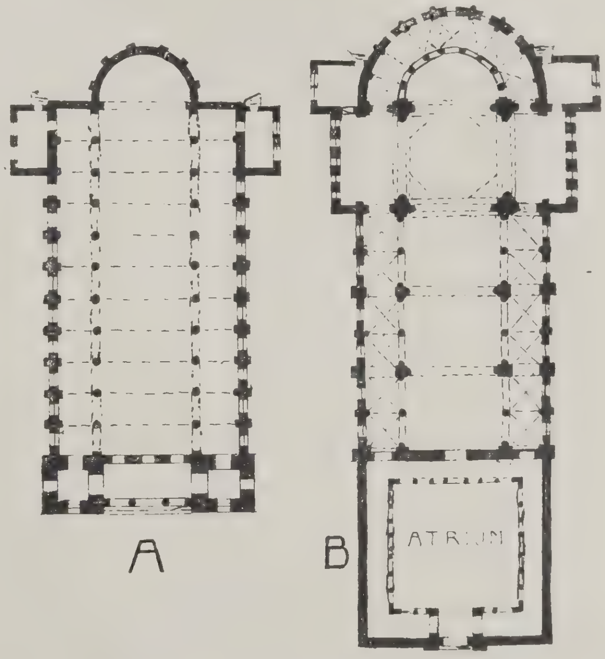
The Basilica Plan for the Modern Church.

WHEN the Gothic revival was in its first exuberance, coinciding as it did with a passionate revival of mediæval ecclesiology, no one doubted that the revived mediæval church plan was the best, the only possible plan to suit the Anglican church service, and to respond to the aspirations of the devout churchman. A deviation from it, or from orthodox Gothic detail, was a fault for which the architect guilty of it was held up to reprobation in ecclesiological journals, and by ecclesiological committees.

The Gothic revival, however, had not died out, had indeed only arrived at its central career, when practically-minded church architects, whatever their faith in Gothic, began to discover that an area with two rows of large piers running through the middle of it, had obvious disadvantages for a congregation who wished to see and hear priest and preacher, and the device was started by one very eminent church architect, and followed by others, of making the side-aisles narrow, using them for passage only, instead of for seating, thus retaining the three-aisled idea, and the architectural effect of the nave arcades, while materially altering the plan and section from that of the mediæval building. This arrangement is now to be frequently met with in the church designs of the day, most frequently in those which are otherwise Gothic in style and treatment; sometimes in the very rare instances which we see of a modern church of Classic character.

Very rare; for in spite of the fact that Gothic has been now almost entirely abandoned for secular buildings, it is still for the most part accepted as the correct, if not the only, style for a church, as a matter of religious association. But it seems to be forgotten that the mediæval church, after all (whether we speak of the material or spiritual church), was a late form both architecturally and ritually, and that there is a form of church which has far older religious associations than anything mediæval. The Latin Basilica church goes back to the earliest times when Christian public worship was openly instituted, and received the protection of the Imperial power. And its plan presents, in a more convenient form, that kind of passage-aisle arrangement which is only obtained in a mediævally designed church by a plan somewhat at variance with the traditional design and proportions of the mediæval three-aisled church.

We may recognise two forms of the Basilica plan of church—that which the earliest churches in Rome, after the date of Constantine, assumed; and that which came into shape when the Romanesque school of architecture was struggling into shape. Types of the two plans are subjoined. That marked *A* represents the earliest and simplest type of the Latin Basilica church, except that the western towers were not a usual feature; they belong rather to German and French than to Italian architecture. But the remainder of the plan represents the Latin Basilica arrangement. Simple as it is, this is a plan which can be made very effective as an interior. The aisles are divided off by a long unbroken range of columns, which forms a fine perspective leading up to the apse. The long choir of the mediæval parish church (both the genuine and the revived mediæval) is omitted, and we return to the simple apse of early days, because it has been recognised by many, and will be recognised by more as the subject becomes better understood, that the chancel is a bad position for the choir, in a musical sense, as they are not well heard by the congregation whom they are supposed to lead; and that a choir of secular persons, selected merely for musical reasons, have really no traditional place within a screened-off chancel; they are occupying a special place formerly occupied by the monks who sang the service, but which the latter occupied, not as singers, but as clerics. The placing the choristers in the chancel is therefore a completely false tradition. In this plan the organ and choir are supposed to be in a west-end gallery over the narthex; a better situation at all events than in a long chancel. In an architectural sense the west-end towers are very valuable, not only as giving a dignified façade, but as masking the weak line formed by the sloping roofs of the aisles. This sloping outline of the façade is the weak point of the Italian form of basilica. The church as shown here is supposed to have a wooden roof, which might either be open-timbered, or have a decorative ceiling below the tie-beams; the form usually adopted in the ancient Latin basilica. It is a construction favourable for acoustic effect. The columns are more convenient than the compound Gothic pier, taking up less room. They might carry either an arcade or a horizontal entablature; both were employed in the ancient basilicas; but



TYPES OF BASILICA CHURCH PLANS.
A=The Latin type. *B*=The Early Romanesque Type.

the arcade has the best effect. This plan would produce a church convenient both for sight and hearing, and in accordance with the oldest Christian tradition. There is much to be said, therefore, in its favour.

The other sketch plan, *B*, shows the type which obtained in many instances in the earlier times of Romanesque architecture. The most essential distinctions between this and the Latin type of church are, first, that the apse is the whole width of the nave, the aisle being continued round it; secondly, that there is a grouping of the points of support in an alternating fashion; a compound pier and a column alternately. In the later Romanesque this is generally a device for carrying a central vault over the wider central avenue of the nave; the nave and choir, in ancient churches of this period, being frequently planned with the aisles just half the width of the centre, so that two square compartments of vaulting in the aisles went to one compartment of the centre vault. But long before builders had ventured on vaulting the central space, this alternating arrangement of piers had been devised, with the object of throwing a solid arch across the church above the larger piers, thus giving the building a more monumental character, both in appearance and in reality, for the solid built arches formed a tie between the arcades and the wall above them, and strengthened the whole fabric. This device occurs as early as the beginning of the ninth century in the basilica church of St. Praxede at Rome, though it is there carried out in a very clumsy fashion; it is carried out in much more artistic style in the beautiful and almost Classic interior of San Miniato at Florence, some two centuries later. In the sketch plan here given this system is suggested, the centre roof between the cross arches being of timber, and the side aisles vaulted in brick or stone. In the plan here given the transepts are wider and are entirely thrown into the church, and in them would be placed the organ and choir, the organ being divided into two, a part of it on each side, so as to blend alternately with each side of the choir; an arrangement which, with modern electrical mechanism, can always be carried out if desired; it is only a question of cost. Or otherwise, there might be only a small organ in each transept, sufficient to support the choir, and a large one at the west end, above the entrance, for grander effects, and for accompanying congregational singing. The four large piers at the crossing would carry an octagonal lantern which would form the dominant exterior feature; a composition frequently suggested in the Romanesque churches of the south of France, as also occasionally in German Romanesque. The colonnaded atrium, though only shown in plan *B*, is really more a Latin than a Romanesque feature (though found in some Romanesque churches); but it is such a beautiful approach to a church, and has such an effect of seclusion and separation of the place of worship from the outer world, that one would be very glad to see it revived sometimes.

As there seems some inclination at present to experiment a little in the planning of churches, and as it is probable that the comparative disfavour into which revived Gothic has fallen, for secular buildings, will before long extend to church architecture also, we recommend to those whose good fortune it is to build churches the consideration of the basilica type of church, as one which for modern congregational worship has a good many practical advantages; which is susceptible of very fine architectural effect; and which, we may once more remind them, represents a Christian tradition a great deal older than that represented by mediæval building.

The Proposed French Palace, Aldwych.

It is to be hoped that the French Palace of Arts and Industries, which it is definitely stated is now to be erected in Aldwych, opposite the axis of Kingsway, will be a building architecturally worthy of so exceptional a site. One feels a little anxious about it, because in a building of this class, which may be said to be a kind of superior bazaar, we know that show is generally sought for, rather than mere solid architectural qualities. A French architect of repute has been engaged, and French architects have a certain faculty for combining show with artistic quality. But the western termination of Aldwych is already occupied by two buildings of a monumental character, and it would be a great mistake if the centre of the convex quadrant were allowed to be occupied by a building in a less dignified and more florid style. What we should like to see would be a domed building of monumental style in the centre, and an ultimate finish of the east end of the quadrant on the same design as the west end, with appropriately designed lower buildings connecting the centre and end blocks.

The New R.A.

We may congratulate Mr. Arthur Hacker, A.R.A., on his promotion to the full dignity of "R.A."; he is a fine and accomplished painter of the figure, and has done some very pleasing pictures; but we confess that there are some names in the list of Associates who we should have thought had a prior claim, unless it goes partly by seniority, a point we have not statistics for testing. But what of Mr. Pomeroy, and Mr. Pegram, and Mr. Colton among sculptors? And Sir Alfred East and Mr. Cope among the painters? We should hardly be persuaded that none of these had equal claims with Mr. Hacker.

Proposed Edward VII. Monument at Hyde Park Corner.

The proposal made by that irrepressible amateur town-planner, Mr. Speaight, for a monument to the late King at Hyde Park Corner might be worth considering if the question were about laying out ground at present vacant. But as it is, the scheme involves the absurdity of a second time pulling down and rebuilding the Constitution Hill arch, which is really not worth pulling down and rebuilding again; it has no doubt been very badly placed where it is, but it had better be left undisturbed now. Then the scheme also involves the moving of the Wellington monument, which is now in its appropriate position opposite Apsley House. It is absurd to suppose that all these changes and this pulling about of existing monuments would be tolerated merely for the sake of finding a site for a monument to the late King. As we have already urged, the really suitable and useful monument to him would be the carrying out of a new façade to Buckingham Palace, a scheme which would interfere with nothing else, and would supply to the Queen Victoria memorial what it needed from the first—an adequate and dignified architectural culmination.

The New Coinage.

It is satisfactory to learn that a really fine sculptor, Mr. Bertram Mackennal, has been commissioned to model the new coinage for the new reign. There have been a good many failures in recent times in the design of new coinage, a matter in which we compare badly with France, which has at her disposal the services of the two greatest medallist artists living, M. Roty and M. Chaplain. The object of coinage design is three-fold: To give a good portrait of the reigning sovereign; to combine it with details so arranged and spaced as to produce a good decorative effect; and to give a distinctive difference in appearance to coins which nearly resemble each other in size and value, such as the four-shilling and five-shilling pieces, and the florin and half-crown. The modelling of the portrait head on a coin is one of the most delicate problems of bas-relief sculpture, having to combine realism and expression with very low relief on a very minute scale. We may expect from Mr. Mackennal, the author of one of the most beautiful and expressive statuette groups ("Mother and Daughter") ever exhibited at the Royal Academy, an accomplished treatment of this difficult task.

NOTES AND NEWS.

The Lady Chapel, Liverpool Cathedral.

To-day (Wednesday) the Lady Chapel, which is the first completed instalment of the new Liverpool Cathedral, is to be opened. The See of Liverpool is essentially a modern one, the date of its foundation being so recent as 1880. Dr. Ryle was enthroned Bishop in the Cathedral Church of St. Peter, which is in the most central thoroughfare of the city, on July 1 in that year. Since that time St. Peter's has served as the Pro-Cathedral. It may be useful to recall that the new cathedral is being erected in an elevated position known as St. James's Mount, about three-quarters of a mile from the site of the existing Pro-Cathedral, in Church Street. The foundation stone was laid by King Edward VII., who was accompanied by Queen Alexandra, on July 19, 1904. The ceremony of dedication was performed by the then Archbishop of York (Dr. Maclagan). The designs are those of Mr. Gilbert Scott, who for the details of the work was associated with Mr. G. F. Bodley, as joint architect, until the death of the latter in November, 1907. When the cathedral scheme was originally projected, it was estimated that approximately £600,000 would be required for the entire erection, but it is now computed that before the final stone has been laid the outlay will have approached close upon three-quarters of a million sterling. Towards this aggregate about £300,000 has been subscribed. In addition to the donations in cash, there have been many munificent gifts in the form of memorial windows, chancel furnishings, etc., and the Freemasons of West Lancashire are erecting the Lathom Chapter House in memory of the first Earl of Lathom, their Provincial Grand Master. The cathedral, including the Lady Chapel, will have an external length of 611ft., with central towers 260ft. in height. There will be seating accommodation for 8,000 persons. It will be the largest cathedral in the United Kingdom. The structural operations have been in progress for nearly six years. The red sandstone used is being obtained from quarries at Woolton, Runcorn, Helsby, and Rainhill, with special stone for steps from the Forest of Dean. The total cost of the Lady Chapel is about £60,000. The chapel will hold about 500 worshippers.

Ashburnham House.

Though now a part of Westminster School, Ashburnham House preserves much of its original seventeenth-century character. This is notable especially in the staircase, one of the finest in England. Its plan proclaims the master-hand of its designer (generally assumed to be Inigo Jones), and its details have all the vigour of the period. It is so admirably adapted for the pageant of a richly dressed procession that it seems as if Inigo Jones had in this staircase given permanence to one of his scenic inventions, and fixed for later generations the *mise en scène* of an antique play. Some fine views of it are given in the July issue of "The Architectural Review, as well as others of the great drawing-room (with its beautiful plaster ceiling), the dining-room, and other parts of Ashburnham House.

Of particular interest, too, are the illustrations of Crosby Hall, all from specially taken photographs. The greatest credit is due to the architects, Messrs. Wratten and Godfrey, who were entrusted with the rebuilding of Crosby Hall on a site at Chelsea facing the river, after its demolition in the city. The work, carried out by Messrs. Trollope and Colls, has been done in the most skilful and successful manner. The roof—that magnificent specimen of fifteenth-century woodwork—can now be seen to perfection, and the beauty of the oriel window is no longer hidden.

Other features of the July issue are an article by Mr. Edwin F. Reynolds, on "The Imperial Mosques of Constantinople" (the concluding article of a valuable series); some excellent drawings and a photograph of that amazing geometrical staircase, 24ft. in diameter, which Wren contrived in the southern tower of St. Paul's Cathedral—a stair with the inner ends of the steps pinned into the wall as the only means of support, so that, in ascending it, one has a curious feeling of treading the air; some reproductions of Mr. Frank Brangwyn's fine decorative paintings in the hall of the Skinners' Company; illustrations of the new club for students of Liverpool University, which is being erected from designs by Professor Reilly; and, in the "Town Planning and Housing Supplement," a critical and suggestive article on Port Sunlight, by Mr. Macartney, and an illustrated article on the London County Council's White Hart Lane Estate at Tottenham, where some good types of houses for the working classes have been erected.

Selby Abbey.

Mr. J. Oldrid Scott has felt himself constrained to reply to an anonymous correspondent of an evening paper who deprecated the erection of the missing south transept of Selby Abbey as a memorial to the late King. The correspondent said that the idea of a "memorial restoration" was a grotesque one. But, replies Mr. Scott, as no transept exists, there can be no proposal to restore it. The correspondent also spoke of the transept dating from a period some 600 years back, and declared that the duty of its due reparation belongs to those responsible for its wellbeing. Mr. Scott recalls that the Norman transept, built about 800 years back, was completely destroyed when the tower of the abbey fell in 1690, since when there has been no south transept, and what should be the most beautiful view of the building is sadly marred by its absence. It is therefore no restoration or reparation that is proposed, but the replacing of a missing feature of the first importance. Surely, Mr. Scott supposes, such a good work as this would form a fitting memorial, and be one in which others besides the inhabitants of Selby would be glad to take a part.

The United University Club, London.

(See Centre Plate.)

The United University Club, Pall Mall, S.W., which is the subject of the first of our new series of centre plates (for the facilities for the reproduction, we are indebted to the courtesy of the architect, Professor Reginald Blomfield, A.R.A.), was rebuilt some two or three years ago on the old site, and upon the same area of ground as the former building. As the club accommodation had to be greatly increased, and bedrooms for members provided, the plan had to be carefully considered in order to comply with the conditions of the problem. The old club house followed the usual practice of devoting the centre third of the building to a grand staircase, which took up a great deal of room, and wasted more by separating the club into two halves. Such a plan was out of the question in the new building, and in order to provide the requisite accommodation it was necessary to place the hall and main staircase at the north end of the building facing west down Suffolk Place. This arrangement has the further advantage of opening up the entrance from the Haymarket along Suffolk Place. The club-house contains, in the basement, kitchen and all offices and cellars; on the ground floor, smoking-room (west), reading-room (south), entrance hall, main and back stairs, and lavatories; on the first floor are the club dining-rooms, *en suite*, and occupying the whole of the fronts to Suffolk Place and Pall Mall, coffee room, main and back stairs, lavatories, etc.; on the second floor, library, billiard-room, card-room, secondary main stairs and back stairs, lavatories, etc.; on the third floor, billiard-room, card-room, three members' bedrooms, bathrooms, lavatories, etc., and secondary main and back stairs; on the fourth floor, seven members' bedrooms, steward's room, and boys' bedroom, bath-room, etc., and secondary main and back stairs. A passenger lift runs up to the third floor; a double-service lift from basement to fourth floor, with service-rooms on every floor, and double-service lifts from basement to dining-rooms on the first floor. The façade is faced with Portland stone, and the roof covered with Westmorland slates.

WESTMINSTER CATHEDRAL.

[*Westminster Cathedral was consecrated last week, and the occasion seems appropriate for the following brief account of a building that has excited much admiration and perhaps more controversy.*]

The Inception of the Cathedral.

THE conception of a cathedral for the Metropolitan See of Westminster originated in the mind of Cardinal Wiseman, and after his death, at a meeting held with the object of arranging for a memorial to him, his ambition for the erection of a splendid cathedral was applied to the circumstances, and its realisation was entered upon by Cardinal Manning. The site for the cathedral was acquired by a limited company, who made it over to Cardinal Manning at its cost price of £55,000.

The Choice of Architect and Style.

A design that appears to have been greatly admired by Cardinal Manning was submitted by Mr. Henry Clutton. It resembled the cathedral of Cologne, and the external measurements were to be 450ft. by 250ft. When Cardinal Vaughan became Archbishop of Westminster, there was much discussion as to the choice of an architect, and the style to be adopted. When Mr. John Francis Bentley was chosen as architect, it was decided not to invite comparison with Westminster Abbey by adopting Gothic; and, apart from that consideration, it was important to observe that the cost of a Gothic building would have been about three times that of the cathedral that has been erected. It is interesting to recall what Mr. Bentley himself said as to the choice of style: "It was thought by the Cardinal," wrote Mr. Bentley, "that to build the principal Catholic church in England in a style that was absolutely primitive Christian, that was not confined to Italy, England, or any other nation, but that was up to the ninth century spread over many countries, would be the wisest thing to do. Personally, I should have preferred a Gothic church, yet, on consideration, I am inclined to think that the Cardinal was right." Further, he remarked concerning the style: "It is early Christian Byzantine. In fact, the church will be unique as far as this part of Europe is concerned. . . The new cathedral will, in style, be the same as that in which St. Sophia at Constantinople is built."

Progress of the Work.

The foundation stone, which was laid on June 29th, 1895, by Cardinal Vaughan, assisted by Cardinal Logue, is a block of granite, 5ft. long, 3ft. wide, and 2ft. 8in. high. The foundations were completed in 1896, at an outlay of about £14,000. The contract for the superstructure was signed in 1896, and by 1899 the outer walls were nearing completion, while the brickwork and stonework of the aisles, chapels, transepts, and apsidal choir, and the outer walls of the clerestories, were up to the level of their copings, and the remainder of the walls had reached the height of 85ft. from the pavement level. Great transverse arches, of 60ft. span, and 90ft. high from the floor to their soffits, carrying the four domes, were then being turned. The domes are formed of concrete, composed of four parts of broken bricks and one part of Portland cement. The concrete was prepared on a stage round each dome, and thrown fresh on to the boarded centre (which was previously sanded to prevent adhesion), in rings varying from three to five feet deep, and screeded on the upper surface to a graduated thickness to ensure an absolute uniformity in longitudinal and latitudinal sections. The architect would not permit the use of any cement until it had been at least thirteen weeks on the site in bins, where it was periodically turned over, and the temperature taken regularly. The entire shell of the building, except some work on the façade, and the last 50ft. of the campanile (which was finished in the early part of 1903) was ready by 1901.

THE LATE JOHN FRANCIS BENTLEY.
(Reproduced by courtesy of Messrs. Burns and Oates.)

Dimensions.

The dimensions of the cathedral are as follows: External—Extreme length, 360ft.; width, 156ft.; height of nave, 117ft.; height of façade (not including the turrets), 99ft.; height of campanile, 273ft., and to the top of the cross, 284ft. Internal: Length from the main entrance to the sanctuary, 232ft.; depth of the sanctuary, 62ft.; and of the raised choir beyond it, 48ft.—making the total internal length 342ft.; width of the nave, 60ft.; width across the nave and aisles, 98ft.; and across nave and aisles and side chapels, 148ft.; height of the main arches of the nave, 90ft.; and of its three domes, 112ft. The whole building covers an area of about 54,000 square feet.

The Interior.

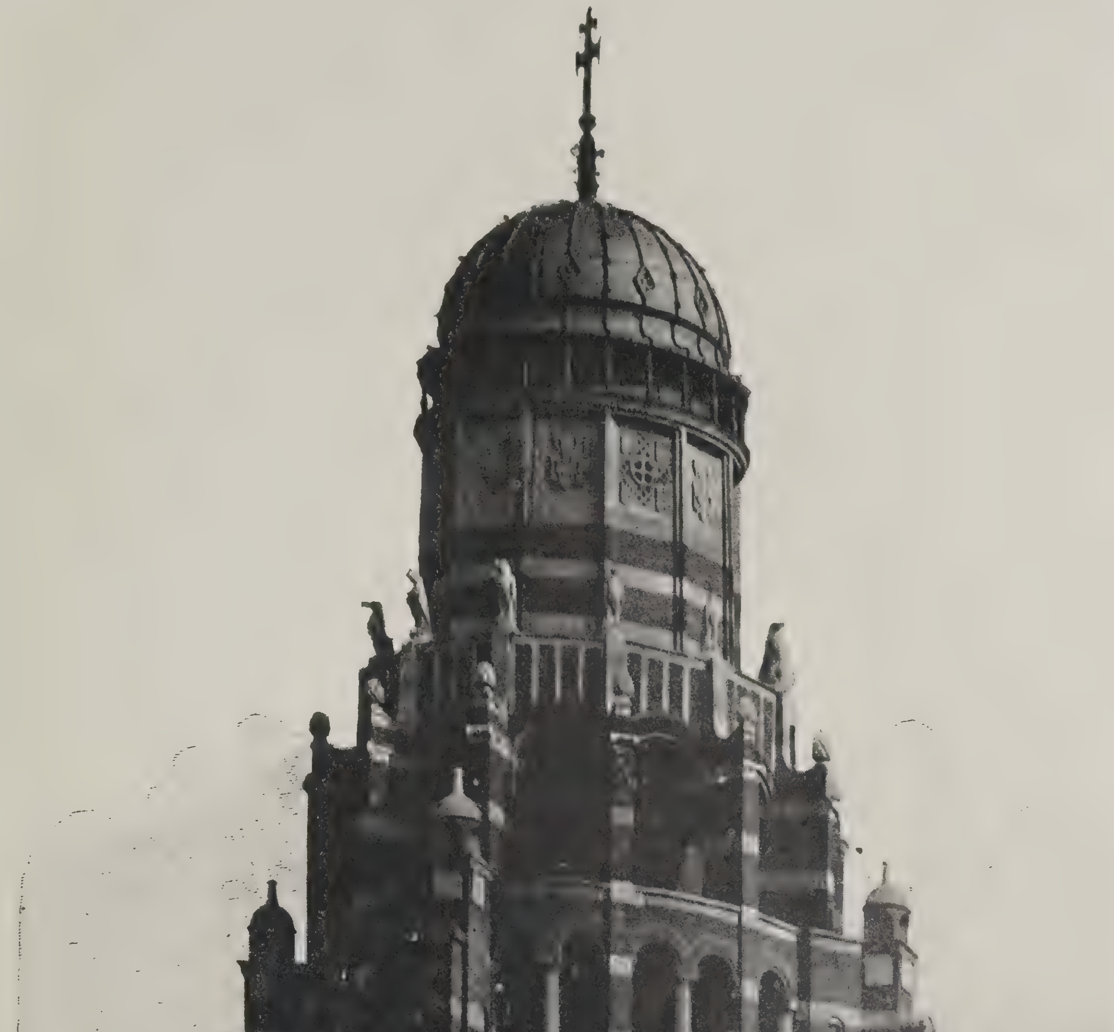
The interior of the cathedral consists of a large porch, a noble vestibule, the nave, two aisles with transepts, a baptistery, and eight side chapels; a sanctuary 4½ft. above the level of the nave having on one side a fine Lady Chapel, and on the other a Blessed Sacrament Chapel.

Beyond the sanctuary is the apsidal choir, raised 13 feet above the nave, with a crypt beneath it; over the aisles and vestibule are fine galleries or tribunes, and behind the Lady Chapel are the sacristies.

Among the most striking features are the twelve lower arches on each side of the nave, supporting the tribunes; above each two of these arches rises a lofty arch 73ft. high; above each two of the latter rises a still loftier arch of 90ft.; over the highest arches rise the three great domes, each 60ft. in diameter.

The High Altar and Baldacchino.

The High Altar is composed of one stone of Cornish grey granite, unpolished, but fine-axed, 12ft. long, and 4ft. wide, and weighing 12 tons. The baldacchino, 31ft. wide and 38ft. high, is supported by eight monoliths of yellow Verona marble. Their shafts rest on pedestals of verde antico inset with panels of purple breccia, and surmounted with white marble capitals. The centre of Carrara marble is carried on two transverse arches joined by a vault, which is ornamented with a floral pattern in mosaic on a gold ground; the soffits of the arches are inlaid with panels of breccia. The main arches are ornamented with quarrels of mother-of-pearl and lapis lazuli within circles enriched with porphyry and Thessalian marble. The cost of the baldacchino was £7,500. "I have spent a great deal of thought upon it," said Mr. Bentley, "and I think it is the best thing about the cathedral." Great trouble was experienced in getting eight columns of the desired length of 15ft., in onyx doré and onyx nuagé, and they were brought over from Africa and worked at Marseilles.



The tower is built of hard red brick, banded with Portland stone, and is crowned with a metal-covered cupola, surmounted by a double cross of bronze. The total height is 284 feet.

WESTMINSTER CATHEDRAL: SUMMIT OF ST. EDWARD'S TOWER.

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The Bishops of England presented the late Cardinal 'aughan with an Archiepiscopal throne modelled on that of he Pope in St. John Lateran, Rome. It is composed of white tatuary marble and mosaic, with heraldic bearings; the anopy is a fine specimen of English wood-carving in fumed ak and walnut, inlaid with holly and ebony.

The Chapels.

There are in all eleven chapels, the most beautiful being hat of the Blessed Sacrament. The gates and screen, the atter composed of two corniced wings, are the most beautiful eature of the chapel, and they owe much to Mr. Bentley's riend and successor, Mr. John A. Marshall, who in April, 907, read before the Architectural Association an excellent aper on the cathedral.

Monolithic Columns.

The great feature about the marble columns is that each carved out of a single block. To obtain a sufficient number f blocks of the required size, two ancient classical quarries, ne in Thessaly, and one in Eubœa, were specially reopened. esides the verde antico columns from Thessaly, there are thers of another and more delicate shade of green, the amous cipollino marble from Switzerland and Eubœa; from e quarries near Verona have come the breccia marbles, urple and grey and yellow, with streaks of white; and there re columns of red marble from Languedoc. The two stately olumns in the vestibule are of red polished Norwegian ranite, with carved capitals of Carrara marble. Of the venty-seven columns in the nave and transepts, which support e vaulting of the aisles on each side of the nave, and also e arches of the transepts, twenty-one are of verde antico, reek and Swiss cipollino, Languedoc, Italian breccia, grey ranite from Norway, and also the red granite which has the haracter of the ancient porphyry. Each of these monoliths ands on a moulded base of Norwegian granite, and terinates in an elaborately carved capital of white Carrara arble, among all of which capitals there are no duplicates pattern.

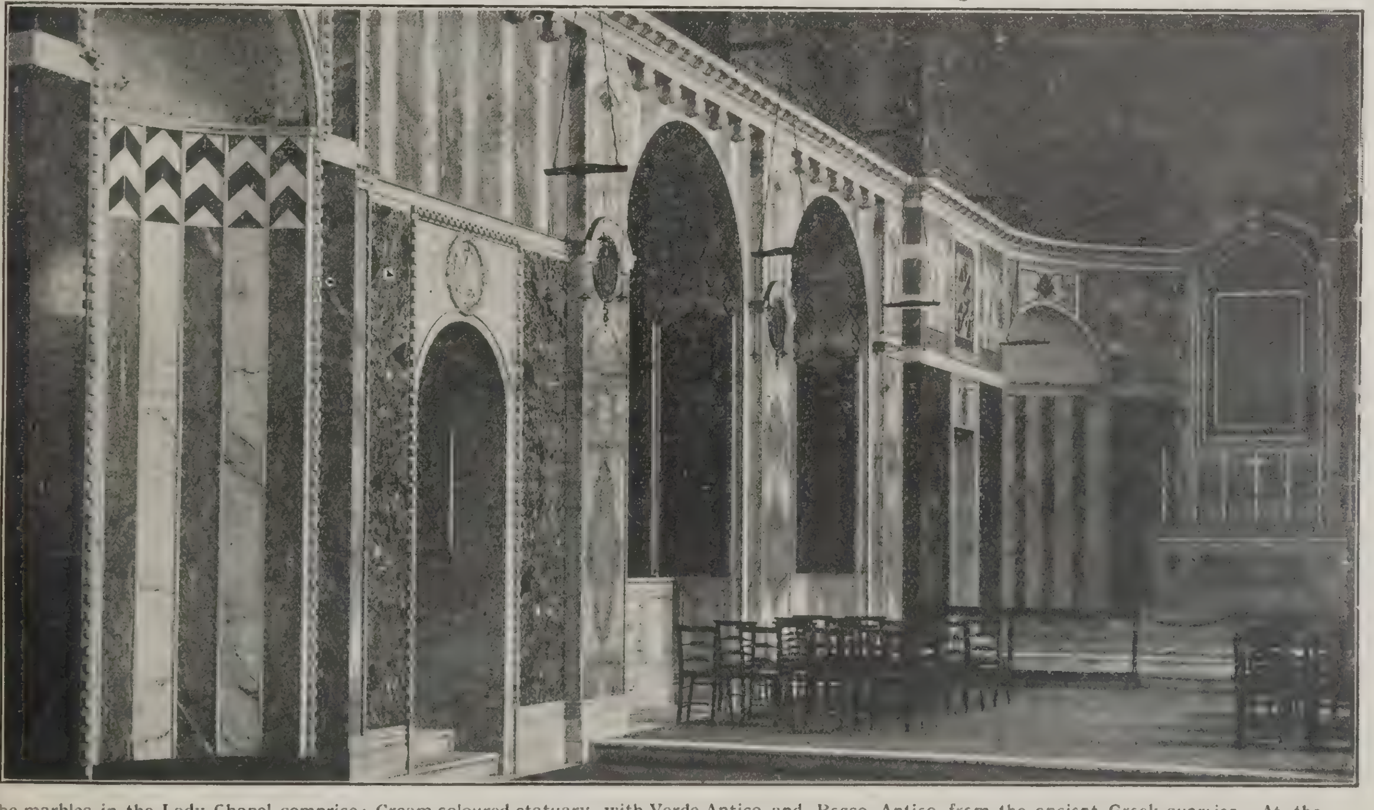
The six columns dividing the aisles of the Blessed Sacra ent Chapel and Lady Chapel from the sanctuary are of jasper and red Norwegian marble, and are of very beautiful colour and figure. The bases are of Derbyshire fossil marble, and the capitals are of white Carrara marble. Besides these columns there are above them fourteen columns of pavonazzo in the sanctuary galleries.

St. Edward's Tower.

The Campanile, or St. Edward's Tower, is built of hard red brick, banded with Portland stone; on the summit is some very effective carving in stone, the whole being crowned with a metal-covered dome or cupola, surmounted by a double cross of bronze. The total height is 284ft., and there are wide staircases to enable visitors to reach the top easily. Its name commemorates at once "the great saint and king" whose body lies in Westminster Abbey, and, in a way, King Edward VII., from whose coronation day the dedication was dated. An excellent guide to the cathedral is published by Messrs. Burns and Oates, 28, Orchard Street, W., and a good description was given in last week's "Catholic Herald."

The Architect.

The late Mr. John Francis Bentley, the architect of the cathedral, was born in 1840, and died on March 2nd, 1902. He was articled to Henry Clutton, and was at first enthusiastic for Gothic. He went to Italy to study the Roman and Byzantine styles; Rome, Palermo, Ravenna, Milan, Venice, and Santa Sophia, furnished him with object lessons. "What he saw and took in," Cardinal Vaughan said of him, "he steadily digested; and then, after a mental process that went on quietly and silently for months, he poured out rapidly and silently on paper his matured conception of a Byzantine cathedral, and presented his plans, complete in all their wondrous lines and details, exactly as they have been carried out." Mr. Bentley, the Cardinal declared, "was a poet; he saw and felt the beauty, the fancy, the harmony and meaning of his artistic creations. He had no love of money, he cared little for economy; he had an immense love of art, a passion for truth and sincerity in his work. . . He was exquisitely gentle and considerate in dealing with suggestions and objections, but he would have his own way whenever it was a question of fidelity to his standard of artistic execution." He was the R.I.B.A. Gold Medallist of 1902.



The marbles in the Lady Chapel comprise: Cream-coloured statuary, with Verde Antico and Rosso Antico from the ancient Greek quarries. At the of the altar there are Lapis Lazuli and Mother of Pearl, and other portions of the work show choice Breccia of Seravezza, Italy, and Campan Vert Pyrenees. The work has been executed by Messrs. Farmer and Brindley, Ltd., 63, Westminster Bridge Road.

WESTMINSTER CATHEDRAL: THE LADY CHAPEL. BENTLEY, SON, & MARSHALL, ARCHITECTS.

NEWS IN BRIEF.

We have received the following communication from the Secretary of the Royal Institute of British Architects :—"Dear Sir, —For some years past an impostor has been obtaining money and other assistance from architects throughout the country by representing himself as Mr. John W. Little, A.R.I.B.A., of Tonbridge. His action has caused the greatest annoyance to Mr. Little, and the police have been appealed to to check his operations. I shall be much obliged if you will kindly publish a note in your paper warning architects and others against giving any help to this man.—Faithfully yours, IAN MACALISTER, Secretary.

* * *

With reference to the note on "Brick Court," Temple, in our issue of June 29th, it may be mentioned that the general contractors for the new building, of which Sir Aston Webb, R.A., is the architect, were Messrs. Patman and Fotheringham, Ltd.

* * *

We are informed that Mr. F. R. Gould Wills, A.R.I.B.A., has resigned the secretaryship of the Architects' Technical Bureau, and joined in partnership Mr. J. Evelyn Daw, of 31-33, High Holborn. The style of the firm will be Daw, Gould, Wills and Co., architects, surveyors, and valuers, and will continue to practise at Chancery Lane Station Chambers, High Holborn, W.C.

* * *

The preamble of the Eastbourne Corporation Bill has been passed by the Local Legislation Committee (Section B) of the House of Commons, so far as it relates to the proposed extension of the boundaries by taking in part of the adjoining parish of Willingboro', and also as to the constitution of a new County Borough.

* * *

The Aberdeen Municipal buildings have, during the past two months, been under a process of washing with a solution of strong soda and washing powder. The contractor for the cleaning and repointing is Mr. George Farquhar, and for the repainting Mr. William Philip. The cost will be about £200, and the work has been carried out under the supervision of Mr. John Rust, the city architect.

* * *

A factory suddenly collapsed at Nottingham last week, four workpeople being injured, whilst a number of others had narrow escapes. The building, an old one, three storeys high, situate in Houndsgate, a business quarter of the city, was occupied by a boxmaker. Adjoining premises had been demolished, and new foundations had been put in preparatory to rebuilding. It was during a heavy gale that one of the walls gave way and fell.

* * *

Sir J. H. de Villiers, Chief Justice of the Supreme Court of South Africa, unveiled at Capetown, on June 28th, the statue erected by public subscription to the late Mr. Rhodes. The memorial is composed of four platforms of granite flanked by eight lions in bronze, surmounted by a bronze bust of the late Cecil Rhodes. The whole was the work of the late Mr. John Macallan Swan, R.A., who at the time of his death on February 14th last had not quite finished the work upon the bust.

* * *

Mr. William Adams Murphy, of Eliot Lodge, Sydenham, architect, who died on February 6th, 1909, left a will dated February 4th, 1909, which has recently been the subject of an action, judgment having been pronounced for its validity. His estate is of the gross value of £29,867, with net personalty £5,615, and after bequests amounting to £1,700, he left the residue of his estate to the Hospital for Sick Children, Great Ormond Street.

* * *

At a recent sitting of the Municipal Council, the Prefect of the Seine brought forward a motion for the immediate voting of a sum of £76,000 to be devoted to the repair of drains, which suffered seriously during the floods at the beginning of the year. M. Colmet Daage, the chief of the Seine Engineers, has presented a report which describes the situation as alarming. The drains resisted admirably during the floods, but their powers of resistance have necessarily diminished under the strain.

* * *

It having been stated that if the proposals of the Bill for the extension of the boundaries become law, Birmingham will become the second city of the Empire (with a population of 880,000), a newspaper correspondent contends that this ought to read "the fourth city of the Empire," as both Calcutta and Bombay would still be larger than Birmingham, the population of the former being 992,718, and of the latter 977,822. Should Birmingham be enlarged as proposed, it will become the second largest city of Great Britain—not of the Empire.

* * *

A correspondent of the "Glasgow Daily Record" draws attention to the number of "small tenement houses to be found in country places where one would naturally conclude to find small houses built on the cottage principle. Ground is not so heavily rented as to warrant this kind of building, and gardens, including everything therewith, are most complicated. Some of these houses, he states, do not seem to have any deafening (Anglicé : sound-proofing) used in their construction, so that privacy cannot be looked for even in the most trivial conversation. People go to the country for freedom in every respect, but such privileges are sadly curtailed by stupid surroundings."

* * *

The Board of Agriculture and Fisheries announce that the first caterpillars of the Large Larch Sawfly (Nematus Erichsoni, Hart) were seen this year on June 19th. They are now probably found in all places infested with this pest, and owners of larch plantations should arrange to have their trees examined with a view to the discovery of the pest, which must be notified to the Board in conformity with the Destructive Insects and Pests Order of 1910. A memorandum explaining the means of detecting the caterpillar and of distinguishing it from other pests of the larch can be obtained free on application to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall Place, London, S.W.

* * *

Mr. E. J. Dixon, A.R.I.B.A., Hon. Secretary of the Guild of Architects' Assistants, writes to the "Daily Mail" regarding Mr. T. G. Jackson's statement at Cambridge that he "had long maintained that architecture was to be regarded, not as a profession but as an art." In order that readers of that paper may not derive any inflated impression of the "art" of architecture from this statement, Mr. Dixon points out, on the authority of a well-known practitioner that an unqualified architect recently advertised for an assistant for the salary of £2 per week, and received 225 replies, some of them from associates of the Royal Institute of British Architects.

* * *

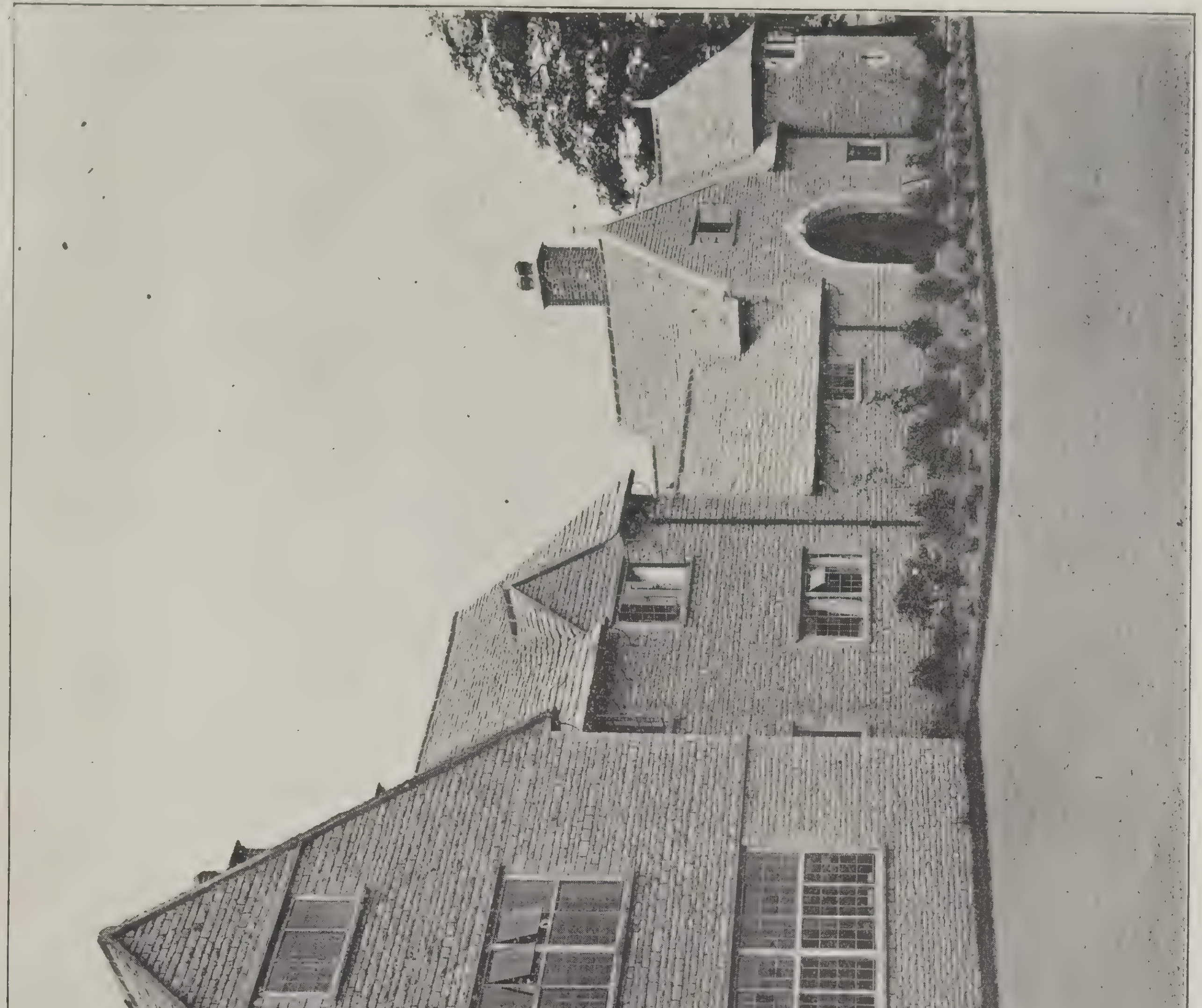
West Square Garden, which is situated just off St. George's Road, Southwark, was last week thrown open to the public by the Mayor of Southwark, Canon J. W. Horsley. The cost to the London County Council and the Southwark Borough Council has been £3,616, and the laying out of the square has been undertaken by the Metropolitan Public Gardens Association, whose chairman, the Earl of Meath, stated that there were difficulties in obtaining for public use these privately owned squares. We had no right as a public to take over such private squares without giving compensation. Personally, he did not think that it was beyond the wisdom of our rulers to find a way by which those squares might be maintained for the benefit of the public without, at the same time, doing injury to private individuals.

* * *

Answering a question put by Mr. Barnes (on behalf of Mr. J. R. Macdonald) in the House of Commons, regarding complaints by exhibitors regarding the bad arrangement of the British section of the Brussels Exhibition, Mr. Buxton said that the Board of Trade had received no complaints from exhibitors regarding the organisation of the British section, but, on the other hand, a large number of the exhibitors had expressed their entire satisfaction with the arrangements which have been made, and their gratitude for the assistance which they have received from the Department. In his judgment the officers in charge of the British section have thoroughly proved their competence by the way in which they have carried out their duties, and he had every hope that the arrangements made in regard to the exhibitions at Turin and Rome next year will be equally satisfactory, Naturally, the advice of competent artists and architects has been and will be sought so far as necessary.

* * *

In the House of Commons last week, Mr. Hindle asked the Chancellor of the Exchequer whether when preparing the new Budget he would consider the advisability of introducing a clause exempting from the incidence of the new increment duties all conveyances of land where the consideration was of less value than £500, on the same grounds and subject to the same conditions as those on which such conveyances were exempt from the increased stamp duties, seeing that in that class of small conveyances the expense and delay necessary in obtaining the official certificate required before the completion of the sale would be out of all reasonable proportion to the amount of revenue which would actually be receivable by the Exchequer. Mr. Hobhouse (Financial Secretary to the Treasury) replied : If the intention of my hon. friend's proposal is, in cases of properties of small value, to obviate expense and delay in connection with the presentation of the conveyances for the purpose of being impressed with the stamp referred to in Section 4 (3) (b) of the Finance (1909-10) Act, 1910, my right hon. friend does not think that there is any sufficient reason for the suggested exemption. The obtaining of the stamp in question does not entail any appreciable degree of either expense or delay. Documents deposited with the Inland Revenue for stamping are not in the great majority of cases retained for more than twenty-four hours.



This house is situated some few miles from Moreton-in-Marsh, on a slope overlooking a wide tract of undulating country, backed by a range of hills which rise from the plain to the west. It is built of local oolite stone (quarried near the site), which laminates freely into thin layers. The walls are in coursed rubble, with similar stone for the angle quoins and dressings, with joints raked out with a stick to emphasise the character of the local walling. The only dressed ashlar work is in the entrance porch and gable over, with a carved panel by Mr. A. Broadbent. The roofs are of stone slates from the Eyford pits, coarse in texture and varied in colour, and the chimney stacks are of red sand-faced bricks from Berkshire.

COLDICOTE, WARWICKSHIRE : THE ENTRANCE FRONT. E. GUY DAWBER, ARCHITECT.

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FIRE-PREVENTION NOTES.

Preventable Disasters. It is stated that since January 1st, 1909, "250 communities have been the scenes of hotel fires," presumably on the American continent alone, and twenty or more of the disasters had death rolls and lists of injured. Men, women, and children perished, or were crippled or disfigured; and yet nearly every one of the casualties could have been averted. The fires occur chiefly in a class of building known as "the summer hotel," which is "notorious kindling." "Insurance Engineering" once again insists on the familiar but greatly neglected moral that nothing will diminish the fire perils in hotels except good construction, adequate fire protection on the premises, a fire-alarm system in the house for quick communication with the fire department, a local alarm system for arousing guests, non-combustible stairways, an efficient watchman service, and stationary and portable fire-escapes of reliable types. What is above all essential is the awakening of the public to the point of demanding these safeguards. They want educating and arousing. So long as they go on taking, without protest, the terrible but avoidable risks from fire that still abound, so long will highly inflammable buildings be put up, in spite of the fact that reasonable and systematic precautions against fire are easily within reach.

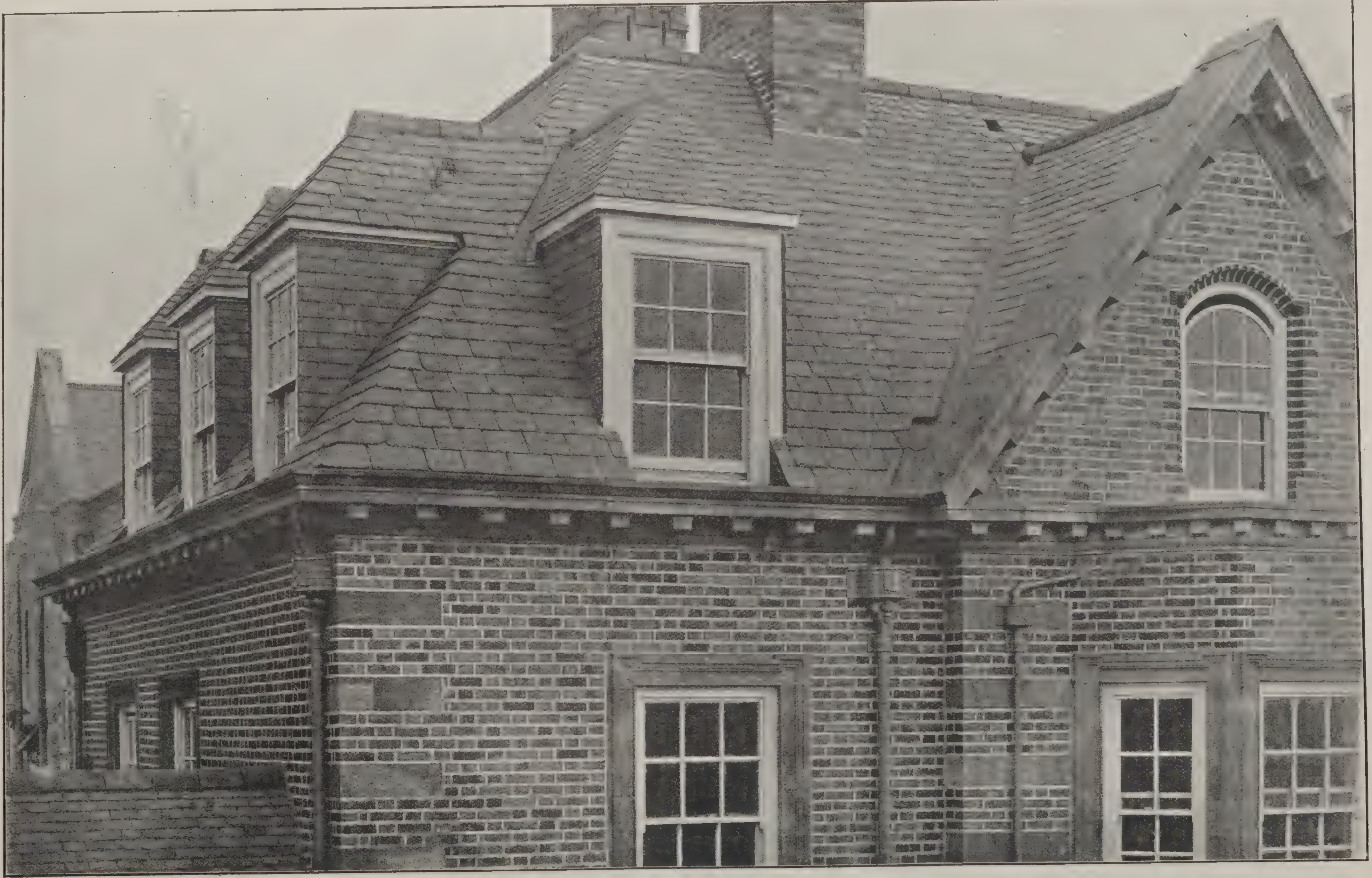
Honouring the Fire Brigade. The London County Council Fire Brigade Committee report that by command of his Majesty King George V. a detachment of the London Fire Brigade took part in the procession on the occasion of the funeral of his Majesty King Edward VII. The detachment consisted of an officer and 24 men, and was similar in number and character to that furnished by the Metropolitan Police. The position assigned to it was in the rear of the procession, but in front of the closing escort. The committee feel sure that the Council will appreciate the honour conferred upon it by his Majesty's gracious recognition of one of its most important services. The distinction thus afforded to the brigade will give an additional incentive to the officers and men to do all in their power to maintain the brigade in the highest possible state of efficiency. To this we may perhaps be permitted to add that the recognition of the importance of the service may also tend to popularise the brigade; and possibly, therefore, to stimulate the too languid interest of the public in this and in other means of fire prevention.

Fire-Resisting Paints. In discussing the question as to what sort of paint is best adapted for use upon interior woodwork in order to render it as fire-resisting as possible, an American contemporary presents the following: Experience has shown that paints consisting mainly of linseed oil, driers, and pigment are not fire-resisting, let alone fireproof. However, repeated coatings of water glass (silicate of soda) will serve the purpose. Apply to the wood three coats of silicate of soda, 33 deg. Beaume, and before the last coat has set hard, apply a thin lime wash, which unites with the silicate of soda, forming silicate of lime, which is an insoluble substance. Another fire-resisting paint is made as follows: Eighty pounds powdered silex, 40 pounds bolted china clay, and 20 pounds air-slacked lime are mixed intimately with 60 pounds liquid silicate of soda, 33 deg. Beaume, and then thinned to painting consistency. It may be coloured with any earth colour, such as ochre, umber, sienna, or red oxide, but not with chemical colours. Two coats are necessary. If the paint is to be pure white, add in place of any colour sufficient dry zinc white, using additional silicate of soda in the first mixing.

Insurance on Fireproof Buildings. A report presented to the National [American] Association of Cement Users by the Committee on Insurance will be in the nature of a revelation to insurance companies. It will also surprise the public to know that 28 per cent. of the owners of concrete buildings who replied to the committee's inquiries do not carry insurance on their buildings, some even refusing to insure contents, so thoroughly are they convinced of the fireproof qualities of concrete. This bears out our frequently repeated contention that insurance companies would be quick to see that it is better to accept a low rate on a thoroughly fireproof structure than to have the owner decline to take out insurance, and that that was exactly what would happen if excessive rates prevailed. It now appears that in America the refusal to take out insurance has happened in a number of instances. There has been a disposition on the part of some insurance companies to make concessions in the case of reinforced concrete, but it is said to be extremely difficult to persuade owners of buildings of this type that it is necessary so far as protection to the building itself is concerned. This is going too far. Building owners in our own country are more prudent, not to say less foolish. But while they do not absolutely refuse to insure, they reasonably look for lower rates in consideration of the expense they incur to render fire improbable; and we think that, as a rule, British insurance companies are very willing to do business on these lines. They recognise that it is to their advantage, as well as to the advancement of fire-prevention construction, to encourage a movement that must be profitable to both parties.

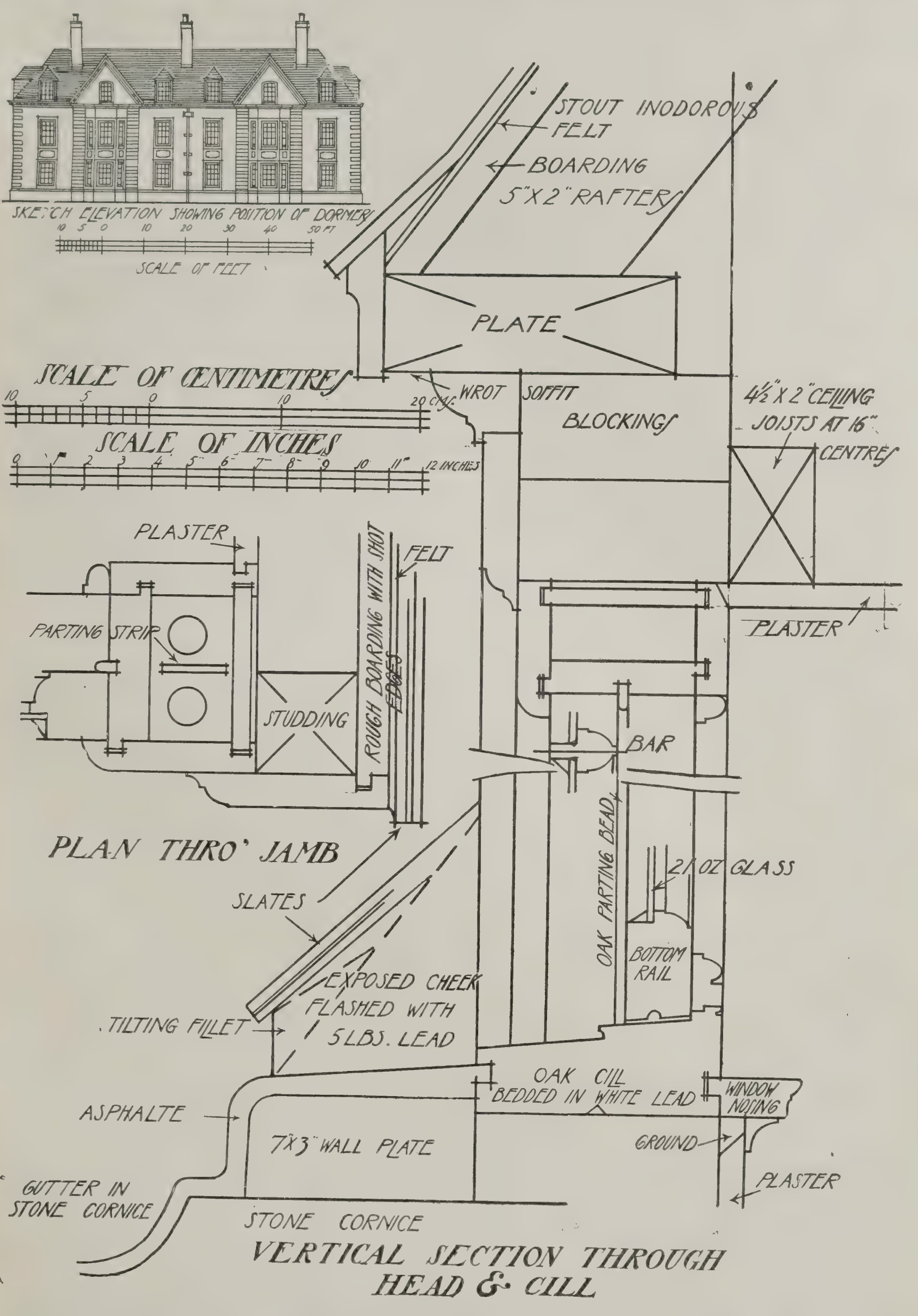
Fire Resistance of Reinforced Concrete. A number of official fire tests have been made on reinforced concrete floors in this country and the United States, and there have been one or two on completed buildings. Of course many actual fires have occurred in reinforced concrete buildings. The nett result has been to show that with a few obvious precautions reinforced concrete construction is exceedingly well adapted to resist fire, and that it seems to give more uniform and excellent results in practice than do other methods of fire-resisting construction. A fire test has recently taken place in an American city with a floor in an actually completed building under a test load. The structure was a ten-storey office-building, with floor panels measuring 22ft by 20ft. centre to centre of columns. The floors were designed for a working load of 100lbs. per sq. ft., and were required to stand a test load of 200 lbs. per sq. ft., with a deflection not exceeding ¾in. The actual deflection obtained with this load on the test panel was only ⅛in. The building inspector then had a fire test made of the loaded panel, and with a hot fire beneath the deflection increased to 1¼in. Water from a fire hose was then thrown on the bottom of the heated slab, and the recovery was ⅞in., leaving ¼in. deflection. A small amount of concrete spalled off under the action of the stream of water Notwithstanding this apparently excellent result, the building inspector strangely considered the result unsatisfactory in leaving ¼in. permanent deflection, and the approval of the structure on behalf of the City authorities is in dispute. The suggestion has been put forward that the bars on the underside of the slab may have taken a permanent set due to the heat, though it is more probable that the concrete has taken a certain amount of adjustment. But supposing the argument were correct, surely the result is very satisfactory, for the deflection was nearly all recovered, showing that the steel was quite able to do its work. For all practical purposes the floor was as good after the test as before.

Unnecessary Risks. Some interesting notes on fire insurance, by Mr. William Schooling, in the "Daily Telegraph," get down to first principles in this wise: "First and foremost, the object of insurance is to make sure. . . The second object of fire insurance is to enable people by co-operating with others to pay annually the cost of damage done by fire in such cases as their own. For this purpose it is important to see that those with whom we co-operate are subject to risks in the same class as ourselves; at least, this is important for any man whose own risk is a good one. It is advisable for birds of a feather to flock together in this respect, and for a man to see that he is not helping to pay for other people's bad risks while they are only contributing to his good risk. Of course, one man may insure the contents of his private house, and another in the same office insure printing works or cotton mills, or some other hazardous risk. Such distinctions are of little moment. because, by adjusting the rates of premiums the inherent inequalities of different risks are more or less equalised. What is important is to know that the office in which you are insured obtains its business from a good class of people, and charges adequate rate of premium." The rest of the article is mainly about finance, combines, management, and other matters with which for the moment we have but little concern. The point that appeals to us is that which refers to diversity of risks. This diversity is unnecessarily wide. Householders know this very well indeed, and refrain wholesale from insuring, because they think that their risk is infinitesimal. and that their premiums are inflated in view of the immense losses on large and hazardous risks. If, however, they could be assured that the companies insisted on the adoption of up-to-date fire-prevention methods in the big business buildings, and if, consonantly with that assurance, the premiums were made almost nominal, business from this source would rapidly multiply. It would therefore seem very well worth the while of the insurance companies to insist more rigorously than they do on the more complete adoption, down to the minutest detail, of modern fireproofing methods in business buildings; and they might use the undoubtedly powerful influence which they have in high quarters to make fireproofing methods compulsory. This they could do with a good grace, because of the manifest unfairness of making a man pay for his neighbour's bad risks, whether it happens to take the form of enhanced premiums, or the more horrent shape of actual damage from the fire next door or over the way.



This building, which is at Bournbrook, is a hall of residence for women students of Birmingham University. It is faced with thin Black Country bricks, with mottled Hollington stone dressings, and the roofs are covered with Buttermere green slates.

DORMERS TO WOMEN'S HOSTEL, BIRMINGHAM. HERBERT T. BUCKLAND AND E. HAYWOOD-FARMER, ARCHITECTS.



DORMERS TO WOMEN'S HOSTEL, BIRMINGHAM. HERBERT T. BUCKLAND AND E. HAYWOOD-FARMER, ARCHITECTS.

TOWN PLANNING.

The Duke of York's School Chapel Site. The War Office has decided to purchase the Duke of York's School at Chelsea. The chapel building will be adapted to military purposes, and the site of the school will be utilised as a training ground for territorials. This decision will give much satisfaction to those who feared that the site would be sold for building purposes and a valuable breathing space lost.

Wimbledon and Putney Commons Extension. The subscriptions towards the extension of the Wimbledon and Putney Commons now amount to about £6,000, most of which has been collected from residents in the immediate neighbourhood of the commons. The first object of the Council is to purchase the long strip of land on the western bank of the Beverley brook from the Robin Hood bridge to the wooden bridge, and, on the other side of the stream, from the latter bridge to Coombe Lane. This accomplished, the whole course of the Beverley brook from the Kingston Road to Coombe Lane will have been secured.

Liverpool and Town Planning. At the annual meeting of the Association of Municipal and County Engineers at Plymouth, it was announced that Mr. J. A. Brodie, Liverpool city engineer, had been elected a member of the Advisory Committee of the National Housing and Town-Planning Council. Mr. H. E. Stilgoe, city engineer of Birmingham, read a paper on town planning, in the course of which he remarked that the desirability of constructing wide streets or boulevards on town-planning lines was not a new one in this country. It was strongly urged by Mr. Jas. Newlands, borough engineer, in his report to the Health Committee of Liverpool in 1848. The spirit of Mr. Newlands was revived by Mr. J. A. Brodie, the present city engineer of Liverpool, who was now carrying out the work.

London Garden Squares. Mr. W. H. Dickinson, M.P., writes a long letter to the "Times" suggesting that the time has now come to safeguard the London squares from destruction by the intervention of Parliament. He points out that the London County Council made an attempt in 1906 to arrive at a solution of the problem by way of agreement, and negotiations were opened up with the owners of some 400 squares, an Act being passed, a result which secured immunity in the case of 64 of them. In most cases these were public bodies, such as the Crown and the Ecclesiastical Commissioners, but a few private landowners also fell in with the Council's wishes. The majority, however, would not consent, and it is in regard to these that intervention is proposed. "In many instances, Acts of Parliament have been obtained by the owners for the purpose of providing for the upkeep by means of imposing rates upon various other persons. But the leases and the Acts of Parliament leaving the reversion in the freeholder, with the result that, after a hundred years or so of uninterrupted existence as an open space—or rather as a breathing space—in the city, the land speculator rushes in, buys up the reversion, together with the fag-end of the leases, and proceeds to lay out the land so as to clear off with a profit. Or else he offers it to some public authority at an exorbitant price, which that body is generally compelled to pay rather than risk the injury to the public health which the destruction of these air spaces involves."

German Housing Scheme. The City of Charlottenburg has opened a Municipal "Wohnungsnachweis," or Housing Exchange, the idea of which is to supply, free of cost, information and assistance in providing dwellings for the poorer part of the population. The exchange acts gratuitously as house agent for those who apply to it, and by means of advertisements and the publication of lists. This is done without charge to either landlord or tenant, and the cost is found to be inconsiderable. In Cologne it is put at 1s. 6d. for each completed transaction. In some of the other German housing exchanges a small charge is made to the landlord; and in houses above a certain rental a percentage charge has to be paid by the landlord. The latter has to furnish exhaustive information about his premises, and the filing of scale plans showing the accommodation, position of fixtures, etc., is encouraged.

Municipal Housing in Ulm. The system of housing the working classes in Germany is bad. Such is the almost universal opinion of onlookers who have carefully studied it on the spot. I have been shown over those well-equipped barracks in Berlin and other large German towns, says Mr. T. Cox Meech, in the "Sheffield Independent," with the splendid wide streets ornamented by trees and looking out on to parks; and I have heard all the advantages explained by people who believe in this system. I have lived in what is known as a German "house" under conditions which made it possible to see the comfortable side of the life; and I have discussed the matter now and on previous visits to German towns. Naturally, there are people in Germany who contend that their system is the only one possible for their people, just as there are people in this country who refuse to believe that it is possible to learn anything from foreigners. The local rulers of the ancient free town of Ulm have taken a lesson from England. They have adopted the English system of cottages; and thus we see in this picturesque spot on the banks of the Danube an application of modern housing conditions in direct antagonism to the settled prejudices of the country. It is an even greater test than beginning a new system, yet it is succeeding well, and the death-rate is going down. Ulm is a manufacturing town of about 56,000 inhabitants—a delightfully clean old place with a history for splendid independence and courage as a free city going back to the ninth century, and coming down through all the most eventful and fascinating struggles of old-time German chivalry. The old landmarks still remain; but the surroundings have been brought up to date without destroying the romance or beauty of the ancient town. The municipality made up its mind that houses were needed for the working classes. It bought up the old fortresses, which, like those of other old towns, are now out of date; and still it wanted land. In Paris and in some other towns this would be a difficulty, but the State in German countries has a habit of asserting itself when the needs of the people are jeopardised by the interest of the individual. It does not argue and gesticulate and coax and scold. It clanks its heels together, salutes with the greatest respect, and somehow the individual gets to understand very quickly that he is less important than the State. The town of Ulm to-day possesses more than three-quarters of the freehold land within the boundary of Ulm and some beyond. The town is thus able to keep the price of land at a reasonable limit, and also to carry out its own improvement schemes unhampered by private owners, who may be inclined to turn cantankerous.

NOTES FROM PARIS.

The jury of the "Société des Artistes Français" (Old Salon) have awarded the medal of honour in the Salon for architecture to M. Hébrard, holder of the Grand Prix de Rome, for his great set of drawings of the restoration of Diocletian's Palace at Spalato. We repeat what we have already said, in reviewing the architectural gallery at the Salon, that this set of drawings ought to be seen in London. They are the property of the French Government, and we feel sure that the loan of them would be granted in response to an official request by the Council of the Institute of Architects.

* * *

The Municipal Council of Paris have decided on the prolongation of the Ourcq Canal, commenced by Napoléon, to join the Canal de l'Oise at Aisne. The new portion of the canal will be 108 kilomètres in length. The port of La Villette is to be enlarged as a part of the same scheme. The Municipal Council have also under consideration the erection of two new monuments in Paris, one to Haussmann, the other to the eminent French engineer Belgrand.

* * *

The Conseil Supérieur des Beaux-Arts have awarded a prize to M. Adolphe Thiers, architect, for his studies of the Byzantine churches of Constantinople, exhibited at the Salon; and they have awarded travelling studentships to M. Danis and M. Guidetti for their architectural exhibits at the Salon. Both architects exhibited fine sets of water-colour drawings of ancient monuments.

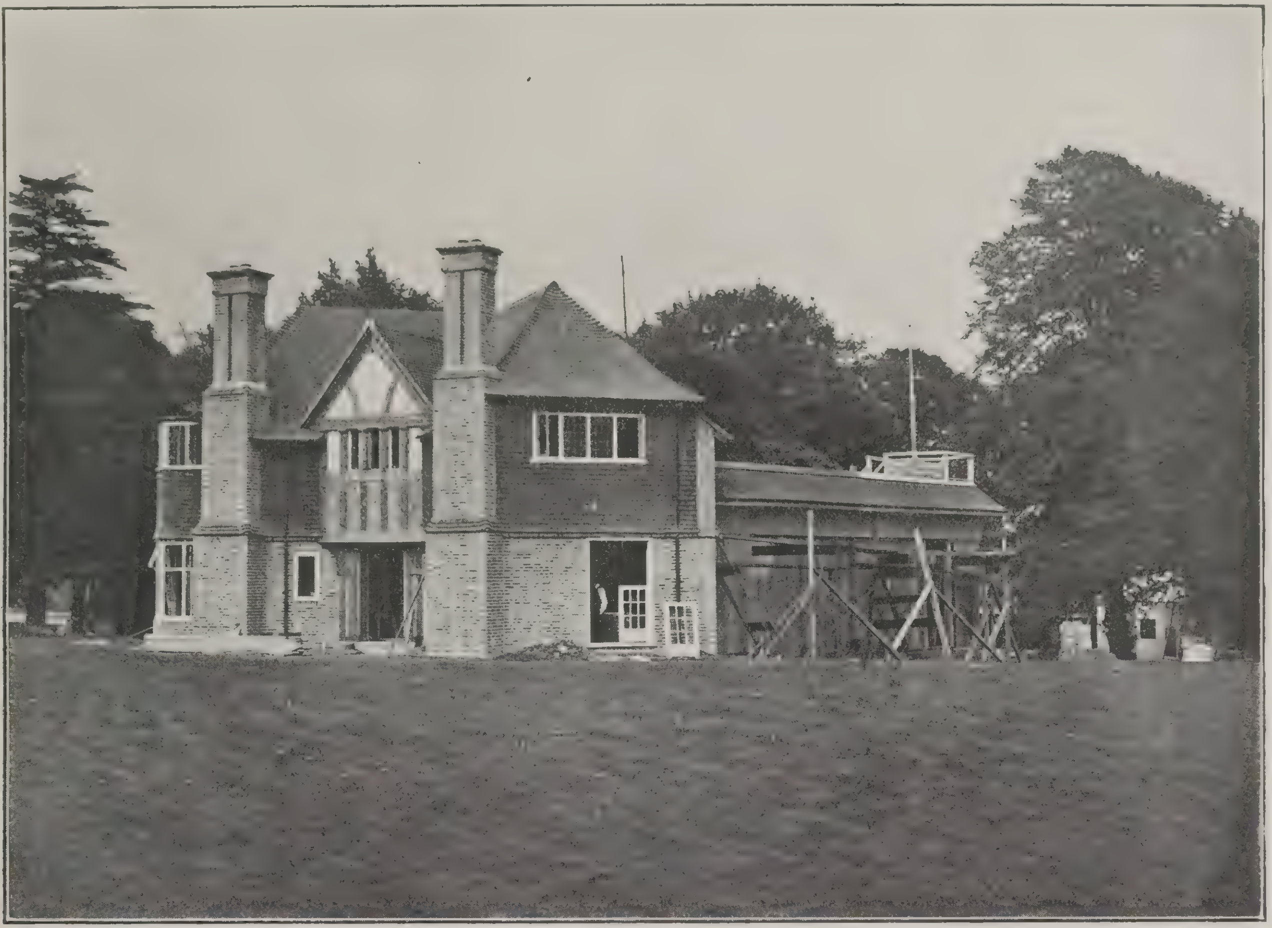
* * *

The Department of the Seine-et-Marne has opened a competition for a new asylum at Chailly-en-Brie.

PICTURE EXHIBITIONS.

The Leicester Gallery.

At the Leicester Gallery there is a large collection—not the first shown there, if we remember aright—of Du Maurier's original drawings in black and white made for "Punch." The amount and variety of humorous characterisation of social types to be seen in the collection is remarkable, and shows what a keen observer of every-day life Du Maurier was, and what a faculty he had for pourtraying such types. And the best of it is that there is really hardly any caricature in these figures; there is hardly a figure or face that one might not have met with some time or other in London; for this is emphatically a London show. But it cannot be denied that a whole room full of Du Maurier's drawings impresses one with his limitations, as well as with his powers. One is less impressed by the artistic quality of the drawings than by their satirical humour. The style of drawing is finished, precise, and careful, but we never seem to find the freedom of line which belongs to the work of such artists as Keene and Phil May. It is careful drawing of life, but hardly goes further than



THE AERO COTTAGE AT THE CRYSTAL PALACE. GORDON JACKSON AND KENDALL, ARCHITECTS.

that. Occasionally he hits upon a figure so typical of a whole movement as to seem a summary rather than a mere illustration of an individual. Such is the figure of the young man reading in a Greek attitude in No. 120—"Modern Æsthetics," which sums up all the more harmless side of the æsthete craze, as well as the odious figure of "Maudle" (No. 54) sums up its noxious aspect.

In another room at the Leicester Gallery is a collection of very beautiful water-colours of scenes in Japan—chiefly gardens—by Mr. Walter Tyndale; interesting both in the topographical and the artistic sense. Mr. Tyndale has great power in the treatment of the colour effect of Japanese scenery and gardens. A very interesting drawing is "The castle moat at Kofu," the moat being only visible as a closely packed assemblage of the leaves of water-plants, which look as if one could walk over them. Some bits of Japanese architecture are shown, but the exhibition is mainly one of garden scenery.

The Dowdeswell Gallery.

A collection of "studies and sketches, and some pictures," by Mr. Vereker Hamilton, at the Dowdeswell Gallery, contains some beautiful work. Many of the slighter sketches in oils are what nowadays would be often exhibited as finished pictures, so wedded have artists and critics become to impressionism; but Mr. Hamilton, in claiming no higher title for them than "sketches," leaves us free to admire them frankly as such. Many of them show exceedingly fine qualities of composition and colour; "The Princess in the Forest" has the making of a great picture in it. "Kensington Gardens in June" and "A Spate" are full of air and light. The large finished painting, "Sylviana," a knight in armour galloping away with a captive nymph, has been exhibited at the Academy, if we remember aright; it is an exceedingly clever painting. The one which we should specially single out, however, is "Madame de Château Chimère," an evening landscape with figures, of singular beauty and truth of light and colour. As a composition we think the small sketch for it, with a different placing of the figures, is still better, but it has not full effect of the larger work.

THE AERO COTTAGE AT THE CRYSTAL PALACE.

The Aerial League of the British Empire consider it desirable to impress upon the public that the development of aeronautics and aviation will very shortly reach a point (in its practical application as a means of locomotion in every-day life) in which its utility will be recognised as being on a par with that of the motor-car. It has been the aim of the Aerial League, in the inception of the Aero Cottage at the Crystal Palace, to show that any private gentleman with an acre or two of ground can utilise the same for the purpose of making flights and returning, and also that an aeroplane shed may be constructed, adjoining his country residence, which will not be any disfigurement to the general design of such a house, but, on the contrary, will add to the artistic effect. Two members of the League, Mr. Gordon Jackson and Mr. Sydney Kendall (of the firm of Messrs. Gordon Jackson and Kendall, of 17, Clifford's Inn, Temple Bar, E.C.), took up the project with enthusiasm, and brought the aero cottage and aeroplane house into actual existence on a site in the grounds of the Crystal Palace. The cottage is built principally of Dutch brickwork in the lower part of the walls and chimney-stacks, with red tile hanging above and roofs of the same material. A half-timbered gable and porch with plastered panels overlook the entrance court, the windows being lead glazed casements framed in white woodwork. Against one side of the building the aeroplane house, or hangar, is placed, the lower portion of which accommodates a machine, while its flat roof forms a balcony approached from the first floor of the cottage. Internally, the cottage consists of two sitting-rooms with kitchen and usual offices on the ground floor, and four bedrooms, including bathroom, etc., on the upper floor, which are ranged about a central hall having an upper gallery round it. The architects are Messrs. Gordon Jackson and Sydney V. Kendall, of 17, Clifford's Inn, London. The following are some of the contractors:—Dutch bricks and tiling, supplied by Ames and Hunter; partitions and entire plastering in "Xelite," Clark and Co.; jointless floors, Fenning and Co.; oak panelling, H. C. Cleaver, Ltd.; tile floors, Woolliscroft and Son; lead glazing and casements, F. A. Norris and Co.; paints, enamels, etc., Thos. Parsons and Sons; electric lighting and special fittings, Tredegar and Co. The general contractors were Messrs. Grace and Marsh.

ART ITEMS.

Phil May Memorial. Some time ago a committee was formed at Leeds to raise a fund for a memorial to Mr. Phil May. The house in which the artist was born is No. 66, Wallace Street, New Wortley, an industrial suburb of Leeds. It was decided that a tablet should be placed on the house, and Mr. Caldwell Spruce, of Leeds, was commissioned to make it. The tablet was unveiled by Mr. E. T. Reed, the caricaturist and colleague of May on "Punch."

The Young Collection. The third and concluding portion of the fine collection formed by the late Alexander Young, of Blackheath, who "stood easily first, in point of taste and judgment," among the British purchasers of about thirty years ago, took place at Christie's last week-end. The section comprised Barbizon and modern Dutch pictures.

"Chill October." At the Armstrong sale, at Christie's last week, 4,800 guineas was given by Messrs. Agnew for Millais's "Chill October." This is not the highest price ever given for a Millais, two other pictures of his having exceeded it; and his record standing at 5,200 guineas for the "Boyhood of Raleigh," bought in 1900, and now in the Tate Gallery.

Black and White. Sir Hubert von Herkomer, visiting the Southampton School of Art, where he received his early training, delivered a lecture on "Black and White Art." The fault of the decay of such work to-day must, he thought, be put down first at the door of the publishers, who no longer gave adequate payment; secondly, to the rush of the period, which left no time for study; and thirdly, to the indifference of the public, who had become satisfied with the snapshot illustration. Yet he was convinced that there were to-day artists as capable of fine work in black and white as at any other period in the history of art. The conditions, however, imposed upon them had disheartened them and rendered their ambitions inert. The beautiful art of etching, too, was well-nigh played out. Photography had achieved amazing things, but it had also brought confusion and cheapness.

Philip Sidney Memorial. A committee of Dutchmen has been formed at Zutphen for the purpose of honouring the memory of Sir Philip Sidney, who assisted the Dutch during their struggle for freedom against Spain. The name of the chivalrous soldier poet, which is held in such affectionate memory by Englishmen, is well known in Holland, and his many admirers there now desire to erect a statue to him at Zutphen, where he gave up his life in the cause he had espoused, on September 2nd, 1586. As it is feared that the total cost of the statue may not be entirely defrayed in Holland, it is hoped that sympathisers with the scheme in Great Britain may be willing to subscribe to it, not only to enable the committee to carry out their intention, but also to help to strengthen the bonds of friendship that subsist between the two countries. Subscriptions may be sent either direct to the treasurer of the committee, Count van Limburg-Stirum, or through his Britannic Majesty's Minister at the Hague.

THE DEVELOPMENT OF MODERN ARCHITECTURE.

Abstract of a paper read before the Birmingham Architectural Association by Gerald C. Horsley, F.R.I.B.A.

Note.—The author has made one or two quotations in this paper from a paper read by him at the Architectural Association in London in February, 1907, entitled "Some Aspects of Training and Design."

Modern Progress.

Those of us who have been engaged in our work in England during the last twenty or thirty years have witnessed a remarkable progression not only in the higher realisations of architectural art, but also in those arts which are allied to it. It will be conceded that we have witnessed the growth of a real understanding between artists which did not exist at the beginning of this period. We have seen workers in different crafts becoming acquainted with some of the difficulties, some of the possibilities, and some of the limitations in each other's work. This has been due to societies which have been founded, and to congresses which have been held (there was one at Liverpool and one in Edinburgh), where artists of all kinds have met and talked together, but chiefly, perhaps, to the efforts of the members of the Art-Workers' Guild in London, who determined to break down a certain antagonism and ignorance of each other's work which existed among artists. The Arts and Crafts Exhibition Society, which sprang from the Guild, has shown in a more public way what the crafts can do. The mutual knowledge gained has created a sympathetic alliance which has had the happiest effect, and we see the result of it in an increasing production of fine and beautiful work. Nevertheless, despite our progress in this direction, I believe an examination of our position will disclose that we have still far to go—that we are still on the threshold of our kingdom.

A Backward Glance.

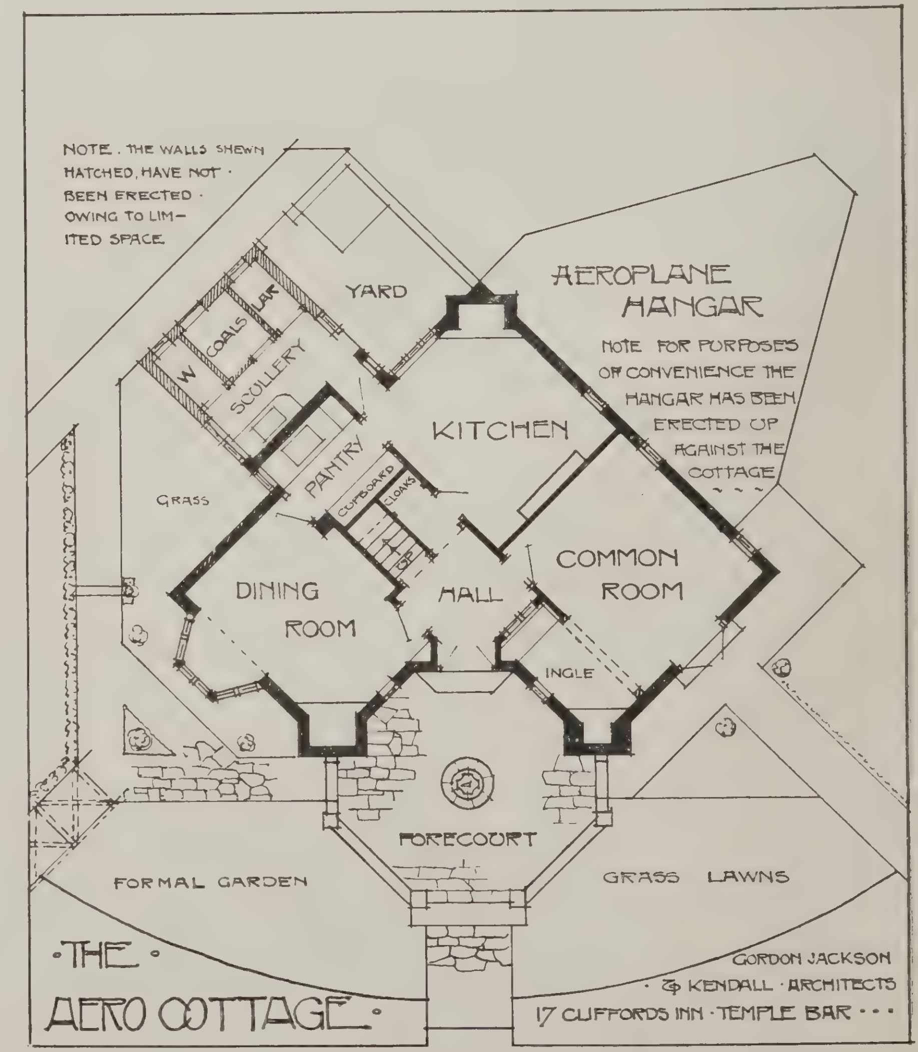
To understand something of the present position of modern architecture and the lines of its future advance, it is necessary to glance back and view some of the previous steps on the road. The real beginnings of our modern phase of architecture date from some 300 years ago, for then took place the momentous change from mediævalism to modernism. From the time of Inigo Jones in the early part of the seventeenth century, when his work decided its course, the development of our architecture has been clearly defined and made known to us by our historians.

Starting with Inigo Jones,

English architecture made a stately progress during 200 years. As witness to this we possess the work of Wren, Gibbs, Hawksmoor, Taylor, Adam, Stuart, Soane, Dance, Elmes, Cockerell, and Burton; and such buildings as the "Banqueting Hall," in Whitehall, St. Paul's, St. Mary-le-Strand, St. Martin's-in-the-Fields, Ely House, Kedlestone, St. George's Hall in Liverpool, and many others, which illustrate the dignity, soberness, and intelligence of the architecture of this period. But this fine and interesting manifestation in architecture was killed by the great wave of enthusiasm which passed over the country in the middle of the last century, and culminated in the Gothic revival.

The Gothic Revival.

Some of us vividly remember this enthusiasm, which had amongst its aims the determination to suppress all forms of art expressed in the terms of the Renaissance, and to encourage solely an architecture which should reflect the spirit, or be in direct imita-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tion. of Gothic art. When we think of the change in architectural expression brought about by the Gothic Revival in England in the middle of the last century, we must realise that there was some more fundamental cause for the collapse of the great architecture of modernity represented by the work of Jones, Wren, and their followers than either the reawakening of the English Church or the revived interest in mystery and romance, powerful as we know these causes to have been. We may be sure that if our architecture in the first half of the nineteenth century had been a living cohesive force, it could not have gone down so easily before the enthusiasm of Pugin and his followers, backed by the influence of the universities. Doubtless this artistic revolt which we call the Gothic Revival had to come, but it arrested for some time the development of our architecture on the lines of the Renaissance. We all know it was an honest movement, a very living force which has done great good, a protest against the pedantry and cold academic influence which for some years before its coming had done their best to stifle freedom in art; and that it succeeded in reviving principles which have animated all great periods of art. We must, however, notice that though it has left its effects, the movement, built up as it was on a wide basis of sentiment, was ephemeral; and that, compared with the sober progress during the first two hundred and fifty years of the three hundred I have spoken of, the advance in the last fifty years has been a stormy one, full of much vigorous fresh growth, but also of disturbance, eclecticism, and plagiarism.

The Cause of the Overthrow.

I have suggested that if the architecture before 1850 had been a living cohesive force, it could not have collapsed as we know it did. Had this been the case, literature and the Church, coloured with Romanticism as they were, and harking back as they did to the Middle Ages for their models, would still either have accepted the tradition in art and assimilated it to their needs, or, as was the case in France, work on what I may call Gothic lines would have run concurrently with the old tradition; I believe, therefore, that we must attribute the overthrow and break-up of tradition at this period, in the main, to the neglect of provision of the highest educational methods at the incoming of the New Learning into England, in the seventeenth century.

Unsystematic Progression.

From the day that happened to a time only a few years ago, we have been content to trust the progress of our architecture to individual genius, and to the transmission of tradition, the great torch of art, from studio to studio, and workshop to workshop, by the apprenticeship system, unaided by a really well-organised system of additional and necessary instruction; and without means of development or sufficient encouragement.

During these years we have had our full share of genius; but while its influence has supported the weaker brethren in the work of design and building, it has been necessarily a circumscribed influence, owing to the want of backing. The leading was the leading of a few individual artists with groups of followers, and no organised effort was made to train and level up the intelligence of the men engaged upon building. Thus no great artistic school was formed, and the result has been that there has been no practical realisation of a great National architecture.

National Architecture.

In France, on the other hand, adequate preparation was made when the Renaissance from Italy opened up new ways and avenues in the national life. The Renaissance movement began in France about the time of Francis I., and was due in great measure to the Italian workers brought over by him. Their work appealed to the French people; its spirit was assimilated, and inspired them to efforts and productions of their own. Louis XIV. in the seventeenth century was quick to feel what a transformation had taken place in life and art. He sympathised with the artists, and, aided by his Minister, Colbert, he made ample provision for the education of workers in the movement, and thus raised them intellectually, so that they could understand the New Learning brought from Italy. We find that Louis XIV. founded the Academy of Architecture in Paris in order to draw together the architects of the time for purposes of mutual edification. Inspiring addresses were made to the members of this institution by the presidents. François Blondel in 1671 said, "Let us confer together in good faith, and communicate our thoughts for the development of architecture. For it is true that it suffices not to have a medium acquaintance with the rules of this excellent art in order to be veritably an architect, and that this quality demands the co-operation of so many virtues and different attainments that a lifetime is insufficient to acquire it."

The Rise of Architectural Education.

And we know that they conferred together to good purpose, and spent laborious days and nights in the classes founded by the King; for Blondel tells us that the King decreed that "the sound principles" of architecture should be publicly taught by the Academy, "in order that a nursery, so to speak, of young architects might be formed."

In 1666 Louis bought a palace in Rome for the accommodation of the prize-winners in his architectural classes, for purposes of study. In such ways were founded, 250 years ago, the French Academy of Architecture, the Ecole des Beaux Arts. and the Grand Prix de Rome.

Ever since his time, the Government has encouraged by its protection and material grants in aid the fostering of an artistic spirit and improvement in attainment.

In consequence this great school of architecture has continued in France to this day. I will ask you to consider presently some of its results, but it is important for us to note, in the short comparison I am now drawing between our own country and France during the last 300 years, that precisely at the time when our own Renaissance architecture came to an apparently complete termination in the middle of the last century, French architects were at the height of their intelligence and vigour.

England Backward.

Compare with the conduct of Louis XIV. that of our own monarchs, James I. and Charles I., when the new spirit in architecture penetrated to England. They did nothing at all for architecture, although Charles I. encouraged the sister art of painting. Such help as architecture received, then and during the reigns of his successors, came from the learned and cultivated men of the land—patrons we call them. Such help was necessarily isolated and individual, often virile and valuable, but also often intolerant and narrow-minded. Thus there was no cohesion, no co-ordination, and, except for individual effort, a policy of drift, of *laisser faire*, which has led to disaster in other aspects of our national life besides that of our architecture.

French Decadence and Vitality.

It may be urged that, in spite of their training, there has been latterly a certain weakening in modern French architecture, too great a fondness for l'Art Nouveau, and too great a predilection for a form of architecture imitative of the well-known styles of Louis XV. and Louis XVI., and that if this is the result of so much school architecture, we are better without it. I do not think so; for we must bear in mind that the French have never lost their tradition; and however much we may regret the favour shown by a few French architects to l'Art Nouveau, and the taste for imitating too closely in some of their modern work that of the time of Louis XVI., they have, as a basis, a system of training which has passed through many vicissitudes, and has lived through them all; which has influenced the national taste, and which makes us hope that the present phase is merely a passing one.

The names of Duban, Labrouste, Duc, and Ginain constrain us to admit that that basis has helped to produce some of the greatest masters in architecture of modern times. As an example of the importance of tradition backed by systematic training in the art of building and in the planning of cities, we have only to compare some of the towns of France and of England in order to acknowledge how far France is ahead of us in these respects. Paris, with her ordered streets and uniform buildings so frequently beautiful, is far removed from the chaos which often disfigures many of our best cities.

Having made this short review of the steps in England and France which have led up to our own time, I turn now to a brief account of some of the principal works in this chain of years. Of these there are a few typical works of the time of Inigo Jones and Sir Christopher Wren, also a few of the later period of which St. George's Hall at Liverpool is the most notable.

Our Own Times.

From this period we pass to the time in which we have ourselves grown up, and with which, consequently, we are very familiar. It is only of them I propose to speak in any detail. I divide them into an ecclesiastical group, a house group, and a public buildings group.

The first group contains works by Butterfield, Norman Shaw, Bodley, Sedding, and the late George Gilbert Scott. The second, work by Norman Shaw, Nesfield, and some of their followers, a group of men who by their admirable work have picked up the threads of English tradition.

In addition to these three groups, the lecturer showed illustrations of some of the English and some of the French work executed approximately at the same period, namely, the middle of the last century. Some of the modern English examples are influenced by the Gothic Revival, others proclaim in their characteristics the return which has taken place within the last few years to the influences of the old English Renaissance tradition.

In the ecclesiastical group, we have work by Butterfield, Norman Shaw, Bodley, Sedding, the late G. G. Scott, and Bentley, work showing a fine sense of scale and proportion; the elimination of unessentials; a right employment of materials; and a proper restraint and judgment in the use of ornament.

Modern Domestic Work.

Although this English modern Church architecture is remarkable for fine qualities in design, the development during the last fifty years of a fine style in English house building is still more remarkable. In the development of the plan and design of the English modern house we have one of the beneficent outcomes of the Gothic Revival; for, thanks to it, the whole question of the treatment and arrangement of the English house was then closely investigated. It is, however, as we all know, owing particularly to the genius of Mr. Norman Shaw that the English house plan has in these latter years become a new organic element in architecture. The qualities of broad and dignified spacing, so great a feature of Mr. Shaw's plans, appear also most conspicuously in his elevations, and have contributed probably more than any other contemporary influence to the elimination of petty detail, unnecessary "breaks" and "features," from English house design [To illustrate this the lecturer showed the following views of some of Mr. Shaw's work, namely, (1) "New Zealand" Chambers in Leadenhall Street; (2) Lowther Lodge, Kensington, both dating respectively from the sixties and the seventies; (3) Swan House, Chelsea; (4) Alliance Assurance Company. St. James's Street, (5) Dawpool; (6) New Scotland Yard, all dating from the eighties; and of more recent work Bryanston, Chester, Parr's Bank in Liverpool, offices in St. James's Street, and the new hotel building in Piccadilly.]

(*To be concluded.*)

CROSBY HALL.

To mark the completion of the reconstruction of Crosby Hall, on the site of Sir Thomas More's garden at Chelsea, a reception was held last week by the chairman and council of the University and City Associations of London and the Warden of University Hall of Residence, Chelsea (Professor Geddes). The formal opening ceremony, owing to the death of the late King, has been postponed until next year. Among those present was the Right Hon. John Burns, M.P., who said it was appropriate in these days when the love of the beautiful in the City and in the home was becoming not only the possession of the rich, but the desired possession of the very poor, that they should make a feature in that fine building of housing and town planning, and that connected with it should be the work of that brave pioneer and fine spirit, Mr. Geddes, to whom town-planning owed so much. He confessed that as a London apprentice he possibly owed more to the reading of Sir Thomas More's "Utopia" than to any three names that he had any association with. As a Londoner he was delighted that they could claim the great Sir Thomas More as a citizen of London. It was well that a man could embody in his work, and life, and death the fine qualities that Sir Thomas More possessed—poet and lawyer (not often combined), prophet and economist, town-planner and labour leader, the friend of public health, the apostle of rational leisure and exalted pleasure.

A METAL LATHING TEST.

An interesting test on Hy-Rib, a new product of the Trussed Concrete Steel Co., Ltd., Caxton House, Westminster, has been carried out at the new extension works, British Museum, by the contractor, Mr. W. E. Blake, of Montague Place, W.C., and Plymouth. Hy-Rib is a metal lathing of great rigidity, which is attained by doubling the sheet in a ridge every 3in. along its length, the space between being expanded. This obviates the need of studs or other supports in the vertical, and will span up to 5ft. on the flat as a reinforcement to floor panels or roofs, the mesh being of a nature capable of containing the liquid concrete without the aid of the usual centering. It was to ascertain the degree to which this was successful that the two slabs were cast 6 weeks earlier, and the intention of the test was to load them to destruction.

Regarding the ability of the Hy-Rib to retain the liquid, the result was highly satisfactory. Each slab was 4ft. 6in. by 4ft. 3in. clear span. No. 1 was cast 3½in. thick with furnace clinker, of which a very trifling amount percolated and fell on the paper spread below to receive it. No. 2 was ballast concrete of the same thickness, and practically nothing fell. The mixture in each case was one part of Portland cement, two parts of sand, and three parts of aggregate. Hy-Rib of No. 24 gauge of a sectional area of .335 sq. in. per foot of width was used in each case.

The load was applied by means of blue bricks stacked so as to prevent arching. Slab No. 1 was loaded first and the deflection noted at various stages was as follows:—

Load per sq. foot.	Deflection.
266lbs.	1/32in.
324lbs.	1/16in.
440lbs.	3/32in.
673lbs.	1/8in.
1,080lbs.	5/32in.

Slab 2 was only loaded to the extent of 673lbs. per sq. foot, the deflection being 1/16in., and as the available headroom was nearly reached by the load of 1,080lbs. per foot super on No. 1 slab, it became evident that the original intention to break even the furnace clinker slab was out of the question.

NOTICE.

The Index to Vol. 31 of "The Architects' and Builders' Journal" is published gratis as a supplement to the present issue.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries sent must be on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s. made payable to Technical Journals, Ltd. and crossed, and stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Sound-proofing Partitions.

With reference to an enquiry and answer on this subject in our issue of February 16th, p. 132, Mr. Arthur L. Gibson, of Messrs. Arthur L. Gibson and Company, Radnor Works, Strawberry Vale, Twickenham, writes to say "that two layers of our Cabot's double-ply sound-deadening quilt, applied to the studding underneath the panelling, will give far better results than the method suggested, and that if silicate cotton plugging were to be used at all, it should not be packed tightly. Tight packing defeats the very purpose for which it is inserted. When the partition is packed with common plugging, it will be found that its efficiency as a sound-deadener gradually deteriorates, as the material disintegrates, settles, and packs tightly. Under these conditions you have at the top of the partition a solid air space left by the settling material, and this solid air space conveys sound. The solidly packed material below also conveys sound, and it is only by breaking up a space into numerous air spaces, which break the sound waves, as is done with Cabot's quilt, that you can get the best results."

Books on Reinforced Concrete.

W. B. F. W. (MOFFAT) writes: "Kindly give a list of the latest and best works on reinforced concrete, with an indication as to price. If you could include French and American works, which might be better than English, I should be obliged."

—"Concrete-Steel Construction," by Prof. Emil Mersch (London: Archibald Constable and Co., Ltd., 21s. nett). "Reinforced Concrete," by Chas. F. Marsh and Wm. Dunn (London: Archibald Constable and Co., Ltd. 31s. 6d. nett). "Principles of Reinforced Concrete Construction," by F. E. Turneave and E. R. Maurer (London: Chapman and Hall, Ltd. 16s. nett). "Concise Treatise on Reinforced Concrete," by Charles F. Marsh (London: A. Constable and Co. 7s. 6d. nett). "Manual of Reinforced Concrete," by Charles F. Marsh and Wm. Dunn (London: A. Constable and Co. 7s. 6d. nett). "Reinforced Concrete," by Frederick Rings (London: B. T. Batsford. 7s. 6d. nett.). "Reinforced Concrete Construction," by Albert W. Buel and Chas. S. Hill (London: A. Constable and Co. 21s. nett). "Concrete Steel," by W. Noble Twelvetrees (London: Whittaker and Co. 6s. nett). "Beton-Kalender" (Berlin: Wilhelm Ernst. und Sohn). The first mentioned book was reviewed in our issue dated June 15th. It is a translation from a German work and therefore it is unnecessary for us to refer to other German books, except the "Beton-Kalender," which is a useful pocket book of formulae and practical data. There are good French books, but we prefer the ones above mentioned. We would advise the purchase of the first, second, and fifth if a selection has to be made, though the other books are all valuable.

Removing Graves for Building Purposes.

R. J. H. (LLANFAIRFECHAN) writes: "I should know what the necessary requirements are, in the case of a place of worship situated in a graveyard, to gain the authorities' sanction for the removal of graves when extensions or rebuilding on the same site are contemplated."

—It is an offence against ecclesiastical law to remove the remains of the dead from consecrated ground without a 'faculty' in that behalf (Adam v. Colthurst, 1867, 2 A. and E. 30), but it is not anticipated that there will be any difficulty in obtaining a faculty in the circumstances above mentioned. A faculty is nominally obtained from the ordinary, but in practice it is granted by the Chancellor of the Diocese. Proceedings on an application for a faculty are commenced by a petition in the consistory court. They may be taken by the incumbent and churchwardens, with or without the addition of other parishioners, or they may be commenced by any parishioner. As the incumbent and the churchwardens are probably interested in the erection of the proposed building there should be no difficulty in our correspondent obtaining the necessary faculty. It may be mentioned that a faculty will be granted, in a proper case, notwithstanding the opposition of interested persons. Our correspondent will be well advised to communicate with the churchwardens.

X.

Preservative Solution for External Stucco.

H. J. T. (SCUNTHORPE) writes "Please advise me as to the best kind of solution for covering external stucco new work."

—What is required is apparently a kind of distemper or colour-wash. These are always somewhat difficult to apply satisfactorily, because the cement tends to make them peel away. For cream-coloured work, a mixture of china clay and water is often satisfactory, but querist's best method is to apply to a builders' merchant, as there are a number of distemper paints which may be used if expense is of secondary importance.

A. B. S.

Charge for Extra Pointing.

N. A. R. (GT. BERKHAMSTED) writes: "In a school now being built, of which I am the architect, the internal walls are faced with Arlesey bricks, which were to be pointed in the ordinary mortar (lias lime and sand 3 to 1), as the work was carried up. As soon as the walls began to rise above the ground floor level, I saw that the pointing looked too dark, and so I instructed the foreman to have the joints raked out and left for pointing at completion in stone lime mortar. I wrote to the contractors and asked them to quote me the difference in cost between the lias lime (3 to 1) pointing as the work was carried up and the stone lime (2 to 1) pointing as the scaffolding was taken down at completion. For a long time I was unable to obtain this price, but now the contractor asks an extra of 1d. per foot super, which means an extra on the contract of between £30 and £40. I should be greatly obliged if you would tell me what you would consider a fair and reasonable extra per foot super. My own idea was about ¼d. per foot extra.

Also, could you tell me whether the words 'fir framed in common rafters' could reasonably be held to include the labour of notching over purlins."

—(1) The builder no doubt bases his price upon current price books, which give the cost of struckjoint work at 1½d. per foot, and of "rake joints as work proceeds and point at completion" at 2½d. Had the work been originally specified as it is now carried out, however, it is most probable that there would have been no difference in cost between one method and the other, as contractors are often willing and anxious voluntarily to substitute pointing for struck joint, for their own convenience and credit in securing a uniform finish at completion. If the specification definitely says "finish with a struck joint as the work proceeds" without reference to raking the joints, the contractor is undoubtedly entitled to charge the net difference in cost of the two methods as above, since he uses no less lias lime mortar and extra labour and materials in making up the stone lime mortar, while the operation of raking joints is entirely extra. It should be possible, however, to bargain with him and secure lower terms, though your suggestion of ¼d. per foot super (representing 5ft. run of pointing) seems scarcely adequate. Notice the time occupied by a bricklayer in executing this quality and calculate the cost in labour on that basis. (2) Fir framed in common rafters certainly includes the labour of notching over purlins. Fletcher's book on quantities states that "where timbers are framed, that is, mortised and tenoned . . . such framing necessarily entails an additional amount of labour. In quantities, all works are understood to be fixed unless stated to the contrary, and would include the labour in nailing, laps, dovetails, etc." This is the common practice. G.

Concrete Gable Wall.

J. H. (Westminster) writes: "What width is necessary for this concrete gable end wall [diagram not reproduced] to be in order to remain consistent with safety?"

—If the building has brick division walls behind the large stanchions, they will form a good abutment for horizontal beams between the stanchions, but the span is so great that the beams would have to be constructed like lattice girders laid on their sides. Intermediate stanchions merely to support these girders would be required, and the brickwork would then be only a screen. The amount of wind pressure to be resisted will have to be very carefully fixed, according to the exposure of the wall. It may vary between a minimum of 21lbs. per sq. ft. and maximum of 42lbs. per sq. ft. For a warehouse wall of brickwork, according to the model by-laws, the thickness at the base would be not less than three bricks thick, and the top 16ft. would be 1½ bricks thick. But a brick wall must not in any storey be less than one-fourteenth of its height in thickness; therefore the thickness at base of this wall should be $\frac{50}{14} = 3{\cdot}57$ft., a part of which may be provided in piers of a collective width of one-fourth the length of wall. Reinforced concrete might be used dividing the wall up into rectangular panels, with horizontal and vertical beams, and it would then be calculated like a floor under distributed load, but the vertical beams should be arranged as triangular buttresses.

Henry Adams.

Removing a Chimney Breast.

S. C. (Fenton) writes: "I wish to remove a chimney breast in a ground-floor room, and should be pleased to know if the ¼in. wrought iron flat plate as shown in sketch [not reproduced] would be sufficient to support the back hearth, etc., of fireplace above. Also, in match-boarding a room that is already plastered, is it a good plan to put a boarding flush with the plaster or to remove plaster from walls before match-boarding same?"

—(1). The construction proposed would be most unsound. The iron plate loaded at its extreme edge would be extremely likely to deflect; the fixing by screws driven upwards into the trimming joists would depend entirely on the holding power of the screws in the wood, and, should they draw the entire weight of the projecting breast and hearth (applicant does not say what projection or how high so exact calculation is impossible) would be thrown on the wall, tending to overturn it. It would appear from the sketch that no system of corbelling would be sound in this case. It will probably be necessary to substitute R.S.J.s for the wood trimming joists, or to run a R.S.J. parallel with the wall, below the present joists, though if the weight is moderate and the wood trimming joists ample, it may be sufficient to fix a short length of tee steel between them by angle cleats on a level with the springing of the trimmer arch, to carry the hearth and chimney breasts, the construction in this case coming within the thickness of the floor.

(2). Boarding should not be fixed in contact with either brickwork or plaster, but should have an air-space at the back. The match-boarding, however, cannot be nailed direct to the plaster; it will require some fillets fixed to plugs in the wall, which will give air space, but encroach on the room. If this is a serious matter the plaster had best be removed and the fillets be fixed to the brickwork. . G.

Overheating of a Chimney Flue.

Ionic (Wokingham) writes: "The brickwork to the flue from a 5-ft. kitchen range gets so very hot that it is impossible to bear the hand upon the brickwork on the first floor. It also gets very warm on the second floor. The flue is perfectly clean and clear. The first and second-floor fireplaces are immediately over the range, and the flue is practically straight until going up out of the roof, when it is carried over about 2 ft. to miss a valley. The angle of carrying over cannot be too sharp, as the rods go up easily. The flue is 4½ in. with 9 in. back, and is built of ordinary red wire cuts. The brickworks gets dangerously hot, and the adjacent woodwork has split in places. Can the flue be lined outside with asbestos? If so, with what kind? Without the bend I think the flue would be satisfactory, although it is hard to believe that the bend is sufficient to 'bottle' the hot air. The range works perfectly."

—The flue can certainly be covered with an asbestos mixture, such as is used for covering boilers. Although it is not clear from the plans accompanying the enquiry [not reproduced] as to where any bottling of the hot air takes place, there is evidently some portion of the flue which prevents a proper draught. Would it be possible to make an outlet above where the flue is carried over to miss the valley? If this could be done easily it should be tried. It is very doubtful, however, whether it is possible to suggest an adequate remedy without elevation drawings showing the direction taken by the flue. A. B. S.

Pupilage Agreement.

F. G. C. (Bletchworth) writes: "I want to serve as pupil to a district surveyor, giving my services for a term in return for training, but not paying a premium. Can you advise me of any points which require special care when making such an arrangement?

—A simple memorandum setting out the terms of the arrangement for the pupilage should be drawn up, signed by both parties. I suggest that it should contain the following provisions:—Names and decription of parties and date when made: That the employer accepts, and the pupil agrees to serve for the purpose of learning the profession: That the pupil shall conform to all the office rules, and shall observe secrecy as to the business transactions which take place there: Office hours should be stated, and holidays, etc.—provision being made, if necessary, for their elasticity: Date of commencement of articles of pupilage, and provision for their termination by notice (or by effluxion of time): It is usual to state that when travelling expenses are incurred by the pupil, they shall be paid by the employer when they arise out of business done for him, but by the pupil when merely for his own benefit in obtaining experience: If the pupil be under age, his father's concurrence in the agreement is necessary. It will be well to have the agreement stamped by the Inland Revenue Department. F. S. I

By-law and a Building Site.

Boundary writes: "An urban district council have the following by-law: 'Every person who shall erect a new domestic building shall provide in the rear of such building an open space exclusively belonging to such building . . . he shall cause such open space to extend laterally throughout the entire width of such building to the boundary of any lands or premises immediately opposite or adjoining, to be not less than 10ft. If height of such building be 15ft., it shall be 15ft. at the least, and if height be 25ft. it shall be 20ft. at least, etc., etc.' This council have approved plans of an estate adjoining my client's property, and a road has been made. It is fairly obvious that any person building on this estate cannot leave the above amount behind his building. What course must I adopt to safeguard my client?"

—It is difficult to advise with certainty without seeing an entire copy of the by-laws in question, and without knowing by what authority they have been put in force. Assuming, however, that the by-laws are made pursuant to S. 157 (3) of the Public Health Act, 1875, it is clear that there is power in the district council to make them; for, by that section, an urban authority may make by-laws "with respect to the sufficiency of the space about buildings to secure a free circulation of air, and with respect to the ventilation of buildings." The query is not explicit; but it appears that the first building owner is endeavouring to make use of the highway as his air space. This is not sufficient (see *Jones v. Parry*, 57 L.T., 492), and he would apparently be liable for an infringement of the by-law. The question then arises: Has the other landowner, for whom our correspondent is acting, any remedy? We know of no form of action which he can launch against the district council for failing to put its by-laws in motion: his only remedy would appear to be to summon his neighbour for building in contravention of the by-laws. Yet it is not certain how far such a proceeding would be effective. We are unable to find a report of any case in which by-laws have been enforced at the instance of a private person, but there is no reason in law why they should not be. The only thing is that the defendant to such a proceeding would probably call the surveyor of the district council to prove that the plans had met with his approval. B.

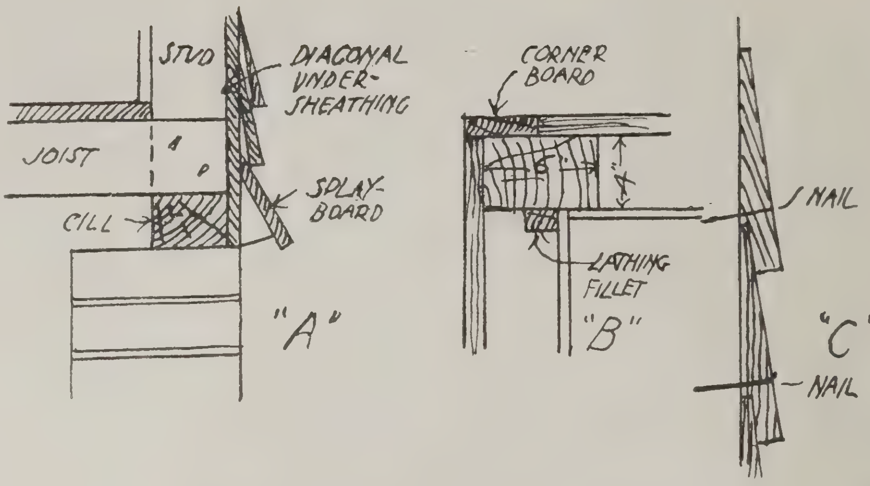
Weatherproofing a Bungalow.

Fenland (Cricklewood) writes: "I have been commissioned to erect a two-room bungalow, or studio, on the Essex coast (30 ft. by 18 ft., interior dimensions) for a client—an artist—and I enclose a section [not produced] which shows a timber-built structure on brick and concrete, and covered with either feather edge boardings or planed rebated chamfered boards—in either case tarred on the outside. The inside is to be lathed, plastered, floated, and set. The angle timbers are to be 4 by 4, horizontals 4 by 3, and intermediates 4 by 2, base plate 4 by 3. Would you consider this sufficiently weather proof, if well built? I suppose that Willesden paper or felt would be an improvement if placed between the studs and boarding, but the question of cost enters into consideration. Would it be safer to bolt the base plate into the brickwork at intervals, or would you consider the weight of the building itself sufficient to withstand any gales that may arise? My client has set his mind on a weather-boarded structure, so I am anxious to have it weatherproof. Any practical hints that you care to give me I shall appreciate."

—A timber building makes a perfectly warm and comfortable house, if properly constructed, but (particularly in an exposed situation on the coast) requires care to exclude the weather.

In "Fenland's" sketch design there are several points capable of improvement. If the sketch is to scale, the roof-pitch is certainly insufficient (about 35 degs.); a pitch of 45 degs. at least should be adopted, and the tiles should be bedded in lime and hair, or torched from beneath, after laying. Four inches by 2in. is hardly heavy enough for the rafters, unless supported by purlins, which, however, are useless unless they can be strutted from partitions; 6in. by 2in. rafters should be used with the construction shown, and if the roof is covered with diagonal boarding it will be stiffened considerably. There is no good reason for setting the sill or wall plate central on the foundation wall; it should be set flush with the outer face, as in the sketch A, thus economising surface concrete by contracting the foundation, and permitting the splay board to project, and throw water clear of the brickwork. The floor joists should also rest on the sill, and be nailed to the side of each shed. Bolts to secure the structure to its foundation would certainly be advisable. They should be bedded in the concrete and the nuts turned on above the sill. Willesden paper would greatly improve the equability of internal temperature if used under the boarding and roof, and the cost is so small—for a cottage it would be inconsiderable—only 1,600 feet super would be required. Another means of securing freedom from draught and rain, which is commonly used in America, is to cover the studding with double boarding, the first layer being rough, close-jointed boarding, applied diagonally. A few other points not arising out of the sketch may be useful to "Fenland." The studs should be doubled on either side of door and window openings. The angle timbers should not be square, but wider in one direction than the other, to give a nailing to the laths and boarding, and a fillet must be nailed up the broad face, as in the sketch B, to receive the lathing at right angles. The weather boarding must be stopped at the angles on vertical corner boards. The structure will require bracing; a cheap method is to let in a 6 in. by 1 in. board, diagonally at each angle, flush with the faces of the studs below the sheathing, and nail to each stud crossed. If the double boarding is used the diagonal under layer will be sufficient bracing. The best form of weather boarding is that shown in sketch C, which, owing to only one rigid fixing, is free to move without splitting.

G.

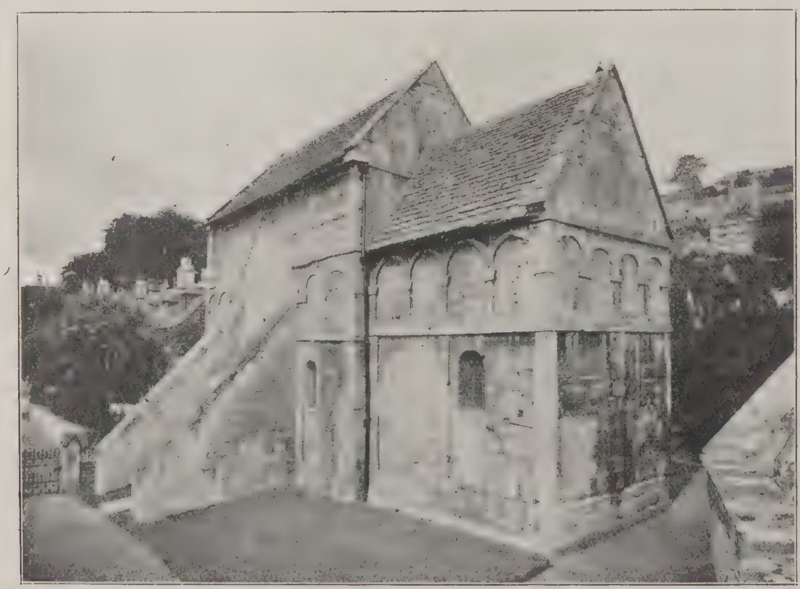


WATERPROOFING A BUNGALOW.
See Answer to Enquiry by "Fenland" (Cricklewood).

AN ANCIENT GUILD OF BUILDERS.

The Comacines: Their Predecessors and their Successors. By W. Ravenscroft, F.S.A., F.R.I.B.A. London: Elliot Stock, 62, Paternoster Row, E.C. Crown 8vo., cloth gilt, 3s. 6d. net.

There is a fascinating air of mysticism about this charming little book. Who are the Comacines? They were, Mr. Ravenscroft tells us, a community of builders who, at the fall of Rome, left that city and settled on an isle in Lake Como. But their real origin is lost in the mists of antiquity which float over Solomon's Temple and encircle the ark. They were of the mystic Brotherhood of Masons, and the work of their hands is rich in more or less vague and sacred symbolism. And it was good work. The wall shown on p.23 is a remnant of one of the three ruined churches which are all that remain of their work on the tiny Isola Comacine, in Lake Como. It is perhaps of the seventh century. One of their symbols, the Comacine knot or endless cord, as illustrated on p. 24, is to this day known in Italy as "King Solomon's knot." The Comacine influence on Saxon work is exemplified in the round-arched external arcades, with shafts, capitals, and bases, at Bradford-on-Avon. Without committing ourselves to Mr. Ravenscroft's theories, we can say without reserve that he has produced a charming and scholarly little monograph of much architectural and antiquarian interest.



SAXON CHURCH, BRADFORD-ON-AVON.
(From "The Comacines," published by Mr. Elliot Stock.)

NEW BUILDINGS.

PROPOSED.

Annfield Plain.—The Urban District Council has approved the following plans:—Four dwelling-houses on land at the rear of Century Terrace, Catchgate; dwelling-house on Messrs. Ritson's Estate, near Greencroft; five dwelling-houses at Mordue Terrace, Annfield Plain; dwelling-house and shop at Delight Bank, Dipton; two dwelling-houses on Messrs. Ritson's estate, near Greencroft.

Edinburgh.—The Earl of Rosebery has formally opened the new Corn and Cattle Markets and Slaughter-Houses which the Corporation of Edinburgh have erected, at a cost of £140,000 at Slateford, on the western outskirts of the town.

Glasgow.—The Glasgow Dean of Guild Court has granted the following linings:—Warehouse at 95, Morrison Street; new play-sheds at Kent Road and Strathclyde Public Schools and dressing-rooms at Woodside Public School; electric theatre at the corner of Charles Street and London Road, Bridgeton Cross; buildings in Ingram Street and College Street.

Harrogate.—The following plans have been approved by the Town Council:—Model dairy at "Larchfield," Leadhall Lane; bedrooms and motor car house at 17, Victoria Avenue; house at Warwick Crescent; additions to the Home for Incurables at Cornwall Road; additions to "Notton Turret," at Haddon Grove; motor houses at Cornwall Road; w.c.'s to houses, plot 16, Vernon Road; bay window, 40, Ripon Road; house and shop at Knaresborough Road.

Hebden Bridge. — The Salem Sunday-schools, Hebden Bridge, are to be extended at a cost of £2,000

Johnstone.—Ground has been purchased adjacent to St. Margaret's Roman Catholic Church, Johnstone, on which it has been decided to erect a new school at a cost of £3,000, providing accommodation for 500 scholars.

Ripon.—Messrs. Atkinson Bros., of Newcastle, have been commissioned to place seven stained-glass windows in St. Wilfrid's, Ripon, as a memorial to the late Lord Ripon, of Studley Royal.

Southend-on-Sea.—The following plans have been approved by the Town Council:—Six houses, Cotswold Road; two houses, Ronald Park Avenue; additions to refreshment room, Western Esplanade; two houses, South Avenue; five houses, San Remo Parade; house, Silversea Drive; house, Galton Road; two new roads, Wick Estate; making-up road, San Remo Parade; four houses, Rockleigh Avenue; two shops and houses, West Road; two houses, Leigh Road;

house, Leigh Road West; house, Galton Road; 18 houses, Chinchilla Road; house, Silverdale Avenue; additions, Clifton Terrace; two houses, Westcliff Park Drive; conversion of two houses into one; Imperial Avenue; house, Cossington Road; house, Ann's Road; five houses, Silverdale Avenue; house, Southchurch Beach; two houses and workshop, Whitegate Road.

Southampton.—The General Purposes Committee of the Harbour Board have considered a report from the Surveyor on the proposed enlargement of the pier pavilion, and at a subsequent meeting of the Works Committee it was moved and seconded "That the Works Committee endorse the General Purposes Committee's recommendations that a gallery be provided, and the size of the Pavilion increased in accordance with the Surveyor's plans, at a cost not exceeding £4,000."

Waterloo-with-Seaforth.—New schools for the Urban District Council for Waterloo-with-Seaforth are in course of erection in Rawson Road and Elm Drive. The buildings are divided into three departments—viz., (1) a mixed school for 400 scholars, containing eight classrooms, central hall, manual instruction and science rooms, and the usual teachers' rooms, etc.; (2) an infants' school to accommodate 200 scholars, containing four classrooms, central hall, etc.; and (3) a housewifery centre, which comprises a dwelling-house and special instruction rooms. It is proposed only to erect the mixed school and housewifery centre at present, the infants' school to be built at a later date. The contractors are Messrs. Wm. Hall and Sons, Ltd., Liverpool, and the architects Messrs. Appleyard and Quiggin, A.R.I.B.A., Liverpool.

Worksop.—The erection of the permanent chapel at St. Cuthbert's College, Worksop, made possible by the gift of £10,000 by Viscount Mountgarret, has been begun. The laying of the foundation-stone took place in July of last year, but only the foundations were proceeded with ere winter set in. The nave is 90ft. long by 36ft. wide, the total length being about 120ft., and the height approximately 60ft. The style is designed to harmonise with the other college buildings as far as practicable, and accommodation will be provided for the whole school. There are an ante-chapel, nave, and shallow chancel with sacristy. The fittings will be added from time to time, the contract only including the fabric. Mr. Ingelow originally designed the college premises, and Sir Aston Webb, with whom he has been associated, is the architect of the chapel. Messrs. Lowe and Sons, of Burton-on-Trent, have secured the contract, and their portion of the work is due to be completed by April next.

Westcliff-on-Sea.—The foundation-stone of the Lecture Hall in connection with the new Congregational Church at Crowstone Road has been laid by the Mayor of Southend, Councillor W. R. King, J.P. The new hall adjoins the church now in course of erection. It is being constructed of similar material, and considerable progress has been made with the work. The buildings comprise lecture hall, minor hall, vestries, church parlour, etc., with frontage to King's Road. On either side of the lecture hall there will be a number of classrooms divided from the hall by movable glass partitions, so that the whole area can be thrown open at any time. The hall will have a width of 51ft. and a total length of 76ft., and be amply lighted by clerestory and gable windows. The minor hall will be 40ft. by 53ft., thoroughly lighted and ventilated. Provision is also being made on the same level for the heating chamber, kitchen, etc. The vestries will be placed at the side of the lecture hall and over them a church parlour, a large room of 35ft. in length by 16ft. in width. The buildings have been designed in the Decorated Gothic style, and will be faced with Kentish rag stone and Bath stone dressings. Mr. F. E. Woodhams, of Southend, is the builder, and the work is being carried out under the supervision and from the designs of Messrs. Burles and Harris, architects, Southend.

IN PROGRESS AND COMPLETED.

Creaton (Northampton).—The new Northamptonshire Consumptive Sanatorium, which has been erected at Creaton at a cost of £7,000, has been opened by the Marchioness of Exeter. Mr. Fred W. Dorman, A.R.I.B.A., was the architect, and Mr. J. T. Powell the builder.

Farndale.—The Archbishop of York has reopened the Church of St. Mary's, Farndale, which has for some time past been undergoing extensive renovations. They have been carried out by Mr. Brotton, of Bilsdale, under the supervision of Mr. Temple-Moore, F.R.I.B.A., and consist principally in the enlargement of the chancel, which has been provided with a new oak roof. A new altar, pulpit, and font have also been provided, and the entire church re-seated at a total cost of £800.

Immingham (Grimsby).—The foundation-stones of the new Primitive Methodist Church at Immingham have been laid, and the total cost of the building will be about £1,000. The site of the building is on the road to the Dock, the style of architecture selected being Gothic. It is to be built of brick, having stone dressings, and will provide seating accommodation for about 200 people, while there is a schoolroom at the rear, with accommodation for about 70 or 80. Mr. G. H. Allison, of West St. Mary's Gate, Grimsby, is the architect.

Leicester. — The new Aylestone and Knighton baths, situate on the Knighton Fields Road West and erected at a total cost of about £6,000, have been formally opened. The baths are plainly built, being faced with pressed brick, relieved with stone dressings. The main building is about 120ft. long by 52ft. wide, and the swimming bath is 100ft. by 33ft., with a depth of from 3 to 6ft. Mr. Arthur H. Hind was the architect, and Mr. E. Fox the contractor.

London, N.—An enquiry has been held at the Municipal Offices, Southwood Lane, Hornsey, by Major C. E. Norton, a Local Government Board Inspector, into the application of the Hornsey Town Council for sanction to the sale of six acres of land at Highgate, acquired by the authority for erection thereon of houses for the working classes, and also to the application of the proceeds towards the repayment of the moneys borrowed for the purchase of this land, but conditionally that the land should only be sold for the erection thereon by private enterprise of houses suitable for the working classes.

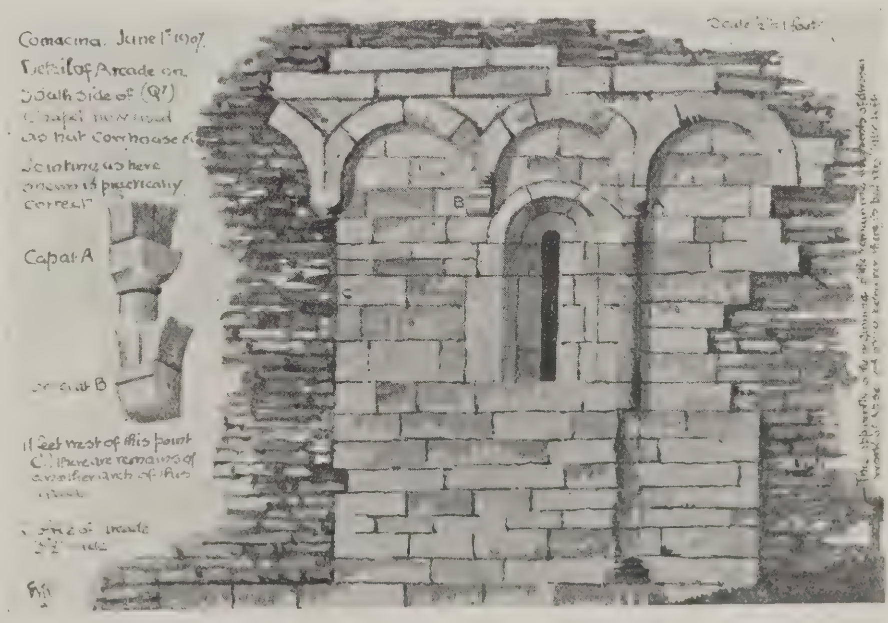
Newton Abbot.—A provisional scheme has been adopted by the Newton Abbot Guardians for enlarging their workhouse infirmary so as to provide additional accommodation for 60 more patients at a cost of between £4,000 and £5,000. The scheme is to be submitted to the Local Government Board for sanction.

Newcastle-on-Tyne.—The foundation-stone of the new St. John's Schools, which are in course of erection in Bath Lane, has been laid by Earl Percy. The building will be three storeys in height to accommodate 320 children, in eight classes, including the infants' department on the ground floor. The upper floors will be approached by means of two fireproof staircases, and the teachers' rooms, cloak-rooms, etc., will be provided in the back wing of the building, the roof of which is to be asphalted to serve as a playground for boys to supplement the ground floor playground. The external walls are being faced with Lowry's Penshaw bricks, with stone-dressings from Darney Quarry, Woodburn. Covered playsheds are provided under portions of the main building, the superstructure being carried on arches and pillars. It is expected that the new building will be ready for opening in February or March next year. The contractors are Messrs. J. and W. Lowry, and the architect is Mr. Charles E. Errington, A.R.I.B.A., Newcastle.

Rothwell.—The restoration of the largest church in Northamptonshire, namely, the ancient and beautiful Parish Church of Rothwell, Holy Trinity, is now practically completed, the nave and old vestry having been recently opened by the Bishop of Peterborough. Since 1902, between £8,000 and £9,000 has been expended on the renovations, and all that remains to finish the work is the replacing of some of the perished stones in the north side of the Lady Chapel and some necessary attention to the windows in the chancel. A debit of £750 still remains on the restoration fund.

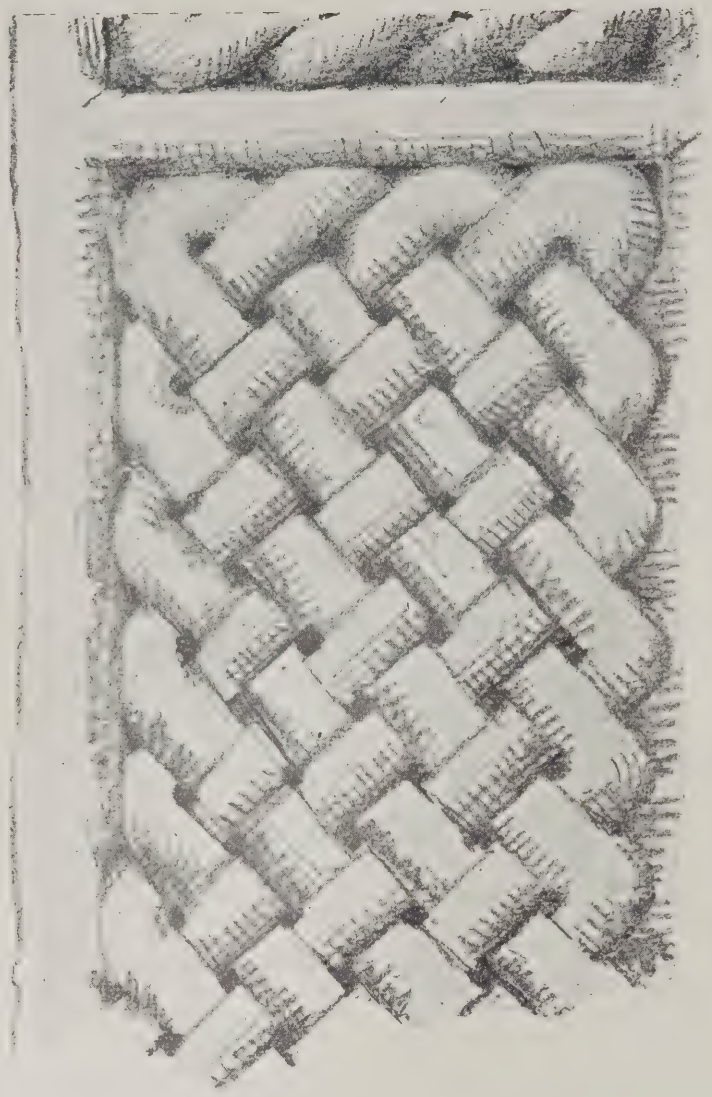
Sabden (Blackburn).—The foundation-stones of a new Baptist Church and School, to cost £5,000, have been laid at Sabden, the birthplace of Richard Cobden, by Mr. G. W. Macalpine, J.P.

Wattstown.—Erected at a cost of £3,600, the new Workmen's Institute has been opened by Mr. F. Shadforth Watts (chairman of the directors of the United National Collieries, Limited). The ground floor consists of reading-room and library, games room, and ladies' room, and caretaker's office, while the first floor consists of committee-room and a large billiard-room. The building is heated throughout by low-pressure system hot water, which was supplied and erected by Messrs. Proger and Sons, Cardiff, and lighted by electricity, fitted by Messrs. Beavan and Company, Newport. Messrs. Evans Bros., Cardiff, were the contractors, and the architect Mr. B. Hort Huxham, of Wattstown.



DETAIL OF WALL ARCADE, ISOLA COMACINA, LAKE COMO.

(From "The Comacines," published by Mr. Elliot Stock. See page 22.)



KNOT-WORK, ST. NEOT'S, CORNWALL.
(From "The Comacines," published by Mr. Elliot Stock. See page 22.)

VENTILATION AND ARCHITECTURAL ACOUSTICS.

It was suggested during the planning of the Boston Symphony Hall, U.S.A., that its acoustical properties would be greatly benefited by introducing the air for ventilation at the front and exhausting at the back, thus carrying the sound by the motion of the air the length of the room. The same suggestion has been made to the writer by others in regard to other buildings, but this case will serve as sufficient example. The suggestion was unofficial and the gentleman proposing it accompanied it by a section of a very different hall from the hall designed by Mr. McKim, but as this section was only a sketch and without dimensions the following calculation will be made as if the idea were to be applied to the present hall. It will be shown that the result thus to be secured, while in the right direction, is of a magnitude too small to be appreciable. To make this the more decisive, Prof. Wallace C. Sabine in a paper communicated to the New York "Engineering Record," assumes throughout the argument the most favourable conditions possible.

If a sound is produced in still air in open space it spreads in a spherical wave diminishing in intensity as it covers a greater area. The area of a sphere being proportioned to the square of the radius, we arrive at the common law that the intensity of sound in still air is inversely proportional to the square of the distance from the source. If in a steady wind the air is moving uniformly at all altitudes, the sound still spreads spherically, but with a moving centre, the whole sphere being carried along. If the air is moving toward the observer, the sound reaches him in less time than it otherwise would, therefore spread over a less spherical surface and louder. If, on the other hand, the observer is to windward, the sound has had to come against the wind, has taken a longer time to reach him, is distributed over a greater surface, and is less loud.

The three cases are represented in the accompanying diagram. The stationary source of sound being at *S*, *a* is the wave in still air arriving at both observers at the same time and with the same intensity. If the air is moving to the left, the centre of the wave will be shifted by an amount *d* to the left while the wave has spread to o_1 On arrival it will have the size *b*, less than *a*, and will be louder. On the other hand, while the wave is reaching o_2, the observer to windward, the centre will have been shifted to the left by an even greater amount d_2. In this case the size of the wave will be *c*, larger than *a*, and the sound will be less. The loudness of the sound in the three cases is inversely as the three surfaces *a*, *b* and *c*. If the distance of the observer from *S* is denoted by *r*, the loudness of the sound in three cases will be as

$$\frac{1}{r'} \quad \frac{1}{(r-d_1)^2} \text{ and } \frac{1}{(r+d_2)^2}.$$

The above result may be expressed in the following more simple and practical form. If, in the diagram, *a* is the wave in still air, its corresponding position when of the same size and, therefore, of the same intensity in moving air will be *a′*, the movement of the air having been sufficient to carry the wave a distance *d* while it has expanded with the velocity of sound to a sphere of radius *r*. The distance *d* and the radius *r* are to each other as the velocity of wind and the velocity of sound. If the observers o_1 and o_2 move, the one away from the source and the other toward it, by a distance *d*, the sound will be of the same intensity to both as in their first positions in still air.

In order to make application of this to the particular problem in hand, we shall assume a normal air supply to the room for ventilation purposes of one-seventieth of a cubic metre per person per second. This, if introduced all at one end and exhausted all at the other, in a room 17.9 m high, 22.8 m broad and seating about 2,600 persons, would produce a velocity of the air of 0.09 m per second, assuming the velocity to be the same at every point of the transverse section. Leaving out of account the questionable merits of this arrangement from the ventilation standpoint, its acoustical value can be calculated readily.

The velocity of sound under normal conditions being about 340 m per second, the time required to traverse a hall 40 m long is only about one-ninth of a second. In this short interval of time the motion of the air in the room, due to the ventilation, would be sufficient to advance the sound wave only 0.01 m, or 1 cm. It would thus arrive at the back of the room as a sphere with its centre 1 cm nearer than the source. That is to say, the beneficial effect of this proposed system of ventilation, greatest for the auditor on the rear seat, would to him be equivalent at the very maximum to bringing the stage into the room 1 cm further, or it would be equivalent to bringing the auditor on the rear seat forward 1 cm. This distance is so slight that without moving in his seat, in fact, without moving his shoulders, a slight inclination of the head would accomplish an equivalent gain. Thus, while the effect is in the right direction, it is of entirely imperceptible magnitude. If we take into account the sound reflected from walls and ceiling, the gain is even less.

The first adequate explanation of the variation in loudness of a sound with and against the wind was by the late Sir George G. Stokes in an article "On the Effect of Wind on the Intensity of Sound" in the report of the British Association for the Advancement of Science for 1857.

The essence of his explanation is that the great difference in loudness of sound with and against the wind is not due to the fact that the sound has been simply carried forward or opposed by the wind, but rather to the fact that its direction has been changed and its wave front distorted. The application of this consideration in the present architectural problem leads to the conclusion that the greatest benefit will come not from an attempt to carry the sound by the ventilating movement of the air, but by using the motion of the air to incline the wave front forward and thus direct the sound down upon the audience.

This can be done in either one of two ways, by causing the air to flow through the room from front to back, more strongly at the ceiling than at the floor, or by causing the air to flow from the back to the front, more strongly at the floor than at the ceiling. The one process carrying the upper part of the wave forward, the other retarding the lower part of the wave, will tip the wave in the same way and by an equal amount.

Again, taking an extreme case, the assumption will be made that the motion of the air is such that it is not moving at or near the floor, that it is moving with its maximum velocity at the ceiling, and that the increase in velocity is gradual from floor to ceiling. Keeping the same amount of air moving as in the preceding calculation, the velocity of the air under this arrangement would be twice as great as the average velocity at the ceiling; in the preceding case the wave was advanced one centimetre by the motion of the air while travelling the whole length of the hall. In this case, obviously, the upper part of the wave would be carried twice as far, two centimetres, and the lower part not advanced at all. This would, therefore, measure the total forward tip of the wave.

Fortunately, the acoustical value of this can be expressed in a very simple and practical manner. An inclination of the sound wave is equivalent acoustically to an equal angular inclination of the floor in the opposite direction. The height of the hall being 17.9 metres, the inclination forward of the sound wave would be 2 in 1790. The length of the hall being 40 metres, an equal inclination, and thus an equal acoustical effect would be produced by raising the rear of the floor about 5 centimetres. This considers only the sound which has come directly from the stage. It is obvious that if the reflection of the sound from the ceiling and the side walls is taken into account, the gain is even less.

It therefore appears that, using the motion of the air in the most advantageous way possible, the resulting improvement in the acoustical property of the hall is of an amount absolutely negligible. A negative result of this sort is perhaps not so interesting as if a positive advantage has been shown; but the problem of properly heating and ventilating a room is sufficiently difficult in itself, and the above considerations are worth while if only to free it from this additional complication.

The effect of uniformly raising the temperature of the air is to increase the velocity of propagation of sound in all directions. It is therefore essentially unlike the effect produced by motion of the air. In the case of a uniform motion of the air, the sound spreads spherically but with unchanged velocity, moving its centre in the direction and with the velocity of the wind. Thus, when blown toward the observer, it reaches him as if coming from a nearer source. Blown away from the observer, it arrives as from a more distant source. An increasing temperature of the air increases the velocity, but does not shift the centre. The sound reaches the observer coming from a source at an unchanged distance. A rise in temperature, therefore, provided it be uniform, neither increases nor decreases the apparent intensity of the sound. The intensity at all points remains wholly unaltered.

The above is on the assumption that the temperature of the air at all points is the same. If the temperature of the air is irregular, the effect of such irregularity may be pronounced; for example, let us assume a room in which the temperature of the air at the upper levels is greater than at lower levels. In order to make the case as simple as possible, let us assume that the temperature increases uniformly from the floor to the ceiling. To make the case concrete, let us assume that the hall is the same as that described above, practically rectangular, 40 × 22.8 × 17.9 metres. The velocity of the sound at the ceiling, the air being uniform, is greater than it is at the floor. In traversing the room the sound wave will thus be tipped forward. The effect is practically equivalent as before to an increased pitch of the floor or to an increased elevation of the platform. Without going into the details of this very obvious calculation, it is sufficient to say that in the case of the hall here taken as an example a difference of temperature top and bottom of 10 deg. C. would be equivalent to an increase in pitch of the floor sufficient to produce an increased elevation of the very back of 10 centimetres. A difference in temperature of 10 deg. C. is not excessive, and it is obvious that this has a greater effect than has that of the motion of the air.

In the above discussion of the effects of motion and of temperature on the acoustical quality of a room, it has been assumed that we are dealing solely with the sound which has come directly from the platform. The argument holds to a less degree for the sound reflected from the ceiling and from the walls. The above estimates, therefore, are outside estimates. The effect is on the whole certainly less. It is safe to say that the total attainable result is not worth the effort that would be involved in altering the architectural features or in compromising the engineering plans.

But, while uniform variation in the motion or in the temperature of the air in the room are on the whole negligible factors in its acoustical character, this is by no means true of irregularities in the temperature of the air, such as would be produced by a column of warm air rising from a floor inlet. That this is a practical point is shown by the testimony of Dr. David B. Reid before the Committee of the Houses of Parliament published in its report of 1835. This committee was appointed to look into the matter of the heating, ventilation and acoustics of the houses which were being designed to replace those burned in 1832. Of the gentlemen called before the committee, Dr. Reid gave by far the best testimony, part of which was as follows.

Speaking of the hall temporarily occupied by the House of Commons, he said: "Another source of interruption which might be guarded against is the great body of air which I presume arises whenever the heating apparatus is in action below. In different buildings I have had occasion to remark that whenever the atmosphere was preserved in a state of unity as much as possible, equal in every respect, the sound was most distinctly audible; it occurred to me that when the current of hot air rises from those large apparatus in the middle of the House of Commons it would very likely interfere with the communication of sound. On inquiry, one gentleman told me he had frequently observed it was impossible to hear individuals who were on the opposite side of this current, although those at a distance were heard distinctly where the current did not intervene."

This and other evidence seems to demonstrate fairly clearly that under certain circumstances abrupt irregularities in temperature may result in marked and, in general, unfavourable acoustical effects. The explanation of these effects in both cases is somewhat as follows: Whenever sound passes from one medium to another of different density or elasticity a portion of the sound is reflected. The sound which enters the second medium is refracted. The effects observed above were due to these two phenomena, acting jointly. In a large room with speaker and auditor facing each other at a comparatively short distance apart, but with a cylindrical column of hot air rising from a register immediately between, the voice of the speaker, striking this column of air, lost a part by reflection; a part of the sound passed on, entered the column of warm air, and came to the second surface, where a part was again reflected and the remainder went on to the auditor. Thus, the sound in traversing the column of hot air lost by reflection at two surfaces and reached the auditor diminished in intensity. It reached the auditor with diminished intensity for another reason. The column of warm air acted like a lens. The effect of the column of air was not like that of the ordinary convex lens, which would bring the sound to a focus, but rather as a diverging lens. The effect of a convex lens would have been obtained had the column of air been colder than that of the surrounding room. Because the air was warmer, and therefore the velocity of sound through it greater, the effect was to cause the sound in passing through the cylindrical column to diverge even more rapidly and to reach the auditor very considerably diminished in intensity. Which of these two effects was the more potent in diminishing the sound, whether the loss by reflection or the loss by lens-like dispersion was the greater, could only be determined if one knew the temperature of the air in the room, in the column, and the diameter of the column. The phenomenon is a real one, and one to be avoided. If, instead of having a single screen of great temperature difference between speaker and auditor, there were mainly such differences in temperature, though slight in amount, the total effect might be great. This corresponds, in the effect produced, to what Tyndall calls a "floculent condition of the atmosphere" in his discussion of the transmission of fog signals. Tyndall points out that if the atmosphere is in layers alternately warm and cold, sound is transmitted with much more rapid diminution in intensity than when the atmosphere is of very uniform temperature. This phenomenon is, of course, much more important with such temperature differences as occur out of doors than in a room, but it suggests that, in so far as it is a perceptible effect, the temperature of a room should be homogeneous. This condition of homogeneity is best secured by that system of ventilation known as "distributed floor outlets."

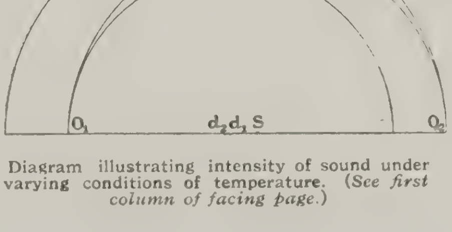


Diagram illustrating intensity of sound under varying conditions of temperature. (*See first column of facing page.*)

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

JULY 9. PROPOSED USHER HALL, EDINBURGH. **Particulars given in our issue of April 20th. Inquiries to be addressed to Thomas Hunter, Town Clerk, City Chambers, Edinburgh.**

JULY 20 YSTRADGYNLAIS SEWERAGE SCHEME. **The Rural District Council will pay £20 for the most suitable scheme for sewering Ystradgynlais Lower.** Particulars from Mr. T. Watkins, surveyor to the Council, Ystradgynlais.

JULY 25. NEW ELEMENTARY SCHOOL, WINCHESTER. Designs are invited from Hampshire Architects for Elementary School Buildings to accommodate 330 children. Particulars of Thomas Holt, Town Clerk, Town Hall, Winchester.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. **Limited to Architects practising in Coventry. Particulars given in our issue of March 16th.**

SEPT. 5. THE QUEEN'S UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

NO DATE. ASHTON-ON-MERSEY. WESLEYAN SUNDAY SCHOOL. Limited to Architects practising within ten miles of Sale. Inquiries to Mr. J. O. Barrow, Barker's Lane, Ashton-on-Mersey.

COMING EVENTS.

Saturday, July 9th, 1910.
Visit of Guild of Architects' Assistants to Wesleyan Methodist Hall, Westminster, S.W., at 3 o'clock.

Saturday, July 16.
NORTHERN ARCHITECTURAL ASSOCIATION.—Students' Sketching Club.

Tuesday, July 19.
ROYAL ARCHÆOLOGICAL INSTITUTE.—Annual Meeting at Oxford commences and continues till July 28th.

Wednesday, July 20.
NORTHERN ARCHITECTURAL ASSOCIATION.—Annual Excursion to Rievaulx and Byland Abbeys.

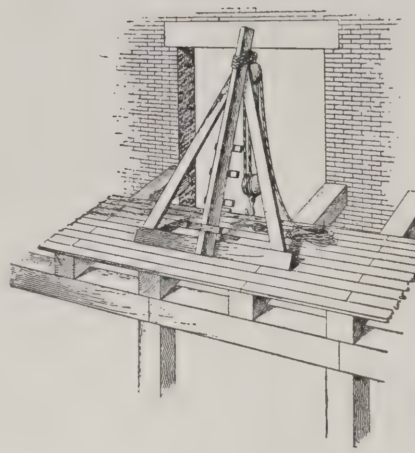
Monday, July 25th.
INSTITUTION OF MECHANICAL ENGINEERS.—Summer meeting commences at Birmingham and continues till Friday, July 29.

AN IMPROVISED DERRICK.

There are rather frequent occasions when it becomes necessary hastily to lower into or raise from basement or cellar, or from one storey of a building to another, great weights, such for example, as safes, machinery, wooden cases, etc., and for this purpose it is often necessary to devise some extemporised means in order to accomplish the work quickly and satisfactorily. An appliance for such a purpose is illustrated in the sketch shown herewith (with acknowledgments to the "Building Age"), the apparatus being rapidly put together by a builder for lowering a boiler, elevator machinery, and dynamos from the street into the basement of a recently erected building.

The drawing explains itself. The derrick is placed on a platform or bridge extending over the sidewalk, this bridge being not only for the purpose of providing a protection for pedestrians passing underneath against materials and scraps falling from the new building while in process of construction, but also affording a clear working space for the mechanics and the materials with which they are concerned.

The derrick is built up of 2in. by 8in. or 3in. by 12in. balk, which is set on edge. Square to one end a piece of 1in. by 8in. flooring is solidly nailed, and then on each side the derrick plank or timber, as it may be termed, is braced with two 1in. by 6in. strips or pieces securely nailed as indicated in the sketch. The derrick slopes at an angle of about 60 degrees when placed against a well or lintel of a window opening, for example, and is provided with climbing cleats and tackle. Its construction is but the work of a few minutes, and it is most useful when a job of this nature is to be done in a hurry. Its makeshift and temporary character will be fully recognised, and judgment must be used as to its strength and sufficiency for any particular purpose.



AN IMPROVISED DERRICK.

FEDERATION NEWS.

Lancashire, Cheshire, and North Wales Federation.

The monthly meeting of the Administrative Committee of the Lancashire, Cheshire, and North Wales Federation was held on June 10th, the president, Mr. Wm. Cooke, junr., in the chair.

The half-yearly report drafted by the secretary was taken as read, and, after several slight amendments had been suggested, the same was provisionally adopted to present to the quarterly meeting of the Executive Board.

A recommendation of the Finance Sub-Committee with reference to the examination of the accounts, was then considered, and it was resolved:—"That in future the accounts be laid before the Finance Committee, prior to presentation to this Committee." It was also decided to recommend to the annual general meeting:—"That in future the Finance Sub-Committee should be composed of the President, two Vice-Presidents, the last retiring President, the Hon. Treasurer, and the two Hon. Auditors."

A letter was read from the Northern Centre Executive respecting the proposed amendment to National Rule 4, of which notice had been given by Mr. Smith, to provide that "ex-Presidents" of the National Federation shall remain on the National Committees for one year after the expiry of their term of office. The Centre Executive proposed a further amendment that the term be extended to "two years." It was agreed that this Federation support the amendment proposed by the Northern Centre Executive

A letter was read from the Liverpool Association requesting the Federation to take the necessary steps to have the law altered to make it illegal for the same person to act as architect or engineer, and arbitrator. After some considerable discussion, it was resolved:—"That the matter be sent on to the National Committee and Northern Centre Executive, with a request that they take action therein."

A letter was read from the Northern Centre Executive asking the Federation to pay the expenses of a representative from this Federation to the meetings called to consider and amend the N.A.O.P. Agreement, and it was agreed that the same be paid.

A deputation then attended from the Liverpool Association in support of a letter received from them and read at the last meeting of the Administrative Committee. The deputation complained of the delay in the publication of a certain report, and after some considerable discussion thereon, it was agreed to call a special meeting of this Committee for Friday, June 17th, to consider the matter.

The quarterly meeting of the Executive Board was held at the Boardroom, Blackfriars Street, Manchester, on Monday, June 20th, Mr. Cooke, junr., presiding over an attendance of twenty representatives from the Federated towns.

The half-yearly report, as provisionally adopted by the Administrative Committee, was taken as read, and after some considerable discussion the same was adopted to present to the annual general meeting.

The annual statement of accounts, which had been duly audited, was approved. It was agreed to pay a further contribution to the National Reserve Fund in accordance with the amount allocated to June 30th, 1910.

The Insurance Committee recommended all members of the Federation to protect their own interests by having a "special Federation policy," and at the same time support the Company formed by the Building Trade for their protection. This recommendation was confirmed.

The chairman explained the recommendation of the Administrative Committee, that in future the Finance Sub-Committee should be composed of the officers and the retiring president, and after some discussion on the best manner of filling the vacant offices rendered necessary by the retirement of some of the members, the meeting terminated.

The annual general general meeting of the Federation was held at the Victoria Hotel, Deansgate, Manchester, on Monday, June 20th, at 2.30 o'clock, when the president (Mr. W. Cooke, junr.), presided over an attendance of 45 representatives from the federated towns.

Mr. B. B. Moss, Liverpool, called attention to the lack of information in the possession of the local associations regarding the reserve fund account, and moved:—"That it be a recommendation to the Finance Sub-committee to consider the advisability of keeping the accounts for the National and County Federation reserve funds separate in future." This was carried.

The President, in moving the election of Mr. Frank Woods, of Bolton, as president for the ensuing year, stated that he had been in comumnication with Mr. Thomas Meadows (the senior vice-president), who had replied to the effect that as he was going out of business he would be unable to accept the office of president. Mr. Cooke then referred to the excellent work Mr. F. Woods had been doing for some time past in the interest of the Federation, and formally moved his election. This was seconded by Mr. H. S. Daniels, and carried with acclamation. Mr. Woods then took the chair vacated by the retiring president.

The new president then moved that the best thanks of this meeting be tendered to the retiring president (Mr. W. Cooke, junr.), for the excellent services he has rendered to the organisation during his term of office. This was seconded by Mr. W. Bullen, and carried unanimously. Mr. Cooke suitably acknowledged the vote of thanks.

Councillor Thomas Woolfenden, Rochdale, was elected the senior vice-president, and Mr. Samuel Gerrard (Manchester) junior vice-president. Mr. N. R. Stirling (Liverpool) was elected the hon. treasurer, Messrs. James Ramsden (Bury) and James Merritt (Birkenhead) were elected the senior and junior hon. auditors respectively.

The following were elected on the Administrative Committee, along with the officers and chairmen of the seven branch trade committees, ex-officio:—Messrs. John Cartmell (Preston), J. S. Brown (Liverpool), W. Tinker (Manchester), and J. Jackson (Radcliffe).

The Insurance Committee were re-elected for the ensuing year, with the substitution of Mr. Hugh Oldham (Rochdale) for Mr. J. E. Tinline (Bury).

A recommendation of the Administrative Committee: "that the President, along with the vice-presidents, retiring president, hon. treasurer, and the two hon. auditors, in future constitute the Finance Sub-Committee," was considered, and after some explanation duly confirmed.

The president, two vice-presidents, together with Messrs. Robert Hall (Bury) and Bertram B. Moss (Liverpool), were re-elected on the Organising Sub-Committee.

The recommendation of the Executive Board to amend Rule 31 of the Federation as follows, was considered and adopted:—"That the names of honorary members shall not be included in any official list of Federation members which is circulated amongst the affiliated local associations"; and that "If Rule 31 be amended as above suggested, the names of such honorary members shall be inserted in the next issue of the half-yearly report after the list of 'Ordinary Members for the respective towns.'"

The recommendation of the Administrative Committee: "That Mr. Robert Innes, of Norfolk Street, Manchester, be appointed solicitor to the Federation on the terms agreed upon, was then considered and duly confirmed.

A recommendation of the Insurance Committee to renew the business of the Insurance Department with the Federated Employers' Insurance Association, Limited (as per resolution included in the Executive meeting reported above), was then considered, and, after some considerable discussion thereon, it was resolved:—"That the same be confirmed, printed, and circulated to the presidents and secretaries of the local associations."

Under the head of general business, Mr. Robt. Hall called attention to the present constitution of the various Federation Committees, and moved:—"That it be a recommendation to the Administrative to take into consideration the advisability of giving the Executive Board full power to appoint the various Sub-Committees from amongst their members at a meeting to be held prior to the annual general meeting of the Federation, on lines similar to those adopted by the public bodies and county councils." This was carried.

A member from Rochdale called attention to the unsatisfactory conditions of a form of contract that had been issued in their district, which he understood had been accepted by several members of the Manchester Association, and he was instructed to forward particulars thereof on to the Federation secretary, with a view to having the matter brought before the notice of the Administrative Committee.

It was decided to place the following on the agenda for consideration at the half-yearly meeting of the National Federation, to be held at Chester on July 27th:—"To consider the question of recommending all local associations to adopt a reference list of architects, quantity surveyors, and clerks of work."

The President, in closing the meeting, asked the members to make a special effort to attend the half-yearly meeting of the National Federation, to be held in Chester on July 27th.—JOHN TOMLISON, Secretary.

Hull.

The annual picnic of the Hull Association was held on June 16th, when 140 members and friends journeyed by the Hull and Barnsley Rly. to Liverpool. After luncheon the party went by steamer to New Ferry, and enjoyed a close view of the liner "Lusitania." Thence they went to Port Sunlight, where Messrs. Lever Bros., Ltd., had kindly arranged to have the party conducted round their works. The drive was continued through Birkenhead and Seacombe to New Brighton, whence, by means of another ferry boat, the visitors returned to Liverpool, where they dined, their number being augmented by the presence of the President and Treasurer of the Liverpool Master Builders' Association. The Hull president (Mr. R. Finch), and Messrs. J. Townsley and E. Quibell, and Mr. Costain, the Liverpool president, addressed the company.—A. PEERS, Secretary.

Edinburgh, Leith, and District.

The tenth annual tour of the Edinburgh, Leith, and District Building Trades Association and Building Trades Exchange took place on June 22, to Aberfoyle and the Trossachs. A company of over 80 ladies and gentlemen left the Waverley Station by special train, going to Aberfoyle, via Stirling. On reaching Aberfoyle, coaches were in waiting at the Bailie Nicol Jarvie Hotel to convey the party over the hills to the Trossachs. On arrival at the Trossachs Hotel dinner was served, Mr. David Wilson, J.P., president, being in the chair. The afternoon was spent visiting the local places of interest, including Losh Katrine, whence the Glasgow water supply is derived. The return journey was made over the mountain passes to Aberfoyle, where the special train was again boarded, and Edinburgh was reached shortly after 9 o'clock in the evening.—JAMES CAMERON, Secretary.

Sheffield Master Builders' Association.

Death of Mr. Arthur Mastin.

By the death of Mr. Arthur Mastin, which took place on Sunday, the 26th June, the Sheffield Association loses its most enthusiastic member. Though he was only in his forty-third year, the stamp of his individuality was indelibly fixed on the association, which had accorded him all the honours it was within its power to bestow. For ten years he was honorary treasurer, and in 1905 was president, being at that time the youngest president the association had ever had. His illness has been a long and painful one. The funeral took place at the City Road cemetery on Wednesday last, and was very largely attended, amongst those present being many representatives of the Master Builders' Association, the Plasterers' and Plumbers' Associations, the Building Trades Exchange Club, and the Sheffield Wednesday Football Club, Ltd. The bearers were six of the oldest employees of Messrs. J. Mastin and Son, Ltd., of which the late Mr. Mastin was managing director.—THOS. SMITH.

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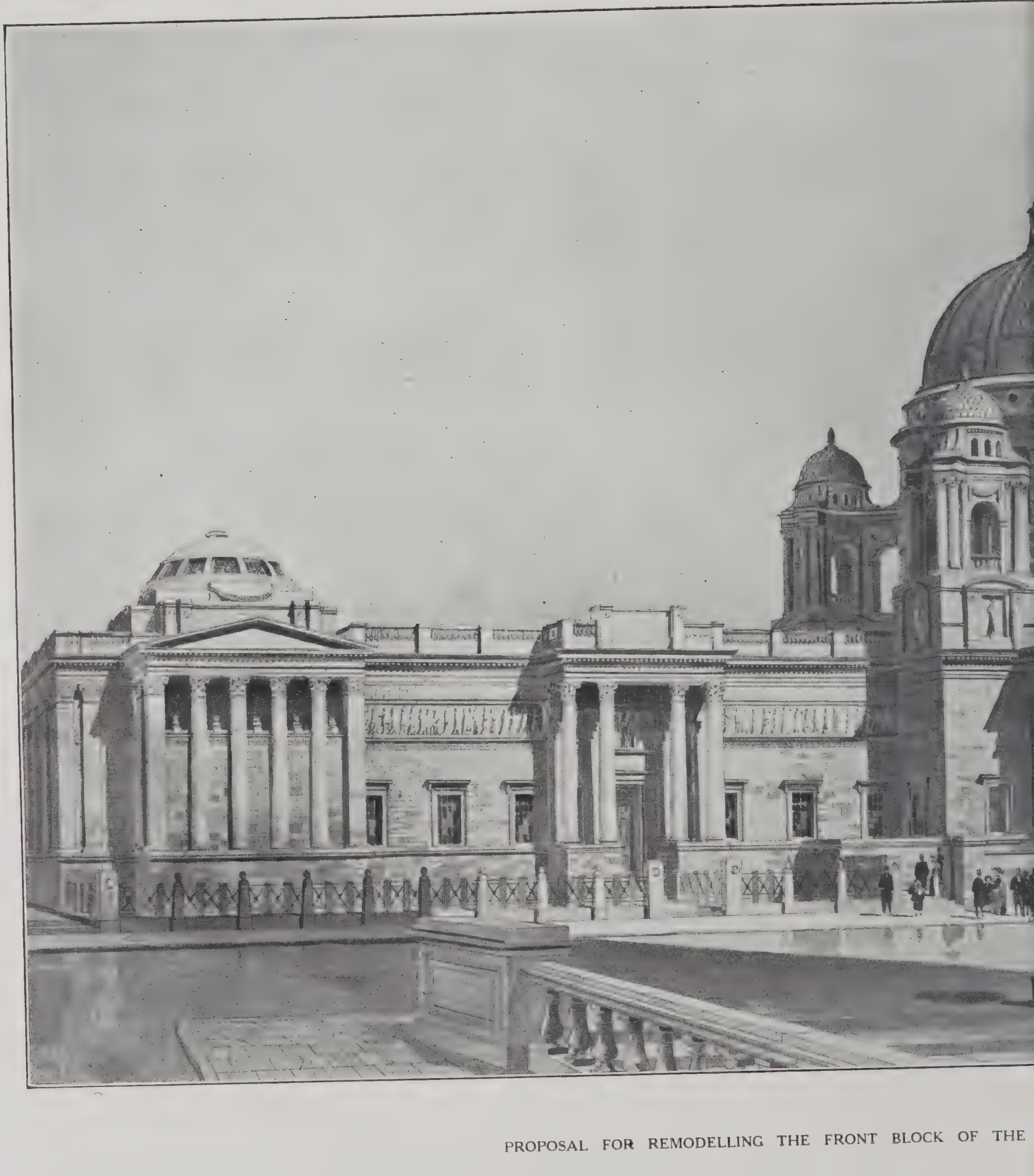

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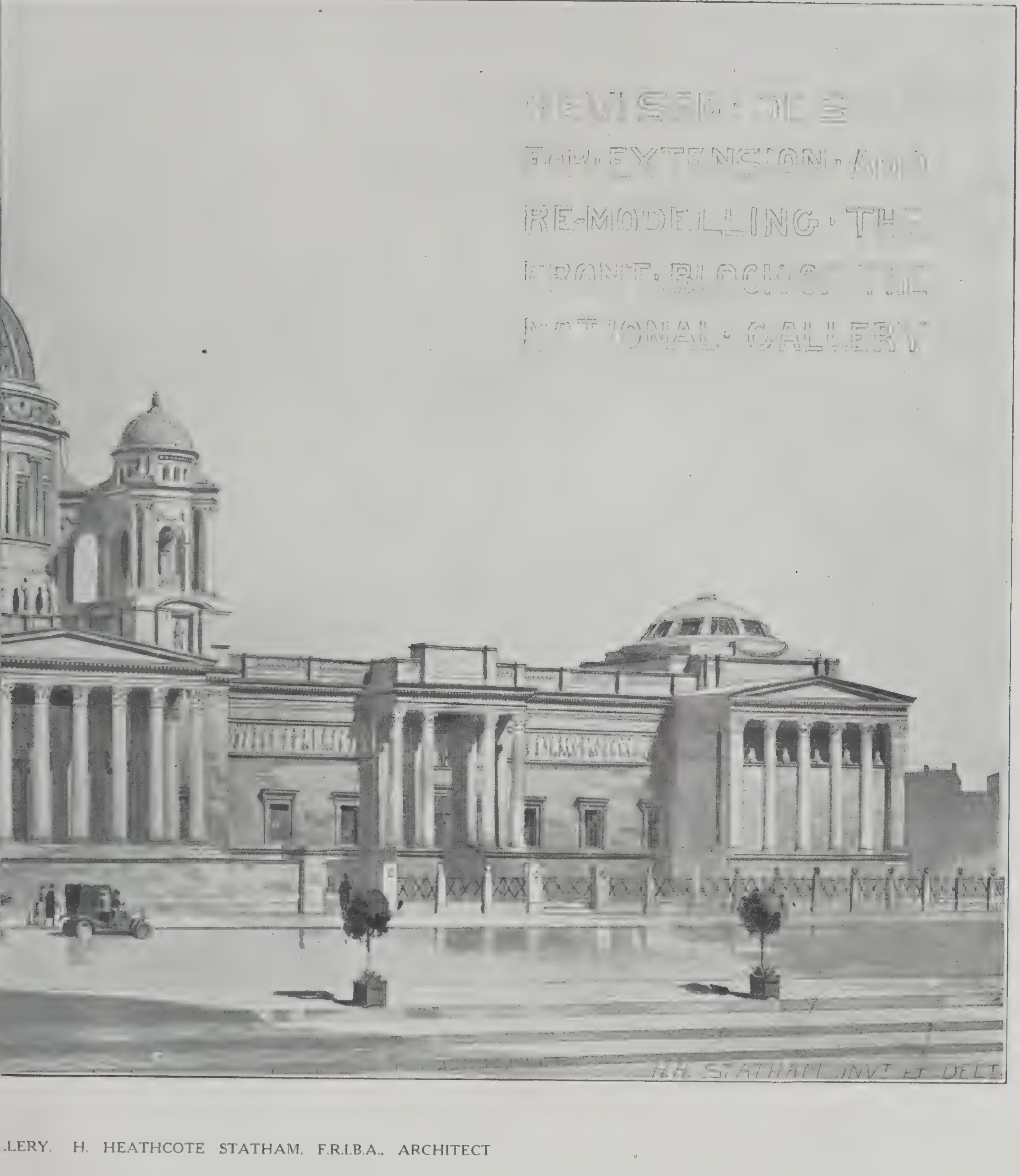

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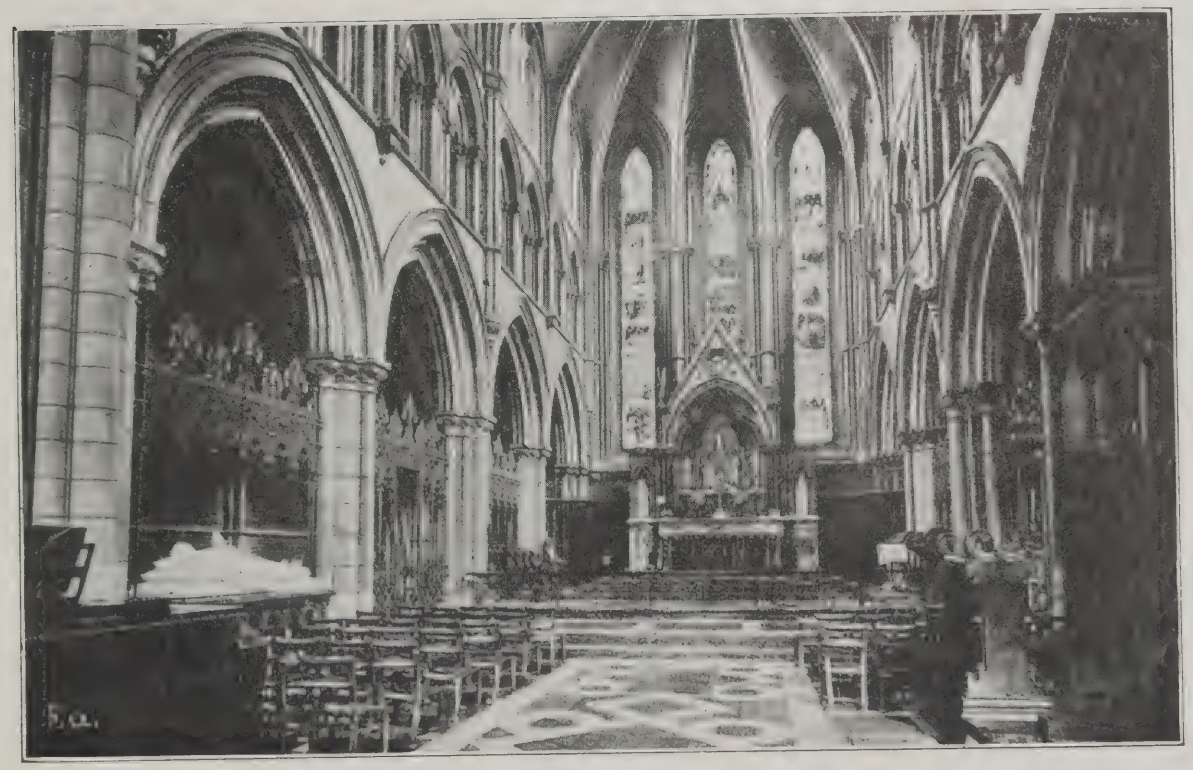
THE ARCHITECTS' & BUILDERS' JOURNAL

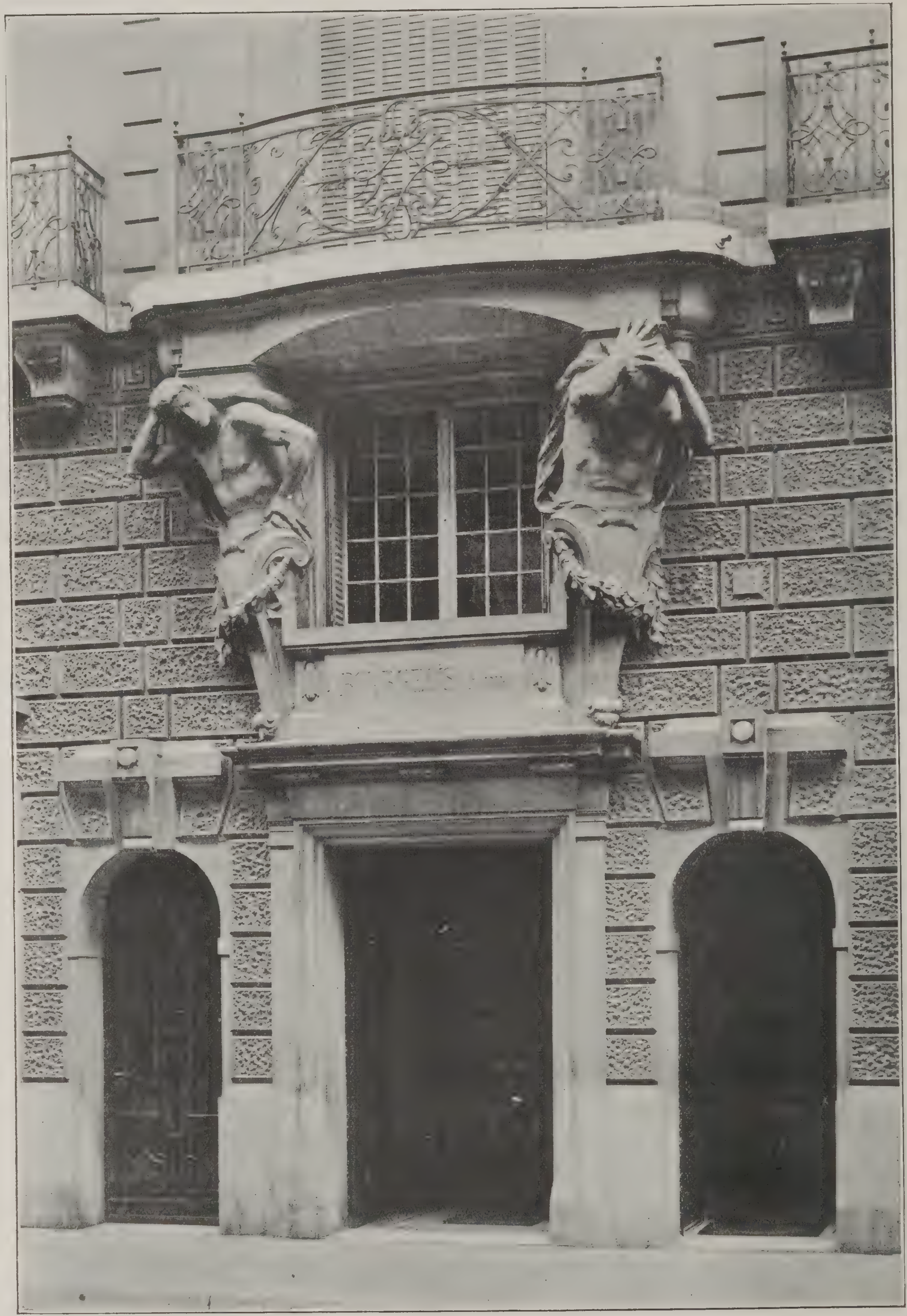
WEDNESDAY,
JULY 13th, 1910.

Volume XXXII. No. 806.



Edinburgh Cathedral, it has been said, "is undoubtedly one of the most beautiful of all Scott's designs, and shows him at his best." It is the result of a competition opened in 1873. The date of this issue coinciding with the birthday of Scott, a portrait of the architect is given on page 31.

ST. MARY'S CATHEDRAL, EDINBURGH: THE CHOIR. THE LATE SIR GILBERT SCOTT, R.A., ARCHITECT.



A thoroughly representative example of modern French work, noteworthy more especially for the sculptured figures supporting the balcony at first-floor level. Caryatid treatments are common enough, but more often than not the figures are not disposed so as to give an appearance of strength—they seem to be crushed down by the mass above, or in consequence of it. In this example the result is quite the reverse, and, as such, merits attention. The whole is in stone.

ENTRANCE, NO. 18, RUE CROIX DES PETITS-CHAMPS, PARIS. M. BRÉFFENDILLE, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

JULY 13th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 806.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Criticism: Professional and Amateur.

THE American Institute of Architects recently published, in a schedule of articles defining what they regarded as "unprofessional conduct," a notification to the effect that no member of their Institute should criticise the work of any other member, except openly under his own signature, under pain of being branded with the charge of having acted in an unprofessional manner. This is the first time, to our knowledge, that any such proposition has been made by an architectural body; but it seems to have attracted some attention in England, and in case of any such idea being seriously canvassed on this side of the water, it may be well to point out what would be the consequences of the adoption of any such position by the Institute of Architects; consequences which perhaps those who discuss it (for we have reason to believe that it is being discussed) do not altogether realise.

Whether any special reason had occurred for the American Institute issuing that ukase we do not know; there may have been such. But it should be realised that the effect in the United States would be very different from what it would be here. America issues a very good monthly architectural magazine, the "Architectural Record," in which the articles are signed; that is a system which can be very well carried out in a monthly magazine, which consists of a few articles on the broader aspects of architecture; though we have some doubts whether it is, even there, the best system, for this reason: An anonymous article is judged on its internal merits, and is allowed weight accordingly; it is a good and well-reasoned or well-informed article, or it is not, and it is read on its merits; but a signed article is read or neglected according to the reader's respect for or prejudice against the writer of it. The "Quarterly Review" has hardly improved its position or its influence by recently taking largely to signed articles. The position is not such a strong one.

But whatever may be done with a monthly review or magazine, it is practically impossible to run a weekly paper, made up of all kinds of articles, on a basis of signatures. And in regard to weekly papers, the ukase of the American Institute of Architects would have a very different effect from that which would follow on any similar prohibition issued from No. 9. Conduit Street. The American weekly papers are largely made up of reprints of papers read at meetings in the States or in England; the anonymous editorial portions consist usually of only a few short notes on current events, which might be written by any journalist who had some acquaintance with the architectural world. The English weekly papers often contain long articles on important architectural subjects which could not possibly be treated except by professional architects, having special artistic or technical knowledge. And that is why the English architectural Press, taken all round, is, we believe, the best in the world. It is written for the most part by people with special knowledge. An editor of long experience used frequently to receive applications from professional journalists to be accepted as contributors, referring to the papers they wrote for, etc. His reply was always, in effect, "I have no use for journalists; this is a paper written by architects for architects; I can take no article on an architectural subject except from an architect." Surely this is the right position. Journalism, which means the power of collecting information and putting it, *extempore,* into readable and interesting form, is a special talent by no means to be despised in its own proper sphere; but when it comes to dealing critically with such a subject as architecture, journalism only means making readable sentences on things the writer knows nothing about; a little happily acquired phraseology serving perhaps to give a varnish of apparent acquaintance with the subject. We can hardly think that is the way in which architecture, or the works of architects, ought to be treated.

As things at present stand in England, an adoption of the American Institute theory in the matter would mean (if the principle were loyally acted upon) that four Fellows of the Institute, three of them members of the Council, would either have to resign from the Institute or to give up their connection with as many architectural journals. In the latter case, the result would be that architectural criticism in the professional journals would be reduced to the level of the architectural criticism of the daily newspaper. Does any architect seriously think that would be an advantage to the profession? We may add that we do not believe there is any precedent for such a view in connection with other subjects. The two leading engineering papers are, if we mistake not, edited by members of the Institution of Civil Engineers. The literary reviews in the "Athenæum" are written by men who are themselves authors, and we have never heard that the Society of Authors have issued any *caveat* against its members reviewing each other's books. And then it must be remembered that there is not only the case of hostile, but also that of friendly criticism, to be considered. The American Institute ukase was obviously directed against the case of a professional architect writing anonymously a hostile criticism of a brother architect. But criticisms (thank goodness!) are not all hostile; there is such a thing as appreciative—even enthusiastic—criticism. And is it not far pleasanter and more delicate for both parties, the praiser and the praised, that such appreciation should be anonymous? On this point we will tell a little story, which is true, except the assumed names. Brown, who was a critical writer on art, in a signed article in a well-known magazine, bestowed great praise on a picture at the Academy by Robinson. He did not know Robinson; but a mutual friend, Jones, the sculptor, told him Robinson was much pleased, and was going to write to thank him. "Oh," said Brown, "I hope he will not do that; I only said what I thought was the truth." A month later Jones again met Brown, and said: "Robinson was speaking of you yesterday; he says he really *must* write to you." Robinson never did write; and the moral of the anecdote is, that an artist may be very much pleased at a favourable notice of his work, but that he may feel embarrassed by a sense of personal obligation if the article is signed; and that the situation is much pleasanter for him if he does not know (or need or not be supposed to know) to whom he is indebted. It then becomes not a personal but an impersonal tribute.

The line to be drawn, and to be drawn rigidly, is that no one should ever write anonymously, or (if an editor) allow others to write anonymously on any subject in which his own interests are concerned. To do so is simply to throw dust in the eyes of the public, which reads the article as an expression of independent opinion. Time was when one of the foremost architects of the day, in the middle of last century, frequently wrote the anonymous notices of his own works, and was allowed to do so by a too friendly editor. It is to be hoped we have got beyond that now.

Nor, again, should any correspondent be allowed to write anonymous letters to a paper on a matter in which he is personally concerned. Disappointed candidates in a competition, for instance, who think the wrong award has been made, sometimes write letters showing where the selected candidate has not complied with the instructions, etc.; well, if they have a good case let them write, but let them put their names to their letters; they have no right to make believe that they are disinterested critics of the competition. No one who is a competitor, or is professionally connected with a competitor, ought to write, or ought to be allowed to write, a criticism of a competition exhibition. And an anonymous professional critic who has a full sense of his responsibility to the public would, in reviewing a collection of designs (such as the Academy Architectural Room) omit reference to his own, save perhaps as merely recording its presence; a matter in which the writer of these words has at all events practised what he preaches.

There is a great deal, certainly, to be careful about in the carrying out of anonymous criticism by professional architects. But if it is honestly and conscientiously done, no other set of people are so competent to do it; and to put an end to it, and throw architectural criticism into the hands of the laity, would be a *reductio ad absurdum.*

Chinese and Japanese Paintings: British Museum.

THE large collection of Chinese and Japanese paintings now on view at the British Museum is no doubt, in an historical sense, a very valuable and interesting one, but in the Press notices which have appeared, and in the essay and notes in the printed catalogue, it is spoken of with a solemnity and importance which are very much exaggerated. In the way of painting of birds and flowers, there is, as everyone acquainted with Chinese and Japanese art would expect, some most beautiful work. The seventeenth-century studies of flowers (No. 90), for instance, are exquisite; so, in a much larger and grander fashion, is the "Lotuses and White Heron" (57); the large leaves of the plants, in their varying outlines and colours, may be said to be in a grand style. Among other fine things we noted among the Chinese paintings are the "Eagle attacking a bear" (58), which has a wonderful realism and vigour of action, and the cock in the picture of "Fowls, bamboos," etc. (62). But when it comes to figures and landscape, to pretend that these things are to be regarded as seriously as we regard Italian, French, and English painting is absurd, and to tell the innocent visitor so is misleading his mind. Look at the Chinese painting called "The Beginning of Winter" (36); did anyone ever see mountains like those represented here? Look at "A Waterfall" (102); is that painting a waterfall? Or come to figures; look at "Kwannon the unsurpassable" (137); look at the way the feet and hands are drawn—or not drawn. We are accustomed to think that the adequate drawing of feet and hands is one of the tests of a figure-painter; why are we to accept absurd drawing because the artist is a Japanese? It is really necessary to say seriously that the power to draw the figure correctly and learnedly belongs to Western artists, and is an important element in painting which the Chinese and Japanese do not possess; they produce grotesques, some of them very clever as grotesques, some of them merely hideous, like the nightmare figures in the set of drawings of "The Haunted House," which are really only like the kind of things children draw when they want to make something "very horrid." That one should be asked to go and look at such things seriously and call them "art," and be told that they are in their way quite as valuable as Western art, is as much as to ask us to admit that beauty and accuracy of drawing count for nothing in painting. People who would maintain such a paradox must, we should think, have gone a little out of their minds.

New Peals of Bells.

TWO peals of bells of some interest to the world have just been rung for the first time; that at Truro Cathedral and that in the rebuilt Venice Campanile. Truro has a peal of ten bells which were dedicated and rung at the same time as the opening of the new western towers. In a paper of the same date we read of the first ringing of the bells in the rebuilt Campanile at Venice, which appears to have been an occasion of considerable public excitement. The number of bells is not given. There is no mention of either peal being used for carillons, which is just as well. The carillon is a system which can only be rendered effective with a large number of bells, and it is at its best a rather unsatisfactory form of music, seldom found quite in tune; the full tone of the bells is not got out of them, as they cannot be swung, but must be fixed and struck by a hammer on the outside. The wild clang of a swung peal of bells, though it is not exactly music, is a fine effect, unlike anything else in the world of sound; and on the whole the best use to be made of bells is to swing them in peal-ringing. The perpetual repetition of a fixed carillon tune every hour or half-hour, moreover, is apt to become a nuisance, while the simpler tunes or scale-passages of the swinging peal can be constantly varied.

The Borough Council and the Poets.

A BOROUGH COUNCIL always feels itself fully competent to dispose offhand of any mere question of art. The Borough Council of Swansea has as lightly assumed the functions of the literary critic. According to a Swansea newspaper, the Housing Committee of the Council recommended that certain single tenements should be known as "Shelley Crescent"; and certain double tenements as "Bryon [*sic*] Crescent"; whereupon up rose a member demanding "who was responsible for choosing the names of such neurotic poets as Bryon and Shelley." We interrupt him with the suggestion that probably some wild Welsh compositor is responsible for "Bryon." "What," he asked warmly, "had those names to do with the tenements at all? There were more sensible names to be found, and he suggested that if possible they should choose names having some connection with Wales." Alderman Morris said the committee thought that as other streets had been named after great men in literature, the names chosen would be suitable, whereupon it was retorted: "They are the two most lawless poets we have in England, and the names may have the tendency to make the people more lawless." The council had the grace to laugh; but the committee's proposal was referred back, so that "Bryon" and Shelley, by their "lawlessness," have missed their supreme moment of immortality in Wales; but is the refusal to attach their names to cheap tenements a climax of poetic justice? It does seem a ridiculous proposal, when one comes to think of it, to label the most prosaic of buildings with the names of Byron and Shelley; to whom, therefore, the indignant councillor was doing a greater service than he was perhaps aware.

NOTES AND NEWS.

Bournemouth's Centenary.

The celebration of the centenary of Bournemouth takes its date from the building of a solitary house by Mr. Tregonwell; "and around this house, above, below, and beyond, other people built and planned streets and gardens, so that now there is a population of 80,000, and the county borough claims to be the handsomest and best laid out resort on the British coast." For an unconcerted essay in town-planning, Bournemouth is pretty well; and its houses, tiled and gabled, and showing a wonderful variety of bargeboards, many of which are really beautiful in design, are in some cases quite architectural. But architects attracted to the resort by the celebrations will turn with relief towards the neighbouring quaint little town of Christchurch, where the venerable priory and the adjacent ancient villa will well reward them for the tedium of the journey and the turmoil of the "fêtes."

A Germ Theory of Stone Decay.

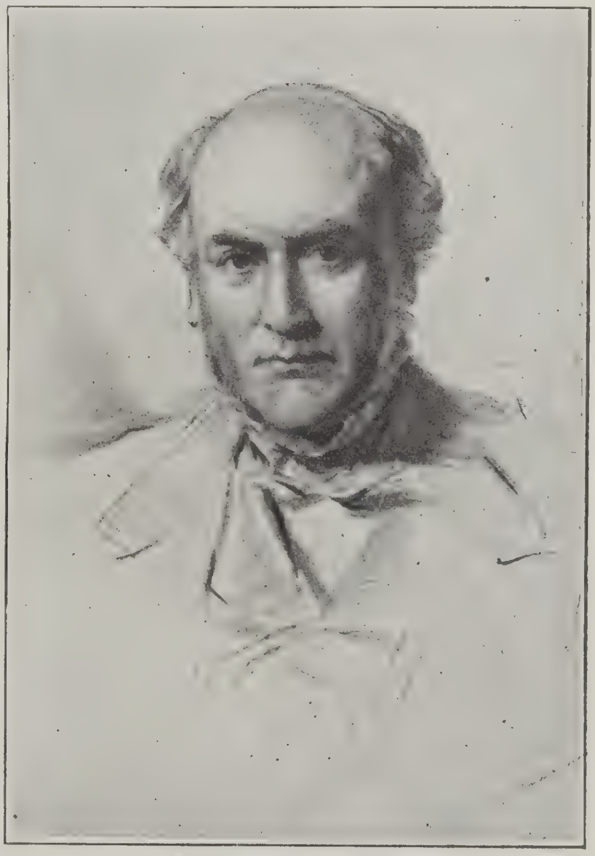
A short time back we chronicled a curious theory with respect to the "diseases" of metals. A germ theory of stone decay is now advanced. At the annual conference of the Museum Association, held at York last Wednesday, the president (Dr. Tempest Anderson) contributed a paper in which he said that he had taken stone from some of the eroded buildings in York and cultivated the germs which it contained, and which he believed were the cause of the erosion. He believed the process was similar to that caused by micro-organisms in the decaying of wood, and that sulphate of copper dressings would enable the stone to resist the attacks. Mr. Sheppard (Hull) and Mr. Platnauer (York) declined to accept the germ theory, and contended that the erosion was due to the action of the carbonic acid gas and sulphurous hydrates present in the atmosphere. Dr. Bather, F.R.S. (British Museum), was inclined to accept the theory that the erosion was due to a bacillus, as they were daily finding that microbes were responsible for processes hitherto believed to be purely due to physical causes. He agreed that sulphate of copper was an excellent germicide and preventive agency.

The King and St. Nicholas, Deptford.

The King has forwarded a donation of 20 guineas towards the fund which is being raised for the restoration of the historic Church of St. Nicholas, Deptford. It is estimated that £5,000 will be required to render the church safe for Divine Service. St. Nicholas is the mother church of the parish. It is an ancient foundation, and, in the twelfth century, the advowson was granted by the Countess Juliana de Vere to the Premonstratensians, or White Canons. In 1630 a new north aisle was added, and the chancel was enlarged. The nave was rebuilt in 1697. In 1795 a writer in the "Gentleman's Magazine" thus described it: "The church of St. Nicholas, Deptford, in its present state, has a strange disjointed exterior. The tower is evidently of very great age. The earth round it appears to have been raised, as there is a descent of several steps, contrary to the usual manner of entrance into such places. Nothing, surely, can exceed the monstrous incongruity of the church and its tower—stone and brick, Gothic, and a defiance of every order, jumbled together. Yet the person employed in rebuilding the church must have been a man of taste, as the inside plainly demonstrates, for that is elegant. The chancel is small, and railed off from the church; it is richly ornamented with carving of foliage, figures, etc. (the work of a parish worthy, Grinling Gibbons), and two paintings of Moses and Aaron. Over the Commandments there is an oval painted glass representing the Adoration of the Infant Jesus, that has considerable merit." Whether or not Grinling Gibbons was born in Deptford, the son of a Dutchman settled there, it appears to be firmly believed that Evelyn, another Deptford worthy, dragged him from obscurity there, and introduced him to the King. The church was repaired in 1876, but in 1884 Mr. Thomas Dinwiddy reported the whole fabric as being in a dilapidated condition. The building, which measures 74ft. by 62ft., with an extreme length, including the chancel, of 86ft., is a very plain brick structure. Christopher Marlowe is buried in the graveyard, and a painting of Queen Anne by Sir Godfrey Kneller hangs in the chancel. But what may more have influenced the King's generous donation is the fact that its graveyard holds the remains of many fine old sailors.

Holland House.

For some time past there have been rumours to the effect that the whole of the historic estate on which stands Holland House is to fall into the hands of the builder. It is now announced, however, that the estate is not in any immediate danger. It is only a portion of it that is offered for sale, and it constitutes a part advertised for sale a few years back, but afterwards withdrawn. The frontage, which is in Kensington Road, is about 500ft. long, and it is not proposed to cut off more than 100ft. of the width. The main portion of the estate, therefore, will remain untouched, and there seems to be no immediate danger of realising the dismal foreboding of Macaulay, who predicted "the time when a few old men, the last survivors of our generation, will in vain seek amidst new streets and squares and railway stations for the site of that dwelling which was the favourite resort of wits and beauties, of painters and poets, of scholars, philosophers, and statesmen." Holland House, originally built in 1607, did not become really celebrated till the reign of George I., when the widow of its owner, the Earl of Holland and Warwick, married Addison, who died there. It afterwards belonged to the family of Fox, Lord Holland, first as tenants and afterwards as owners of the freehold. An interesting account of Holland House, from the pen of Mr. J. M. W. Halley, with fine photographic views of the building, and a reproduction of John Thorpe's plan, appeared in the "Architectural Review" of April last. Some of the internal staircasing and panelling are "not very wisely" attributed to Inigo Jones, who, however, designed some gate piers which are illustrated in the same article.



SIR GILBERT SCOTT, R.A.

After the drawing by Sir George Richmond, R.A. The portrait is reproduced *apropos* of the date of this issue coinciding with the architect's birthday. He was born July 13th, 1811; elected F.R.I.B.A. in 1849. A.R.A in 1855, R.A. in 1861, knighted in 1871, and died March 19th, 1878.

B

AN ARCHITECT'S RECOLLECTIONS.

BY H. H. STATHAM, F.R.I.B.A.

[*We are happy to have succeeded (after considerable difficulty) in persuading Mr. Statham to set down a few reminiscences of his long connection with the profession, and to show some of his drawings.*]

It is at the special request of the proprietors of this Journal that I have agreed to have my portrait sketched by Mr. Paxton, and to give some account of myself—a kind of personal demonstration rather foreign to my usual predilections. But the management seemed to think their readers would like to know something about me; and if this is a mistake, and they are bored—which may be only too probable—they must put the saddle on the right horse, and regard me as writing under a kind of friendly compulsion.

As all the facts would have to be furnished by myself, it is simpler to write in the first person, rather than make a pretence of the article being written by someone else.

I received my professional education in the office of the late George Williams, of Liverpool, who was a pupil, and I believe rather a favourite one, of Decimus Burton, whom I call therefore my architectural grandfather. I remember Burton calling at the office on a visit to his old pupil; a tall, fine-looking old gentleman, with a very military air about him. He was, I should think, one of the best representatives of the early nineteenth-century school of English architects, who from the artistic point of view would perhaps be thought little of now, but who had some high merits of their own, including thoroughness of practical knowledge and a very high standard of professional conduct. (To be sure, the field of practical knowledge was more easily covered in those days than it is now.) My principal, Mr. Williams, was a follower in the steps of Burton. Before commencing practice, he had toured in Greece with a sketch-book, at a time when such touring was both less common and less easy than now, and drawn the details of Greek monuments *in situ*. His sketches were exceedingly neat and clean in style, and scrupulously accurate.

In the office, Classic and Renaissance taste ruled. As a pupil, I was set down at once to copy the Parthenon Order out of Normand, and subsequently that of the monument of Lysicrates (I have the drawings still), on which latter I worked so conscientiously as to elicit from my master the complimentary remark that I "had rivalled the engraver," but with the result also of bringing on a temporary blurring of the eyesight which compelled me, on medical advice, to knock off all work for six weeks. However, no permanent injury resulted; I have been short-sighted always, but my sight is as strong now as it ever was.

Gothic was turned out of the office now and then, when a church or a chapel came in hand, but I was conscious even then that it was very weak Gothic. My own sympathies were with Gothic at a very early date, and Bowman and Crowther's "Churches of the Middle Ages" was a kind of Bible to me; Ewerby and Heckington were as sacred shrines. Now that the Gothic revival has departed, it must be difficult for students of this day to understand at all or to realise what was the glamour of Gothic architecture to young enthusiasts in the sixties of last century.

If the office could hardly be called an artistic one, it was at least a practical one, and I was indebted to my then principal for a very good grounding in the practical side of building and constructional detail. The fact that we had the laying out and the care of one or two public parks led to my acquiring a knowledge of the section and structure of roads. There was a good deal of surveying, which I always enjoyed. I have never had any sympathy with the æsthetic architects who despise surveying as a pursuit beneath their notice. It is a valuable training in habits of care and accuracy, and an architect who himself surveys the site for a country house knows much more about the land than he can know otherwise. And there are few pleasanter open-air occupations than country surveying in fine weather. To be sure, when a survey was wanted immediately, irrespective of any such saving clause as "God willing and weather permitting," chaining for a whole morning in two or three inches of snow was not quite so enjoyable.

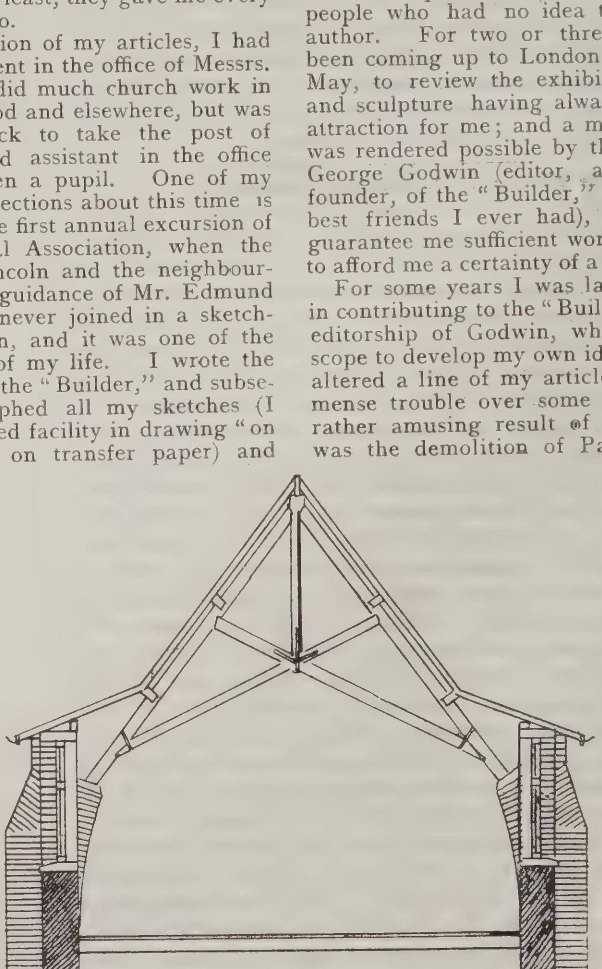
On entering on my articles I became at the same time a student member of the Liverpool Architectural Society, at that time a very active and energetic body, so much so that in some public print it was held up as an example to the Institute. Some of the best architectural papers I have ever listened to were read there (by the ordinary members, not by distinguished persons invited from outside); the attendances were full, and the discussions very interesting. For some years I acted as Hon. Secretary to the Society, and worked hard at my post, to the satisfaction, I believe, of the council and members; at least, they gave me every reason to think so.

On the expiration of my articles, I had a short engagement in the office of Messrs. Hay, who then did much church work in the neighbourhood and elsewhere, but was soon invited back to take the post of draughtsman and assistant in the office where I had been a pupil. One of my pleasantest recollections about this time is taking part in the first annual excursion of the Architectural Association, when the party visited Lincoln and the neighbourhood, under the guidance of Mr. Edmund Sharpe. I had never joined in a sketching raid till then, and it was one of the happiest weeks of my life. I wrote the account of it for the "Builder," and subsequently lithographed all my sketches (I had early acquired facility in drawing "on stone," that is, on transfer paper) and made them the illustrations to a paper on the subject at the Liverpool Architectural Society, copies being distributed to the meeting—one of the best methods of illustrating a lecture, which I have often employed since.

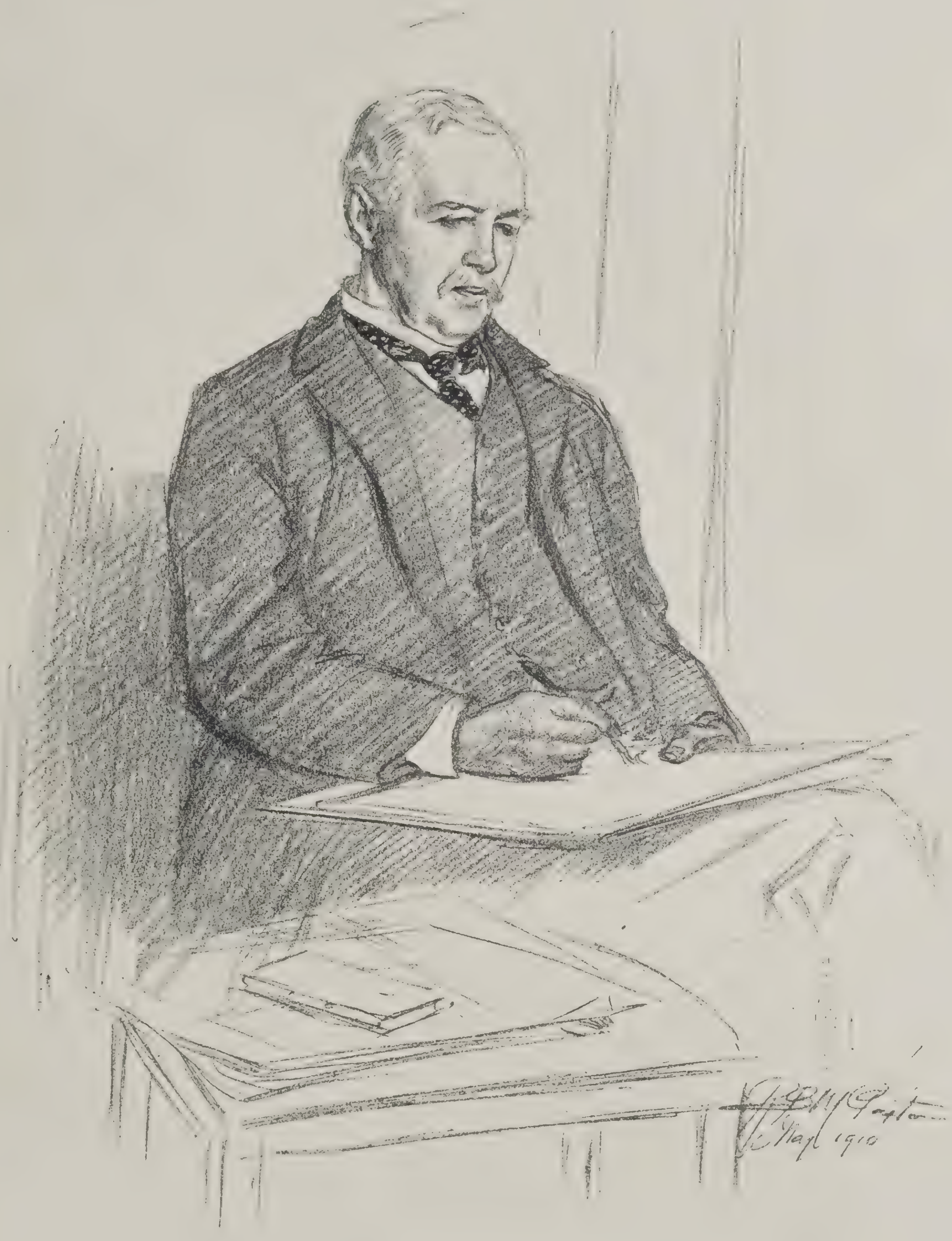
I can only remember one building I carried out in Liverpool after the retirement from practice of my principal; this was a big brick school round three sides of a quadrangle, designed a good deal under the influence of Street, in which I tried a new sectional treatment of roofing, something like the arangement shown in the accompanying design (below) the buttresses being arched inward to meet the thrust of the principals. It looked bold and effective, at all events; whether the building is still in existence, I know not. I have another interesting recollection connected with that building, that my excellent foreman of bricklayers, who had just been occupying the same function on a building by one of the most eminent architects of the day (now dead), told one of the committee that he thought their architect a much greater one than Mr. ——, on whose building he had been previously employed. The testimony of a good workman is worth having, and I think of it with a certain amusement when I find people who will not believe I am an architect because I have been an editor.

But before this the call of London was upon me. I felt that I had some abilities which would find more scope in London. I had written various articles already for the "Builder"; one of them, "How John ye Son of Smith decorated ye House of ye Lord" (a little satire on the violent chromatic effects of some of the Gothic architects), had a great success, and has been quoted to me several times by people who had no idea that I was the author. For two or three years I had been coming up to London every year, in May, to review the exhibitions, painting and sculpture having always had a great attraction for me; and a move to London was rendered possible by the offer of Mr. George Godwin (editor, and practically founder, of the "Builder," and one of the best friends I ever had), that he would guarantee me sufficient work on his paper to afford me a certainty of a "living wage."

For some years I was largely occupied in contributing to the "Builder" under the editorship of Godwin, who left me free scope to develop my own ideas, and rarely altered a line of my articles. I took immense trouble over some of these. One rather amusing result of a week's work was the demolition of Parker's archæo-



PROPOSED SECTIONAL TREATMENT OF ROOFING DESIGN.
("An Architect's Recollections.")



HENRY HEATHCOTE STATHAM, F.R.I.B.A.

Sketched from life by our Special Artist.

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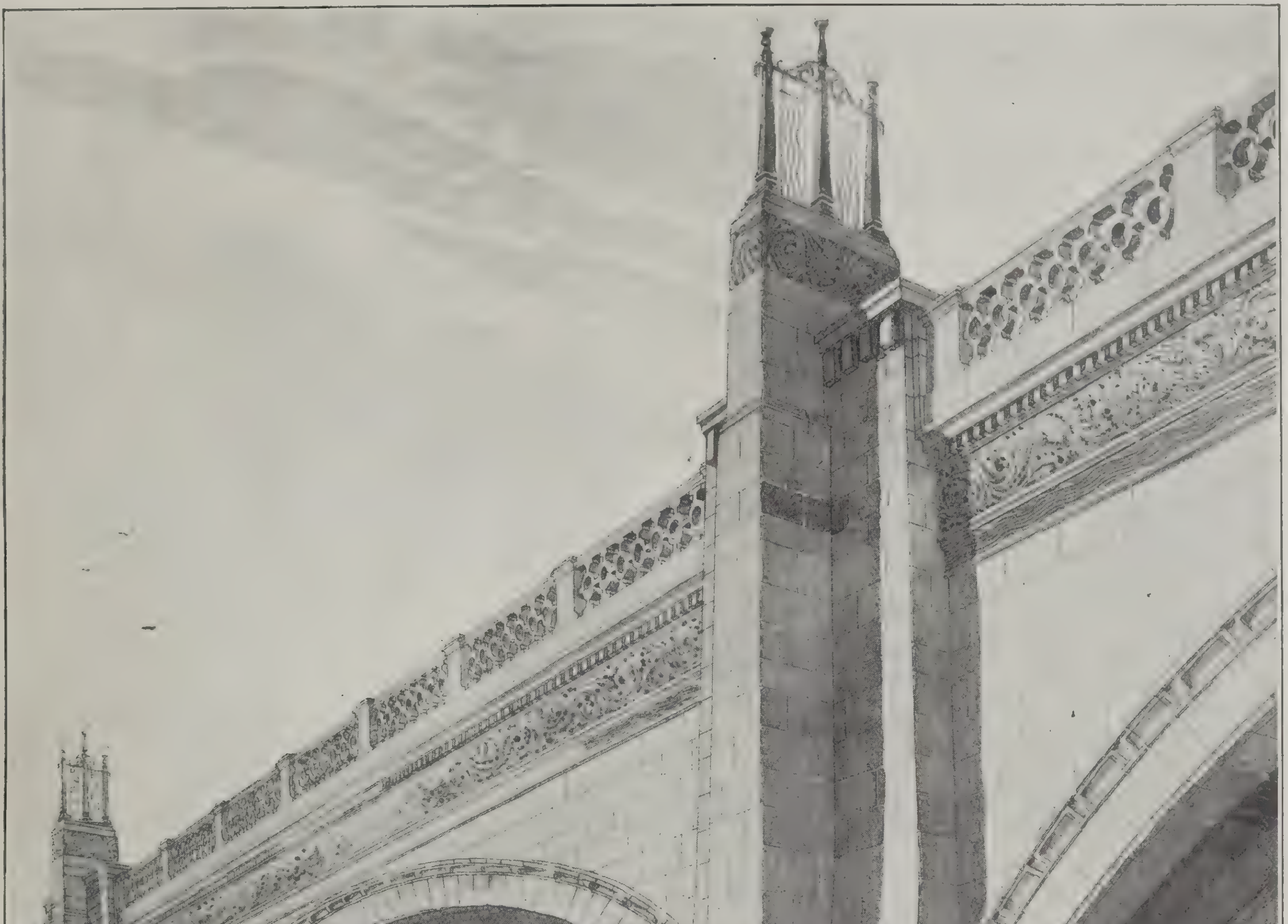
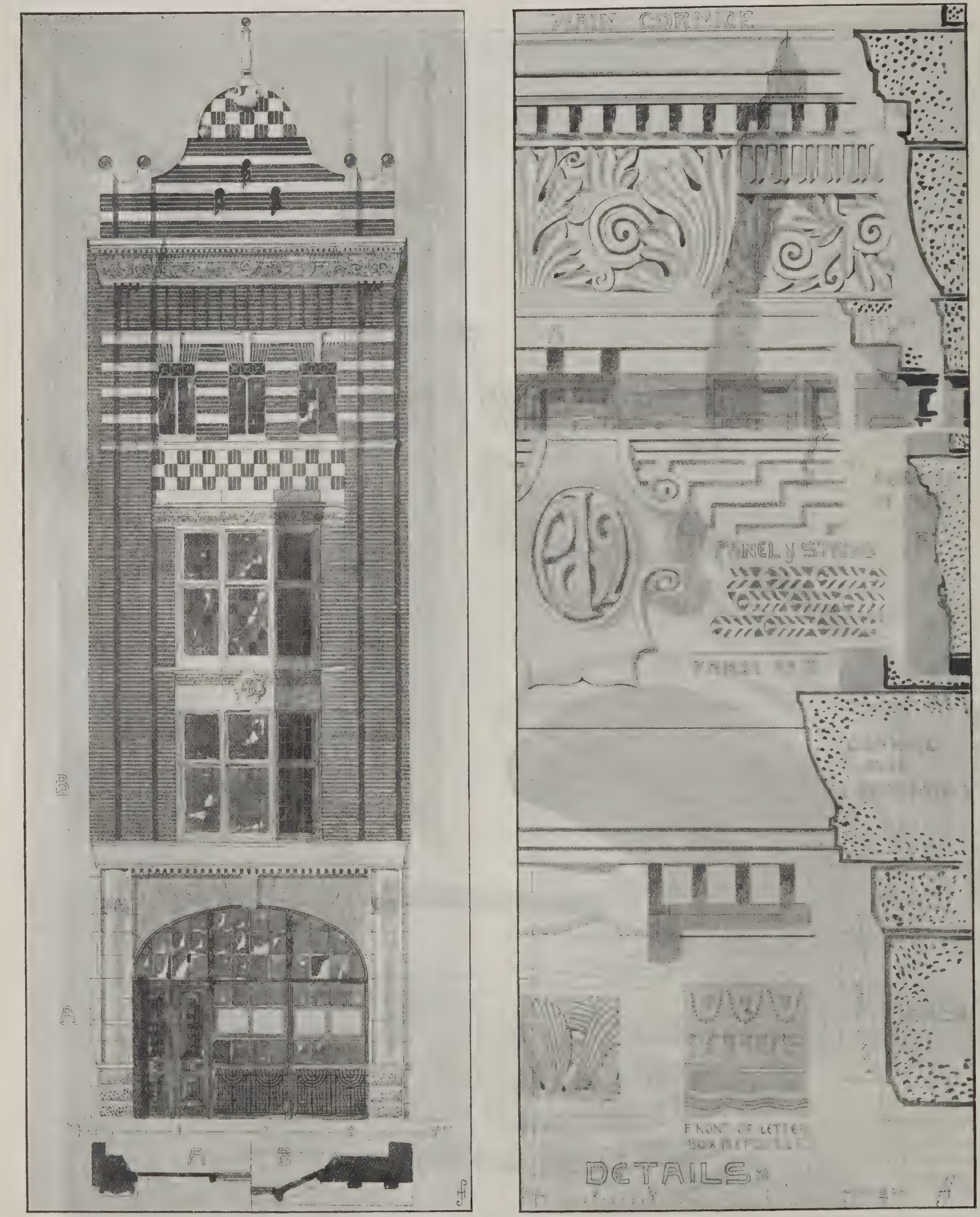


STUDY FOR A STONE BRIDGE. H. H. STATHAM, F.R.I.B.A., ARCHITECT.



AN OFFICE FRONT AND DETAILS, CATHERINE STREET, COVENT GARDEN.

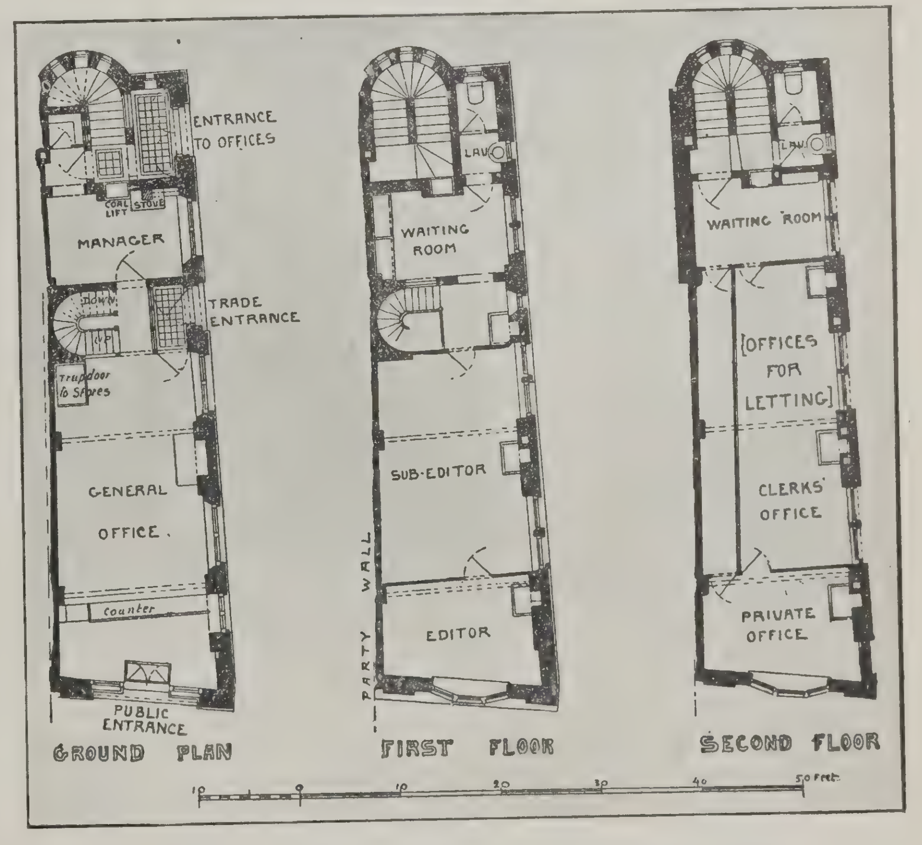
H. H. STATHAM, F.R.I.B.A., ARCHITECT.

logical theories on the Colosseum. Parker was the most dictatorial of archæologists, who collected a great many facts, but could not understand their bearing, and laid down the law in the most peremptory manner. I felt sure his theories were wrong, but could not go to Rome to test them on the spot; but I remembered the existence in the British Museum of the great set of drawings of the Colosseum made in the early part of last century by the French engineers, in which every stone was shown (except the portions not then laid bare). They were amply sufficient to show the absurdity of Parker's restorations. Calling on Godwin the week after, he said: "Well, you have brought Parker down on his knees! I never had such a humble letter from him in my life"; and, in fact, his letter, which I saw, practically gave up his case. The article was generally attributed, I believe, to a rival archæologist in Rome.

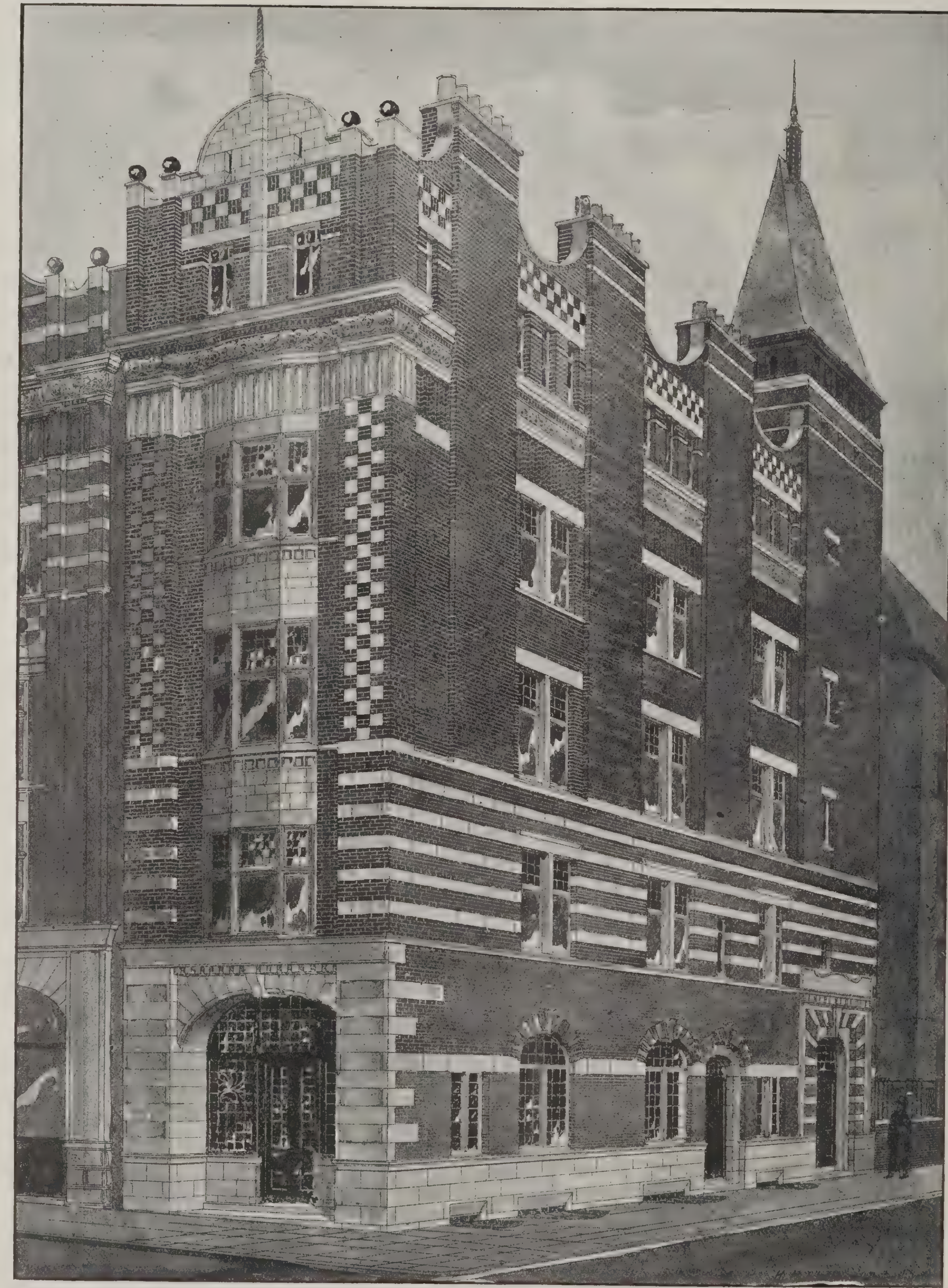
I took a good deal of part in the proceedings of the Architectural Association in those days. Among the papers I read there was one on "Plan as the basis of design" (a subject which, oddly enough, the Association have just done me the honour to ask me to treat of in the coming session), and one on "landscape and architecture," illustrated by about fifty large monochrome brush sketches on cartridge paper, which fairly lined the walls of the long narrow room on the ground floor at 9, Conduit Street, where the Association then had their meetings. Later I contributed some important papers to the Institute proceedings; one, as I remember, on the architectural treatment of bridges; and when the Government offices sites were under discussion, the Council did me the honour to invite me to treat the subject: a paper which led to my being asked to give evidence before the special Commission. The special point I maintained then, and still maintain, was that a great public building, like the War Office, ought not to have been allowed to be defined by the irregular lines of streets, but should have made its own *place* with a symmetrical plan; in other words, such a building should control the street lines, and not be controlled by them. At the Institute meeting I brought forward my own block plan for a War Office opposite to and axial with the Horse Guards, but on a much more extended plan; it received most flattering approval at the meeting, but was far too expensive a plan for an economical Government.

During some years of my earlier London life I had ceased to look out for any architectural practice, in great measure from a feeling of disbelief in modern architecture, as consisting only of imitating old work (which was pretty much the case then). It seemed a question whether the game was worth the candle, except for the making of money (for which I have never had any faculty). I think now it was a mistake, but that was my feeling at the time, and I had a good many other interests connected with Art and Literature. Having attended some of the Friday evening lectures at the Royal Institution, I felt that I should like to stand behind the green table and talk to that rather exceptional audience on something that interested me. Accordingly I wrote to Professor Tyndall, then all-powerful at the Institution, merely saying that I understood the subject of architecture pretty well, and should like to offer a lecture on it. He referred, I believe, to Fergusson, who reassured him, and I gave my first lecture there, on "The Logic of Architectural Design," using the system of handing round lithographed diagrams among the audience. There was a large and very attentive "assistance," and it was, I suppose, a success, as it was immediately followed by an engagement to give a series of afternoon lectures on the history of architecture. I twice afterwards had the honour of addressing a Friday evening audience; on "The Philosophy of Ornament," and on "The Metaphysical Basis of Music." For one person to have addressed that audience on three different subjects, and be received each time with attention, is, I fancy, a rather unusual event. My connection with the "Edinburgh Review" was another source of interest. It began by an offer to write an article on Wagner's operas, none of which had then been heard in London, but I had all the scores. This article was the beginning of a life-long friendship with Mr. Henry Reeve, Clerk of the Privy Council, and for half a century editor of the "Edinburgh Review," and many were the articles I contributed after that. Among those connected with my own profession were one on "St. Sophia and Byzantine Building," one on "Formal and Landscape Gardening," and one on "London Architecture in the Nineteenth Century"; the last-named had the amusing result of bringing me a letter from an eminent architect asking why I had not noticed and quoted "this admirable article" in the "Builder." Another interest to me was the opportunity of giving organ recitals at the Albert Hall, which I did during the London season for several years, in the 'eighties. This was through the intervention of Mr. Godwin, who was a member of the Albert Hall Council. I told him if they wanted organ-playing there on Sundays I could furnish it, in return for leave to practise on the organ. He told the Council that if I said I could do it, he had no doubt I could, and no more diplomacy was necessary. It was one of my greatest enjoyments, but was a puzzle to my professional friends, one of whom asked me one day if it was any relation of mine who was playing at the Albert Hall. I said I had been playing there. "You?" he said, "was it you I was listening to all the time?" All this was not architecture, to be sure, nor was it the way to what is called "getting on in the world"; but I am inclined to accept "Punch's" moral to the fable of the Hare and the Tortoise, viz.: "What a dull time the tortoise had of it." My life has certainly not been dull, whatever other disadvantages it has had.

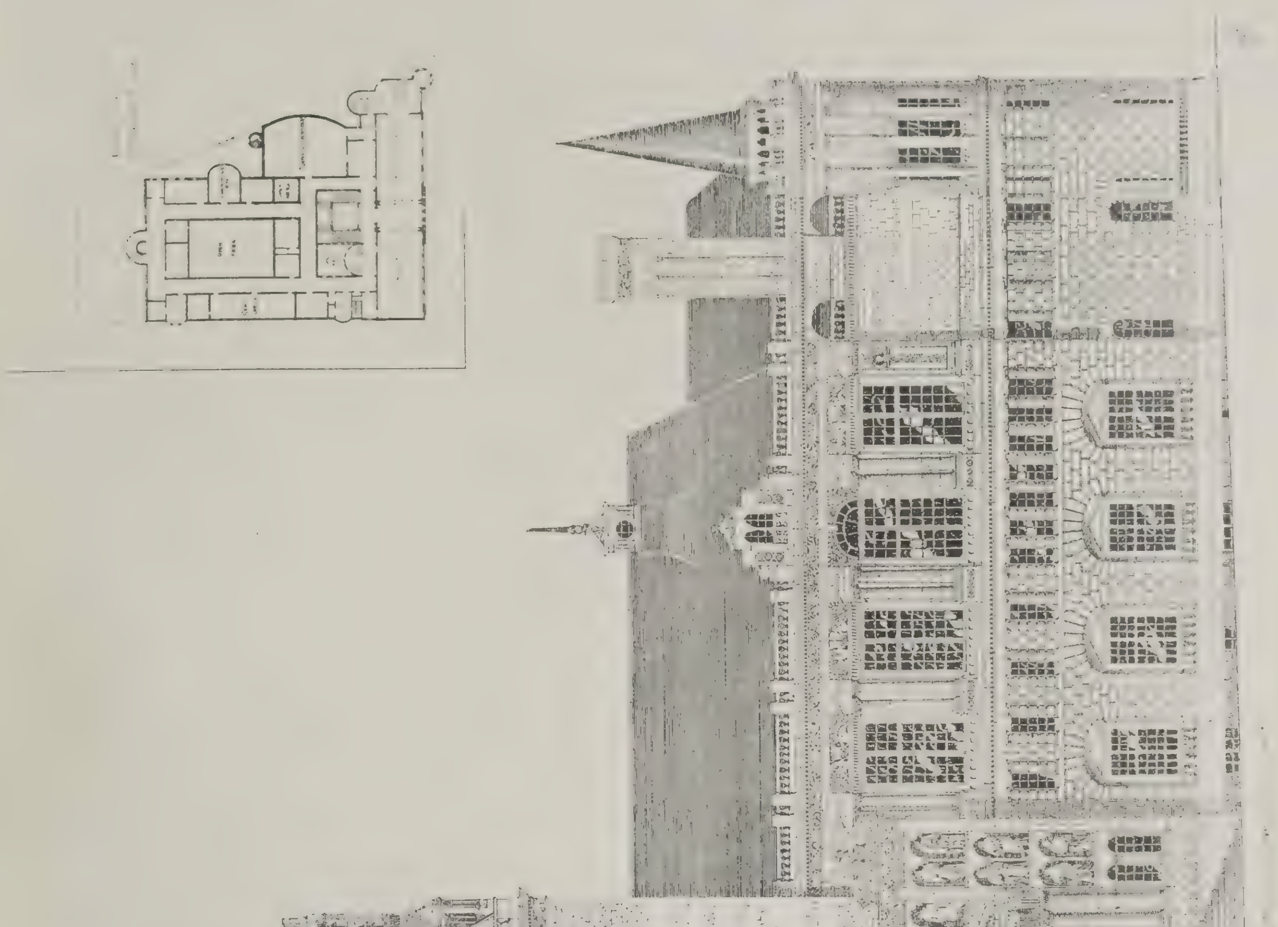
I had continued to carry out architectural work from time to time, when it came in my way, and, with my friend Mr. Slater, went in for the great competition for the Edinburgh Municipal buildings, where our design was selected among those for special consideration. I set a good deal of store by my treatment of the flank elevation, on the side of a steep hill; but the only drawing I have of it is a pencil one, which is too slight to reproduce well. But I have ventured to give another competition elevation, that for Sheffield Town Hall, which was hung on the line at the Royal Academy, and is one of the best elevation drawings I ever made. I was amused at the question asked me by an eminent provincial architect whom I found looking at it there: "It is a capital drawing," he said, "*who did it for you?*" The idea that one should have made one's Academy drawing onself did not seem to have occurred to him. The elevation and details of an office front in Catherine Street (pp. 36, 37) was also hung on the line at the Academy, and brought me perhaps the more practical testimony, that the Duke of Bedford's agent, on seeing the building, on each side of which there was a vacant plot, put it as a condition in the leases of those two sites that I should design the



OFFICE, CATHERINE STREET, COVENT GARDEN: PLANS.
H. H. STATHAM, F.R.I.B.A., ARCHITECT.



OFFICE PREMISES, YORK STREET, COVENT GARDEN. H. H. STATHAM, F.R.I.B.A., ARCHITECT.



COMPETITIVE DESIGN FOR SHEFFIELD TOWN HALL. H. H. STATHAM, F.R.I.B.A., ARCHITECT.

buildings erected on them, which was duly done, after great trouble with one of the lessees, who did everything he could to evade the condition. The building called "Offices in York Street" (p. 38) is the other one, and was planned to provide, on a very narrow site, for the offices of a well-known specialist journal, which had expressed an intention to take over the building; and I think as much has been got into the narrow space as could be. Unfortunately, their offer fell through; the building has been erected nearly as shown, but with only an empty floor plan for letting off. This drawing was also hung at the Academy.

In default of large works in actual practice, I have interested myself a good deal in suggestions for the improvement of certain classes of public work. The subject of bridges has especially interested me for a long time, as I think that where what are called architectural features (an unhappy expression) are introduced, it is generally done in a wrong way; columns are constantly introduced on the piers, where there is no vertical weight to carry, and it is not perceived that the extension of the pier beyond the line of the face of the arch is really of the nature of a buttress, and requires to be treated accordingly. In the "Study for a Stone Bridge," (p. 35) which was exhibited at the Academy, and in some other designs for bridges, I have shown the pier treated in a buttress fashion, but in what is really a new form. Another suggestion in this design is that the lamp standard, containing three lamps, need not necessarily be placed parallel with the parapet of a bridge; it can just as well, as shown here, be placed at right angles to the parapet, by which arrangement the outermost lamp throws a light on the arches of the bridge for the benefit of the river traffic. There is a good field for new architectural treatment in stone and granite bridges, which have hitherto in almost all cases been treated in an entirely conventional manner, and with architectural features bearing no logical relation to their position.

I have also interested myself for a long time back in the idea of suggesting a recasting of the front block of the National Gallery, which, in spite of Wilkins's refined detail (which no one appreciates more than I do), is as a whole manifestly unworthy of its splendid position, the central cupola especially being very poor. My first attempt, a perspective view and plan, which was exhibited at the Academy a good many years ago, showed a very lofty central dome, and was treated with a semicircular columned bay on each of the end pavilions. The dome, as I felt afterwards, was too large, but the design brought me a letter of appreciation from Professor Aitchison, and a very enthusiastic one from H. W. Brewer, so I conclude there must have been something in it. Subsequently I made another design, in the shape of an elevation showing a lower dome, but retaining the semicircular alcoves to the end pavilions; this was also exhibited at the Academy. I came to the conclusion afterwards that the semicircular alcoves were out of keeping with the general character of Wilkins's front, and made the design published in this issue (see Centre Plate).

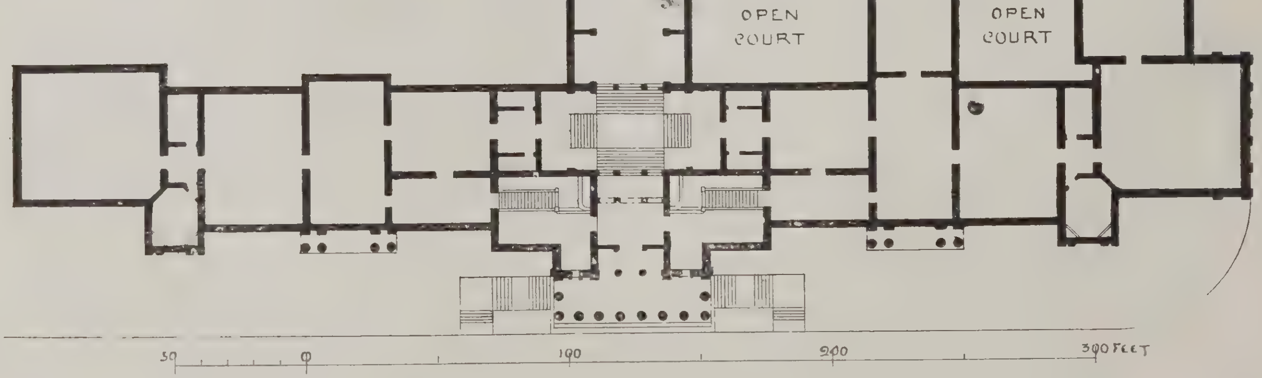
One of the weakest points in the building as at present existing is its absurd plan, the result of the tinkering of the Office of Works, whose architect (whoever he was), instead of making a clean sweep of the old staircases and planning a new grand staircase, left the old ones and squeezed in the present absurd arrangement by which, to get from the east to the west galleries, one has to go down one staircase and up another. A glance at the "plan as existing" (below) will sufficiently show this; nothing is axial, and space is wasted by two sets of staircases with no architectural relation to each other. My idea is that if the whole of the ground westward of the centre gallery could be acquired, a completely symmetrical set of galleries could be planned, and the front range could be made into sculpture galleries, with a long colonnaded vista, carrying the eye across the intervening space of the staircase hall. I think no one will deny that there is the making of a grand interior effect in this. I have never made any design for the treatment of Trafalgar Square; but my idea, of which the commencement is indicated in the drawing, is that the square should be arranged with two great flights of steps right across it, dividing it into three plateaux rising towards the building, with fountains on the centre plateau. This is only a rough general idea, however, and has not been worked out.

The history of my treatment by the Royal Academy in connection with this subject is rather amusing. My first design was at once rejected, but I did not remove it immediately, and on "varnishing day" found it hung in a central position. I never got any explanation of this mystery, but the fact that after it was published I received a complimentary letter on the design from one of their own body, and that a well-known architect mentioned it in an art paper as the most remarkable architectural exhibit of the year, furnishes a curious commentary on the way things are done in connection with the Academy architectural room. My second design, as noticed, was hung; the third, here published, was sent to the Academy last year and provisionally accepted, but crowded out. I had a little broader effect put on the drawing by a water-colour artist, and sent it in this year, when I was informed that it was a thing which the Council "cannot accept"; that is to say, having hung my two other designs, the third and certainly the best is not fit for their exhibition.

I must apologise to readers of the paper for having inflicted this egotistical screed upon them, only claiming their indulgence again on the ground that I have written under special request.

H. H. STATHAM.

PLAN AS EXISTING



PROPOSAL FOR REMODELLING THE FRONT BLOCK OF THE NATIONAL GALLERY. H. H. STATHAM, ARCHITECT.

(See Centre Plate.)

THE LEGAL EFFECT OF A SPECIFICATION.

By OUR LEGAL EDITOR.

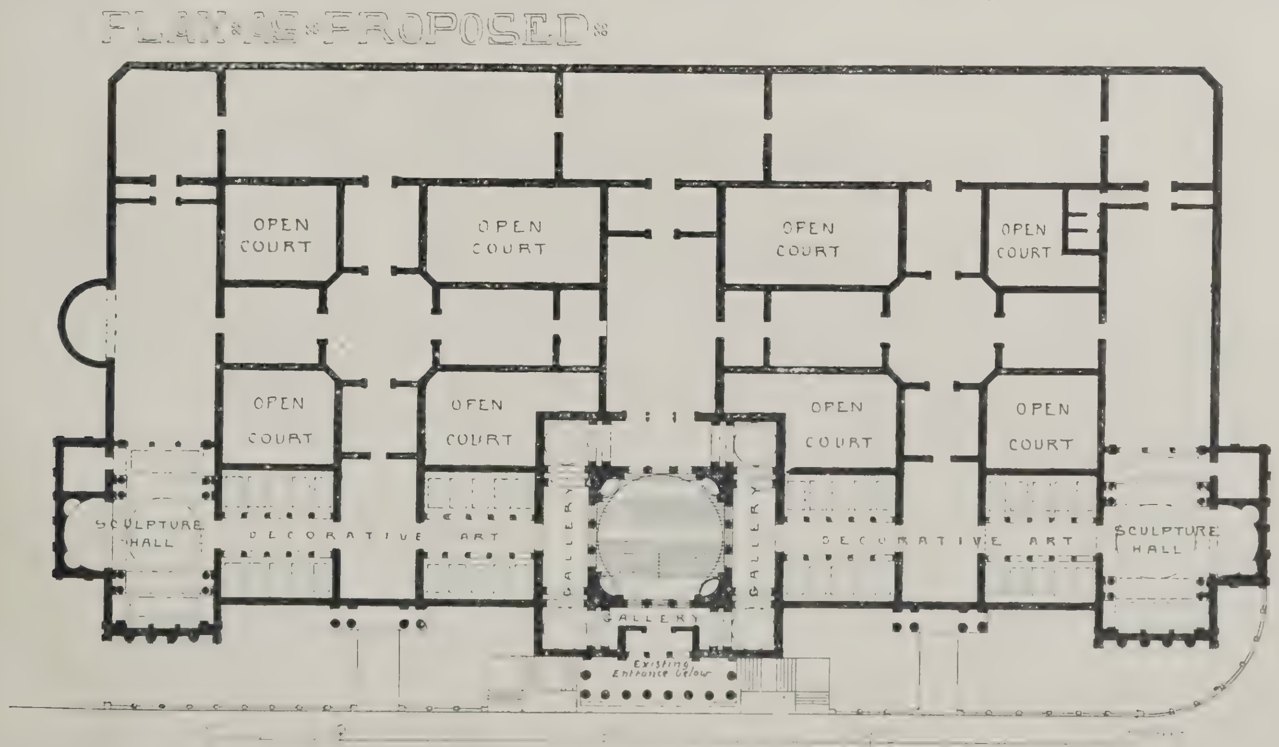
It is a fundamental principle of the law relating to building contracts that the contractor must verify for himself the possibility and feasibility of the works described in the specification. Having made his tender in accordance with the plans, drawings, and specification, he cannot be heard to complain if he finds that his obligations are greater than he at first anticipated. In Thorn v. Mayor of London (1876, L.R., I.A.C., 120), the Corporation of London invited contractors to tender for the execution of certain works for the building of Blackfriars Bridge, according to plans and specifications prepared by the engineer to the Corporation. The specification provided that the contractors were to take out their own quantities, and that the accuracy of the plans was not guaranteed by the Corporation. The contractors were warned particularly that they must satisfy themselves as to the nature of the ground through which the foundations had to be carried. Iron caissons were specified to be used in the construction of the works, but when the contractors whose tender was accepted proceeded to use the caissons as designed, it was found that they would not resist the pressure of the water, and the plan of the work had to be altered, and the use of the caissons abandoned. The contractors claimed for the loss occasioned to them in attempting to use caissons, and contended that the Corporation had warranted, although not expressly, that the work could be done inexpensively by the use of caissons according to the specification. The House of Lords held that no warranty could be implied. The following passage from the judgment of Lord Chelmsford has become historic. He said: "There can be no doubt that the plaintiff, in the exercise of common prudence, before he made his tender, ought to have informed himself of all the particulars connected with the work, and especially as to the practicability of executing every part of the work contained in the specification according to the specified terms and conditions. It is said that it would be very inconvenient to require an intended contractor to make himself thoroughly acquainted with the specification, as it would be necessary upon each occasion for him to have an engineer by his side...But if the contractor ought prudently and properly to have full information of the nature of the work he is preparing to undertake, and the advice of a skilled person is necessary to enable him to understand the specification, is it any reason for not employing such a person that it would add to the expense of the contractor before making his tender? It also said that it is the usage of contractors to rely on the specification, and not to examine it particularly for themselves; if so, it is a usage of blind confidence of the most unreasonable description."

In another case, Tharsis Sulphur and Copper Co., v. McElroy (1878, 3.A.C. 1040), contractors had undertaken to erect certain iron buildings in accordance with a specification. The girders proved too thin. It was held that they were not entitled to charge as an extra cost of providing stronger girders. The principle of the decided cases may be stated by saying that it is no defence to an action for damages for faulty construction or bad foundations that the works so far as they were carried out were constructed in accordance with the specifications. So, where a builder brought an action for a balance due upon a contract for the excavation and masons' and bricklayers' work of certain houses, it was replied that as the houses were set upon insufficient foundation, the builder had not carried out his contract. It was held that the builder was liable for the defects of the soil, and was bound to take usual and proper means for ascertaining the nature of the ground and putting in proper foundations.

In the view of the foregoing principles, and of the fact that many contractors do not examine foundations, etc., for themselves, it is obvious that the architect who desires to avoid future trouble between his employer and the contractor, must observe the greatest care in drawing specifications. In its ultimate result, the error caused by an omission is nearly as important as that caused by an inaccurate table of quantities or an underestimate of the strength of a particular type of girder. As a general rule, the contract between employer and contractor expressly refers to and incorporates the specification as part of it. But it requires no great formality to bring about this result. So if a man engages to do certain work in conformity to drawings and a specification, the offer incorporates the specification and the drawings; and if the specification mentions a time for completion, and the offer is accepted, completion within the time referred to in the specification is a part of the contract.

The result of negligence in drawing a specification may be to impose on the employer a liability greater than that which he was prepared to undertake. For instance, if the architect, owing to a negligent or too hasty survey, fails to perceive and allow for some difficulty, extra work may have to be carried out. In one case, Moneypenny v. Hartland (1828, 2.C. and P., 378), failure on the part of an architect to examine the ground for the foundations of a bridge involved an additional expense of £1,600. It was held that he could not recover his fees: the judge said: "If a surveyor delivers an estimate greatly below the sum at which the work can be done, and thereby induces a private person to undertake what he otherwise would not do, then I think he is not entitled to recover." Not only might an architect lose his fees in such a case, but he might be liable to an action for damages at the suit of his employer.

With reference to our observations on the rebuilding of No. 1, Brick Court, Temple, we are informed that the whole of the facings and rubbers for this work were supplied by Messrs. Thomas Lawrence and Sons, Bracknell, Berks. The general facings are of specially dark, hard-burnt, hand-made, sand-faced bricks, of mixed colours, the quoins and window dressings of bright orange red colour, and the rubber window heads, etc., of a darker or cherry-red shade.



PROPOSAL FOR REMODELLING THE FRONT BLOCK OF THE NATIONAL GALLERY. H. H. STATHAM, ARCHITECT.

(For Elevation, see Centre Plate.)

THE HAGUE PALACE OF PEACE.

The site first proposed for the Palace of Peace lies a mile away from the present site on the other side of The Hague. It forms part of the grounds of the miniature palace which belonged to, and in which died, Princess Anna Paulovna, wife of King William II. and grandmother of the reigning Queen. Passing, in course of time, into the hands of a company, the grounds, to the extent at least of about 16 acres, were acquired by the Government at a cost of over £58,000. The old palace still stands by the gate, and, with its lofty rooms and old-fashioned decorations, forms charming quarters for the architects and their drawing staff. It will, however, be swept away when the time comes for laying out the grounds of the Palace of Peace.

To make room for the great building now in course of construction, a large space had first to be cleared in the thick wood which covers the grounds. The authors of the scheme (says the "Times" special correspondent at The Hague, from whose account this description is condensed) have shown equal wisdom and good taste in setting the building well back from the road. The Palace, built in brick and stone, with roof of blue Welsh slates, of an architecture partly Dutch and partly Flemish in character, has the noble proportions of some of the old town halls of Belgium. The architect is M. L. M. Cordonnier, of Lille, who has associated with him as resident architect, Mr. J. A. G. van der Steur, of Haarlem. His design was selected out of 216 from all countries by a jury composed of six leading architects of Great Britain, Holland, France, Germany, and the United States. M. Cordonnier's original design has, however, been very considerably altered, thereby gaining greatly in compactness of internal arrangement as well as in lightness of external appearance.

The Palace, on which 200 men are at work, and of which the roof was begun last week, is expected to be finished in [illegible]. It consists of a half-basement containing Press rooms, a telegraph and other offices, a heating and lighting plant with 14 boilers, accommodation for the staff of the building, and a spacious restaurant.

The main entrance is approached by curving slopes, not steps. An arcade with balusters in front extends on either side. On the left rises a square tower to a height of about 260ft. At the opposite corner of the façade and in the outer wall of the Great Court is the foundation stone, laid on July 30, 1907, by M. de Nelidoff, president of the second Peace Conference. The Great Court, which is, of course, the inner shrine of this Temple of Peace, is a hall about 70ft. long, 40ft. wide, and 33ft. high. On one side are three large windows, on the other three galleries. At one end is a fourth large window; at the other the daïs for the Tribunal. At the other end of a corridor lined with beautiful Greek and Italian marble, and behind the base of the tower above-mentioned is the Small Court, almost exactly half the size of the Great, and having also three galleries. The ceiling of the Great Court has a barrel-vaulting; that of the Small is flat and heavily moulded. The latter seems likely to produce the better acoustic properties of the two. The remainder of this floor is occupied by reading rooms, a map room, consultation rooms, and other appropriate accommodation for the parties to a case. On the upper floor, approached by a magnificent staircase projecting into the central courtyard, are the rooms of the Administrative Council and other officials of the Permanent Court of Arbitration, and a library capable of containing 200,000 volumes, with a book-lift to the reading-rooms below. The centre of the building is occupied by a courtyard 144ft. long and 111ft. wide, with a fountain in the centre where the air to be breathed in the building will be washed before being filtered and otherwise dealt with by the ventilating apparatus. The whole building is, roughly, 260ft. square.

The laying out of the grounds, which will contribute much to the amenities of the Palace, is, as our readers will remember, in the hands of Mr. Thomas H. Mawson, Hon. A.R.I.B.A.

CORRESPONDENCE.

[The Editor declines responsibility for the statements made or opinions expressed by correspondents.]

The Late J. F. Bentley and the Royal Gold Medal.

SIR,—In the current issue of the "A. and B.J." it is stated that Bentley was the R.I.B.A. Gold Medallist of 1902. This is not quite accurate. Certainly he was nominated for the honour by the Council, and the late King duly approved of the selected, but poor Bentley died before the day on which the presentation was fixed to take place. His late Majesty could not see his way to sanction the presentation of the medal to the widow as an heirloom for the family, on the ground that it would create a precedent; which consideration seemed to suggest the possibility that the custom of dying before the "medal night" could become so popular as to embarrass the Institute. The Council was obliged to cast about for another recipient, much to its regret I believe, as also to that of the profession at large.

F. CHATTERTON.

[We are much obliged for the correction. The error arose through the deletion of the words "nominated as," in condensing. In thanking Mr. Chatterton for his note, may we add the hope that his vacation visit from Cairo may prove very pleasant?—ED.]

The Society of Architects' Travelling Studentship Design.

SIR,—Being the fortunate winner of the above competition, I read Mr. Taliesin Rees's letter, in your issue of June 22nd, with interest; and, being a student, I gladly accept his comments in the spirit in which they are given.

But, in fairness to myself, I would point out to him that the lounge hall which he characterises as "ridiculously large," and the ladies' room, which he says "should not connect directly with the gentlemen's lounge," are conditions laid down by the Society; it being stipulated that the former have an area of 1,000 ft. super; and being intended for ladies and gentlemen, and not gentlemen only. It can hardly be thought to be too large for 175 members.

I cannot agree with him, either, that the lounge is badly lighted or that it would be draughty and cold in winter.

He says there are no urinals. There are five shown in the lavatory, but the dividing lines seem to have been obliterated in the reproduction of the drawings.

He suggests that the drying-room should be separately heated by a stove, an arrangement which is already provided for in the plans, the two flues on the ground plan showing the intention.

D. W. COOMBS.

Licentiate R.I.B.A.

SIR,—I have recently been urged by a friendly F.R.I.B.A., to join the R.I. as a Licentiate.

As I have grown grey in the service of architecture, so far tailless and unashamed, the advantage is not apparent to me, whose years are many and whose buildings are by no means few. Nor am I convinced, despite your leading article in this week's issue, that the addition of the five polytechnic characters imply other than the quite erroneous indication of ability by their possessor to erect a goodly and appropriate building to the satisfaction of all parties concerned. Of your patience and space, therefore, may I be permitted to make a few interrogatory and other remarks on this much debated subject, the most prominent question of which is perhaps the raison d'être of the R.I.B.A.

By those who champion the mighty at 9, Conduit Street, I am told with fine sententiousness that it exists for the good of the public, of architecture, and of the practitioner. Most admirable aims, of course; but what do we find? Acres upon acres of appalling rubbish erected by speculative builders, by auctioneers, house agents, furnishing houses—great and little, by the incompetent and the ignorant, which the Institute makes no great effort to stop. We see quantities of almost equally offensive overloaded work from many members of that body, and tricks of draughtsmanship resulting in the "box-of-bricks and tallow-drip style," which may be architecture as understood at the Institute, but is somewhat startling to those of us who are attempting to vivify in our buildings the great traditions handed down by masters of the past. Domestic architecture has made quite delightful strides within recent years, but the Institute had nothing to do with that movement. Norman Shaw and other men who have consistently held aloof from it are almost entirely responsible. Wren was no sort of Institute man, yet a greater architect never lived than he. Then, do I not remember the unfortunate attitude assumed by the Institute over the recent dry-rot case, the many unreasonable conditions it has allowed to pass as satisfactory in some recent competitions, and the position it took up with regard to the Registration Bill introduced by the Society of Architects? Small wonder the Government ignored it over the Town-planning Bill, and public bodies so frequently visit it with contumely.

Seemingly, by attempting to make the practice of architecture a "Close Borough," and allowing the fetish of examination to cramp a most necessary cosmopolitan breadth of view, the Institute is lowering the status of a distinguished and robust art to the level of a bourgeois and doctrinal profession, a state of things advantageous, I admit, to the man who poses as an expert at the Law Courts, but doing insidious harm to the great calling in which I have the honour to practice.

Fortunately faint indications are apparent that the mild form of insanity which indissolubly associates success in examinations with untold excellence is passing and the more rational view, that a man shall stand by his aptitude and work, and not by the outpouring of ephemeral knowledge crammed in for a special occasion, too often at the instance of money and mediocrity, is taking its place.

The remedy is difficult, yet possible, but it needs high courage in many ways, particularly to withstand the clamour of the younger professional element of the Institute, whose swollen tails as frequently puff the head, as wag the common body.

That an Alma Mater is necessary to protect the children of architecture and elevate them to manhood of quality is sufficiently obvious, but I am afraid it is equally clear the Institute are incapable of rising to the necessary height, but will regrettably remain a superior, if unrecognised trade union.

Therefore, Sir, do I not unhappily remain.

TAILLESS AND UNASHAMED.

London, E.C.

[It is perhaps unnecessary to draw special attention to the notice at the head of this section.—ED.].

CHESTER HISTORICAL PAGEANT.

As the National Federation of Master Builders will hold their half-yearly meeting at Chester in the last week in July, and as the Chester Historical Pageant is to be held from the 18th to the 23rd of the same month, no doubt many members of the Federation will avail themselves of the opportunities thus afforded of rendering doubly memorable their visit to the ancient city.

For the following description of the pageant, and for the loan of the accompanying illustrations, showing respectively the cathedral, the water tower, and St. John's ruins, we are indebted to Miss Agnes Haynes, the pageant Press representative.

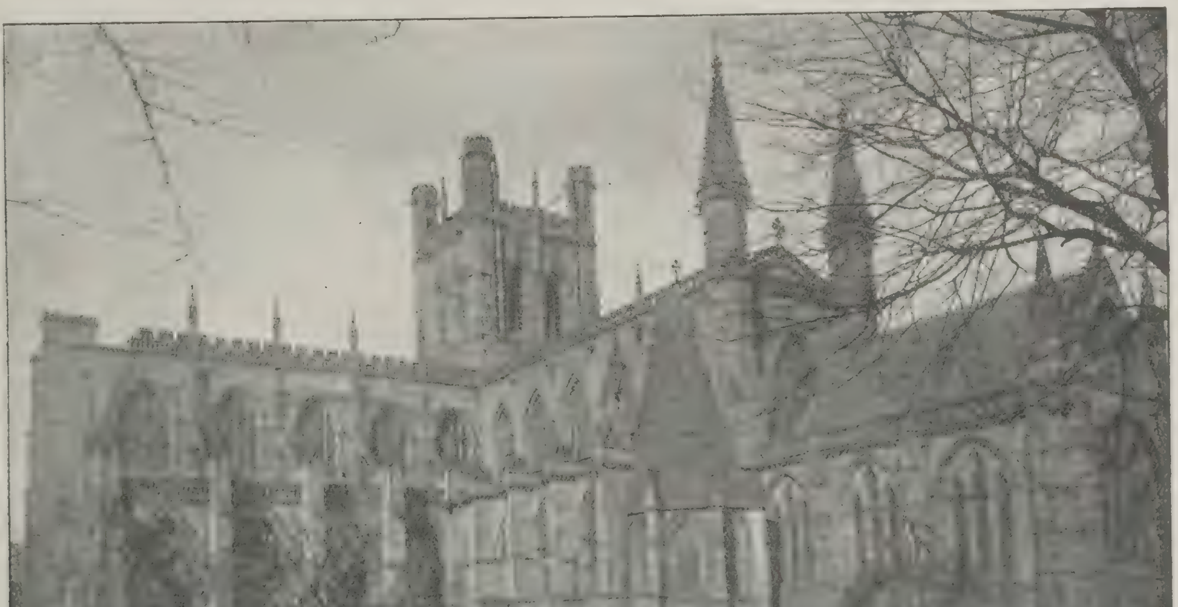
The Chester Historical Pageant is not a thing of mushroom growth. More than a year elapsed in evolving the general plans to make the scheme feasible before any attempt was made towards more material progress. Since then many months have been allotted to the actual building of the pageant, the work being subdivided under responsible heads and committees, under whom over a thousand helpers are voluntarily labouring.

By permission of His Grace the Duke of Westminster, the site of the display will be Eaton Park, than which no more lovely or suitable setting could be found. Scenery will not be used, for the trees and the meadowlands, aided by imagination, will supply all that is desired. A grand-stand for the spectators, from the design of Mr. R. Cecil Davies will give accommodation to 4,000 spectators. The roof will be flat, and so arranged that the Master of the Pageant, Mr. G. P Hawtrey, can direct and command the performance from it, between 3,000 and 4,000 performers being under his control.

The Pageant is divided into 8 episodes and an introduction.

The episodes are spread over many centuries. Episode I., Agricola returns to Deva after defeating the Ordovices, A.D. 78. This gives a scene in the Roman camp. Episode II., King Edgar on his imperial progress, with Queen Elfrida, receives the homage of the Eight Tributary Princes, A.D. 973, reproducing the subjection of these princes to "The Peacegiver," as Edgar was called, because of the cessation of war during his reign. Episode III., Hugh Lupus, with St. Anselm, founds the Abbey of St. Werburgh, A.D. 1093, placing before us the reason why Chester to-day is a cathedral city, with St. Werburgh for its patroness. She was enshrined in what is now the cathedral. To Hugh Lupus, the first Earl of Chester, the present Duke of Westminster traces his ancestry. The earldom became a royal prerogative in the thirteenth century. Episode IV., Archbishop Baldwin preaches the Crusade at Chester, A.D. 1189; giving the scene at the Market Cross during the preaching of the third Crusade, in which Richard Cœur-de-Lion took part. Episode V., Prince Edward, first Royal Earl of Chester, and Princess Eleanor, visit Chester, A.D. 1256, expressing the resentment of the Welsh against the usurpation of the earldom. Episode VI., Richard II. is brought a prisoner to Chester by Henry Bolingbroke, A.D. 1399; placing the King's humiliation before us after his betrayal at Flint. Episode VII., King James visits Chester; the Midsummer Revels, is a double episode. It reproduces the visit of King James, A.D. [illegible], and afterwards the revels that for many centuries were the great festivities upheld by the City Guilds. Here the maypole, morris, and other typical dances will make a truly gay and merry scene. Episode VIII., the siege of Chester and visit of King Charles I., deals with the last war with which Chester was closely associated. The battle will not be shown; but the scene will suggest its progress and the defeat of the too tardy king. Following this will be a great gathering of all the performers, and a tableau, during which the chorus of 250 voices will sing the "Ode to Chester," for which Dr. Bridge, as Master of the Music, has composed the score.

Like the cathedrals of Worcester and Gloucester, Chester Cathedral possesses only one tower. Its height, however, is only 127ft., whereas Worcester is 196ft., and Gloucester 225ft. It was probably the intention to complete the Chester tower by adding a tall spire. Sir Gilbert Scott made an elaborate design for such a spire, and was deeply disappointed at having no opportunity of putting it into execution. The old collegiate church of St. John the Baptist, of which the ruins are illustrated on p. 44, is said to have been built by Ethelred, King of Mercia (A.D. 674--704), but may possibly date no further back than the first decade of the tenth century. The Water Tower shown on p. 48 stands at the north-west angle of the city walls, and derives its name from the fact that the tide formerly washed its sides. It is circular in plan, 32ft. in diameter, and 72ft. high, and was built by one Helpstone for £100 in the year 1322. These and many other interesting illustrations and particulars are contained in the admirable guide to the city which is issued by Chester Corporation.



CHESTER CATHEDRAL.

(From the Corporation Guide to Chester.)

NEWS IN BRIEF.

It is announced by cablegram from Berlin that the second series of the Bagdad Railway Loan, amounting to £4,312,300, has been oversubscribed.

* * *

The Development Commissioners under the Development and Road Improvement Funds Acts, 1909 and 1910, have made the following apointments as from July 1st 1910: Mr. Harold Edward Dale to be Secretary to the Commissioners. Lord Basil Temple Blackwood and Mr. George Haw, F.S.S., to be Assistant Secretaries.

* * *

A meeting has been held in Birmingham in support of the establishment of a municipal natural history museum for the city. A committee was appointed to obtain promises towards the formation of the collection, the Corporation undertaking to find accommodation for it.

* * *

The Royal Doulton Pottery, Burslem, has just discovered the original pattern books of the famous old Leeds factory. These books show all the original designs for old Leeds ware in their colours, as well as the prices paid to the workmen for producing the patterns.

* * *

Mr. H. Inigo Triggs, taking part in a discussion on "Women in Horticulture," at a sitting of the Women's Congress at the Japan-British Exhibition, contended that the true art of gardening was to make the garden harmonise with the house standing in it, and that for this purpose it was most desirable that ladies should have some knowledge of architecture.

* * *

The question of restriction of the height of buildings was discussed at a meeting of Treasurer's Committee of the Edinburgh Town Council, in connection with the matter of feuing the larger portion of the Gorgie estate not required for the markets scheme. They considered whether the area should be laid out in square blocks or otherwise, the width of the roads, and the height of the buildings, and a long discussion took place over the question whether there should be a restriction as regarded the height of the buildings. It was moved that the buildings should be restricted to three storeys in height; but a further motion, to the effect that along the outside frontages of the wide streets four storeys might be allowed, and three storeys for the streets inside the area, was carried by a large majority. It seems that a firm of builders have offered to erect tenements, but, of course, nothing could be done until the height of the tenements had been settled.

* * *

Dr. Hoyle, director of the National Museum of Wales, has applied to the Cardiff Property and Markets Committee for permission to extend the south-east corner of the museum 5ft. beyond the original building line into Park Place, instead of 15ft., as applied for at a previous meeting. He explained that the plans had been amended on the east side, a projection having been added to the building equidistant from the curb in Museum Avenue, with the projection on the City Hall, and the additional space thus obtained enabled the museum council to be satisfied with an extra 5ft. instead of 15ft. in Park Place. The committee decided to recommend the city council to grant the application.

* * *

The Mayor of Exeter has just set going in Exeter Cathedral an astronomical clock which has been erected on a stand of oak in the Speke Chantry of the cathedral. This ancient timepiece, parts of which were made in 1317, has been for many years a conspicuous feature of the north transept. It was probably erected in Bishop Stapledon's time, and was originally in the nave. The use of the clock, as of other similar clocks at Wimborne, Wells, and Glastonbury, was to regulate the times of the various services, and for this purpose it was kept under the observation of watchers day and night. This clock is claimed to be the oldest astro-horological example in England. Before being removed to its new quarters in the Chantry, the ancient timepiece was renovated by Mr. Hall, the well-known authority on clocks.

"Rates: Being the revenue and expenditure of boroughs and urban district councils of ten thousand or more inhabitants (England and Wales) analysed and compared," by C. Ashmore Baker, A.M.I.E.E. (2s. 6d. net; P. S. King and Son, Orchard House, Westminster), has been produced with the object of facilitating comparisons of municipal expenditure as between town and town. The wide variations from type, the author points out, are not to be accounted for solely by mere differences in locality and population. Some measure of standardisation is required, and this Mr. Baker has endeavoured to supply in a well-conceived digest of Local Government Board returns. The analysis is valuable in revealing the true position of affairs as nearly as figures can show it, and the publication seems to be quite capable of realising its author's hope that it may, "by enabling the various authorities to compare notes and exchange information, influence the standard of municipal work both in regard to efficiency and economy."

* * *

In giving evidence before a House of Commons Committee last week, relative to the Gas Companies (Standard Burner) No. 1 Bill the object of which is to authorise the use by the promoting companies of the Metropolitan No. 2 Argand as the burner for the gas supplied by them, Professor Vivian Lewes, Chief Superintending Gas Examiner to the Corporation of the City of London, said uniformity in the method of testing gas would be secured if the use of the No. 2 Argand became universal as the testing burner. One advantage of this uniformity would be that it would enable manufacturers to standardize such gas apparatus as stoves, cookers, burners, and other fittings. The result of standardization would be to cheapen the cost of the apparatus, and this, of course, would be greatly to the benefit of the consumers of gas. The change of burner would make practically no difference to the consumers of gas through the incandescent mantle or for cooking or power purposes. There would be a certain loss of light to the user of the flat-flame burner, but the difference would be very slight.

The old Collegiate Church of St. John the Baptist has been assigned to the seventh century, but is more probably of the tenth century

ST. JOHN'S RUINS, CHESTER. *(From the Corporation Guide to Chester.)*

At a full meeting of the York City Council, resolutions were read from the Society of Antiquaries (London), the Yorkshire Architectural Society, the Yorkshire Archæological Society, the National Trust for the Preservation of Places of Historical Interest, and from the Yorkshire Philosophical Society, regretting that the parish authorities of Christ Church, York, proposed to hand over the church to the Corporation for the purpose of pulling down, also that the Corporation had undertaken its destruction, and protesting against the demolition of the Church, and hoping that the Council would reconsider its decision. Other protests were recorded, and after discussion, it was resolved that the minutes of the Council, proposed the pulling down of the Church should be rescinded. The picturesque old Church is therefore saved.

* * *

A sum of about £20,500 has already been subscribed towards the cost of the school which it is proposed to erect at Hawarden as a memorial of the late Canon Harry Drew, who was at the time of his death rector of Hawarden, having at a previous period been one of the curates of the parish. The cost of the proposed memorial is expected to be about £3,000.

* * *

Sir J. J. Thomson, F.R.S., Cavendish Professor of Experimental Physics of the University of Cambridge, has been elected President of the Junior Institution of Engineers in succession to Sir Henry J. Oram, K.C.B., Engineer in Chief of the Fleet.

OBITUARY.

MR. W. BANKS GWYTHER.

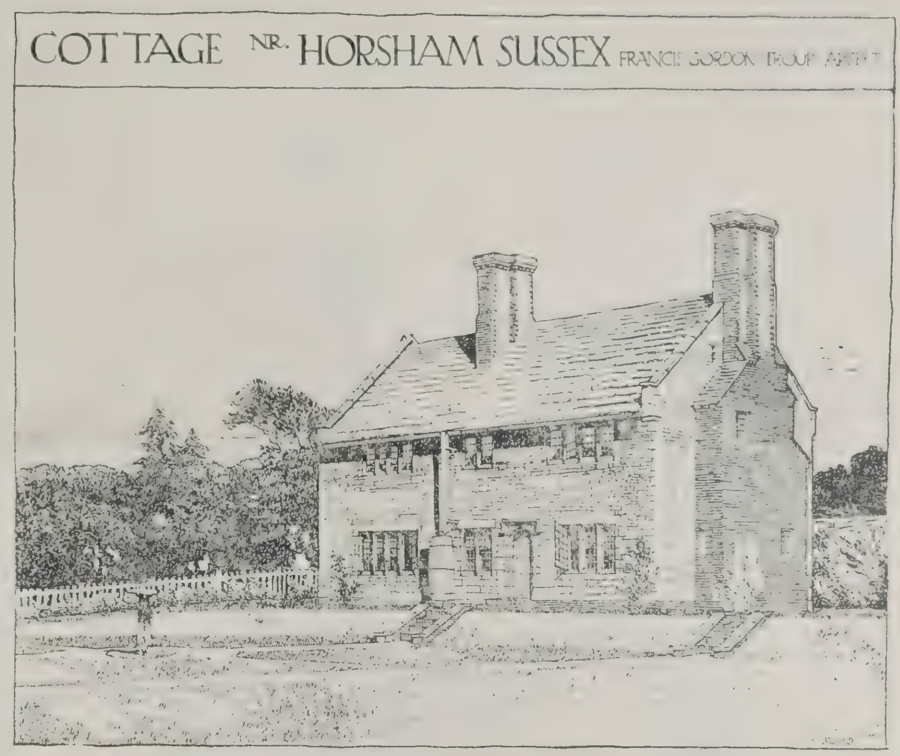
The death has taken place at Shillong of Mr. William Banks Gwyther, A.R.I.B.A., chief engineer to the Eastern Bengal and Assam Government. Mr. Gwyther received his technical training at the Thomason Engineering College, Rorkee, and entered the Bengal Public Works Department in 1876. He rose to be executive engineer, and was appointed Under-Secretary to the Government in 1892, reaching the rank of Superintending Engineer in 1903. He has left memorials of his architectural skill in Calcutta in the Military Secretariat, Writers' Buildings, and other public offices. When the new province was formed Mr. Gwyther was selected to be Chief Engineer to the Administration; and in this capacity heavy responsibility devolved upon his in the provision of secretariat accommodation and otherwise adapting Dacca to the new rôle of a provincial capital.

MR. HENRY SPALDING.

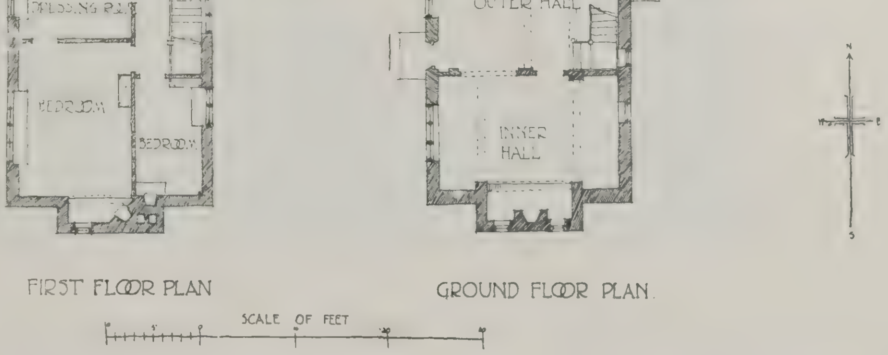
Mr. Henry Spalding, F.R.I.B.A., died at his residence in Hampstead on June 25th, after a few days' illness, from acute pneumonia. He was in the 72nd year of his age, and had been in practice over 40 years, joining the Royal Institute of British Architects in 1873. Among the many public buildings carried out in conjunction with his partners may be mentioned the following: The Municipal School of Technology, Manchester; the Workmen's Dwellings, Manchester; Public Baths at Hampstead, Dulwich, Camberwell, Wandsworth, Westminster, Shoreditch, Coventry, etc. Schools at Berkhamsted, Luton, Stockport, etc. The Village Homes for Boys, Swanley, and additions to the Homes at Farningham. Offices for the London Missionary Society; the London City Mission; the Imperial Tobacco Co., and other private firms. Churches and Schools at Hampstead, West Hampstead, Cricklewood, Harlesden, East Finchley, Barnet, Hither Green. Residences at Hampstead for the late Judge Waddy, the late Judge Bompas, and many others. Eleven years ago he took into partnership his son, Mr. Reginald H. Spalding, A.R.I.B.A., who will continue to carry on the practice.

MR. GEORGE CHATTERTON.

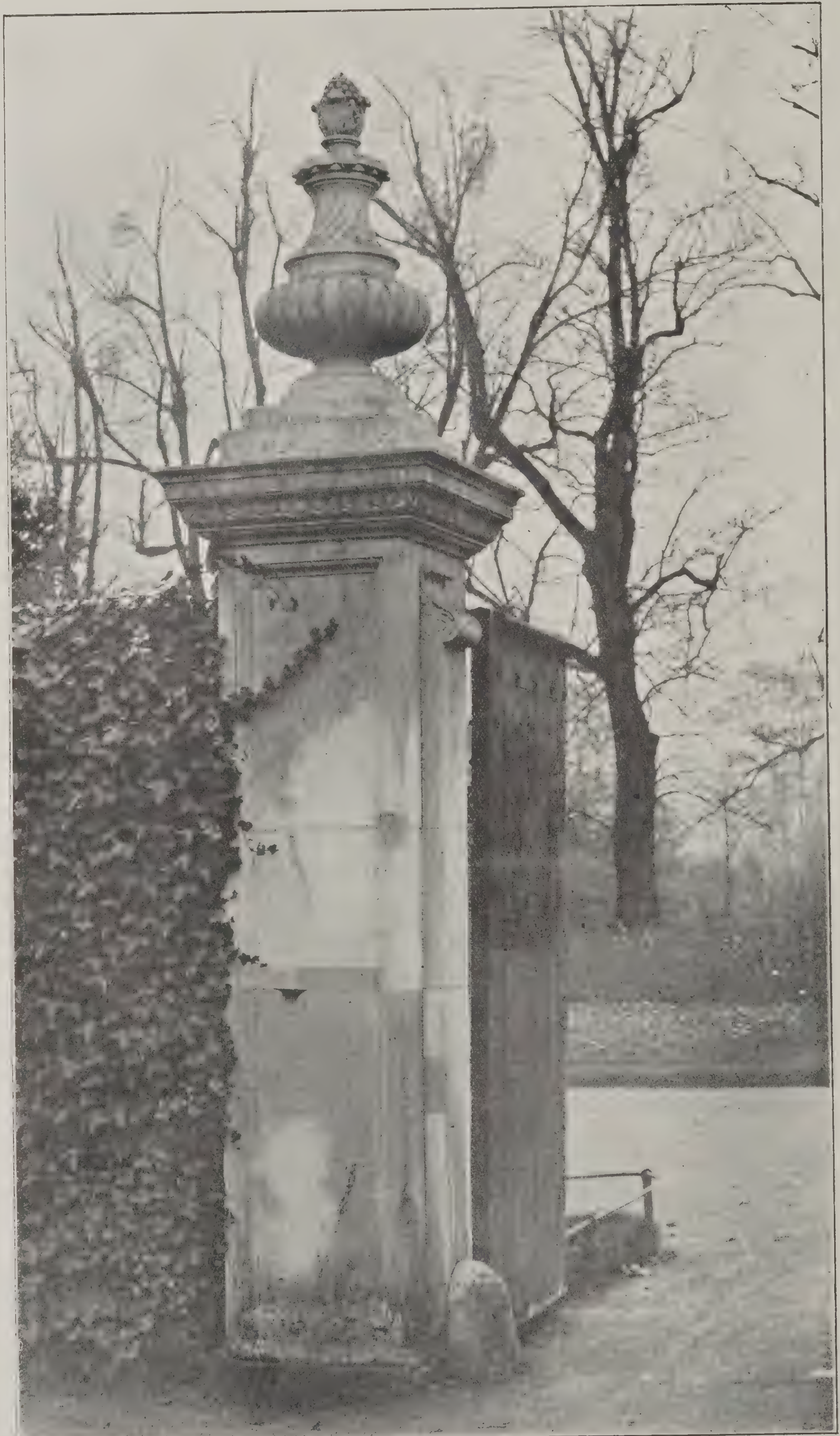
Following a severe operation, Mr. George Chatterton, M.A., M.Inst.C.E., died at his residence at Wimbledon. He was the son of George Chatterton, J.P., of Cork; was born in 1853, and was educated at Trinity College, Dublin, B.A., 1873, B.A.I. 1875, M.A. 1879, being Senior Moderator and Gold Medallist in experimental science. He began his engineering work under the late Sir Joseph Bazalgette, and subsequently acquired a large practice in municipal engineering and as a witness before Parliamentary committees. He was a member of the first County Council in Surrey, and sat on that body till the present year. He was a Justice of the Peace for the county of Surrey. He married in 1878 a daughter of the late Sir Joseph Bazalgette, and leaves a widow and seven children.



This cottage is situated about a mile and a half from Horsham, Sussex. Its walls are of Swanage stone, with local hand-made red bricks for chimney stacks and Gloucestershire stone tiles to the roof. The casements are of wrought iron, with leaded lights, and the joinery is of oak.

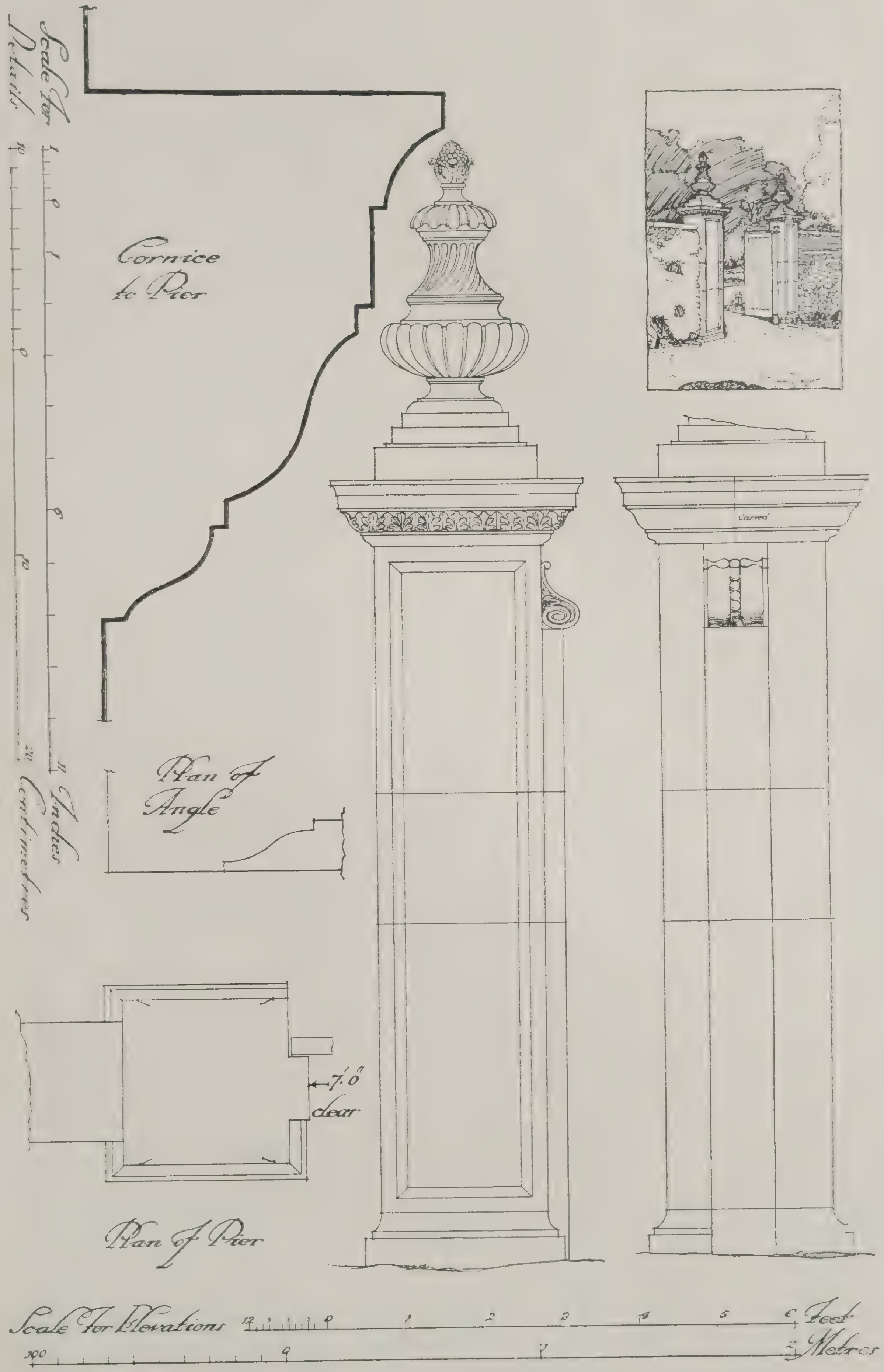


COTTAGE NEAR HORSHAM, SUSSEX. FRANCIS GORDON TROUP, ARCHITECT.



This is one of the finest of the gate piers at Hampton Court Palace, the ornament being appropriate and well placed, while the profile of the vase is particularly graceful. The pier is of Portland stone.

GATE PIER IN THE "WILDERNESS," HAMPTON COURT PALACE.
SIR CHRISTOPHER WREN, ARCHITECT.



GATE PIER IN "THE WILDERNESS," HAMPTON COURT PALACE. SIR CHRISTOPHER WREN, ARCHITECT.

PICTURE EXHIBITIONS.

Society of Fine Arts.

At the Society of Fine Arts Gallery, there is a really fine collection of architectural drawings and etchings. In the first place, there is a collection of pencil drawings by Mr. Axel Haig. It may not be the usual opinion, but we prefer Mr. Haig's pencil drawings to his etchings; the latter are, to our thinking, too highly worked and finished for etching, which ought to be an art of free and unfettered line, not with any resemblance to engraving. The pencil drawings here exhibited are, as architectural drawings, perfect in style and execution; thoroughly accurate in drawing and not over-finished. They include drawings of a number of celebrated buildings; several of the interior of Burgos; one very interesting one of the Classic arcaded screen in St. Remi, Rheims; among other interesting ones are the cloisters at Tuy, and an unusual view of "Assisi from the Hotel, Subasio." There are sixty-nine drawings in all. In the inner room is a collection of etchings by several artists. Mr. Percival Gaskell's are landscapes, with a good deal of tint work about them, which is not the purest form of etching, but they are effective little pictures. There are two sets of architectural etchings by Mr. Mortimer Menpes; these are conscientious line etchings, rather heavily worked, and consequently somewhat black in effect, but they are all well drawn; a view of St. Paul's taken from over the roofs of the houses westward of the Cathedral is very good, and shows that the author knows how to put a dome into perspective; St. Paul's dome has in this particular received much maltreatment from painters. The few works by Mr. David Law and Mr. C. O. Murray belong to the category of what we call etched engravings, showing a great deal of work, but with a rather tame result. With Mr. Cameron's work, we come more into the region of etching properly so called. His "Coldstream," "Old Whitby Bridge," "The North Porch, Chartres" (seen from inside), and "Le Pont Neuf, Paris," are all excellent examples of what etching can do, and what it should leave out. By Mr. Edward Slocombe, there is a collection of six very fine etchings in a larger and bolder style; five of them of cathedrals (Rouen, York, Antwerp, Malines, Amiens), and one of an old street in York, "The Shambles." With the works of Sir Seymour Haden, we come to the poetry of etching; these are not mostly architectural, though buildings come into them, as in "Greenwich" and "Whistler's House at Old Chelsea"; they represent general effects translated into etched line. Among them is the impression of the grand etching "The Agamemnon," one of his most famous works. These, and those by Mr. Frank Short, are typical examples of the qualities which distinguish etching from every other branch of art, and show what can be done with line alone, and what is the value of blank space in contrast. There are other works by Mr. Brangwyn (rather overloaded and heavy), Mr. W. Monk, and Mr. Alfred Hartley. Altogether a rather remarkable exhibition.

Mr. Lance Thackeray's water-colours of "The People of Egypt," in another room, are good sketches of types of the populace, but more interesting as illustrations than as art.

Maclean's Gallery.

At Maclean's Gallery in the Haymarket there is a collection of oil paintings of Spanish life and Spanish scenes by Miss M. Cameron which show a good deal of power in the painting of figure groups, some of them life size. Miss Cameron has, with her study of Spanish figures and subjects, adopted (consciously or otherwise) somewhat of a Spanish manner of painting, which goes well with the subjects; "Maximino de Segovia," a portrait of a cloaked man riding a donkey, looks as if it might have been by a Spanish artist. The collection shows a good deal of artistic power, though not of the first order. The flower paintings by Mdlle. Mathilde Sée, at the same gallery, are fine as flower paintings, especially in the fact that her water-colours convey not only the colour but the softness of texture and fragility of flowers; it has become rather a modern custom to paint flowers in too heavy and solid a manner. But we do not care very much for what are called "Flower-pieces"; and seventy of them at a time is a good deal too much.

The Carfax Gallery.

We are not quite able to see why there should be a collective exhibition of Sir W. Eden's water colours. They are good amateur work, but hardly better than those of a good many other amateurs. The still-life subjects are the best.

ART ITEMS.

"In honour of and in friendship to art," the Lord Mayor and Lady Mayoress of London held a reception at the Mansion House last week, when the guests made a large and distinguished assembly, including Sir Lawrence Alma-Tadema, Sir Hubert von Herkomer, Mr. E. A. Abbey, Mr. G. Clausen, Mr. Frank Dicksee, Sir George Frampton, Mr. Goscombe John, Sir Aston Webb, Mr. Alfred East, Mr. E. A. Drury, Mr. Ernest Crofts, Mr. Arthur Hacker, Mr. F. W. Pomeroy, Mr. Derwent Wood, Mr. Hamo Thornycroft, Mr. Bruce Joy, Mr. J. H. Lorimer, Mr. Ernest George, Mr. T. G. Jackson, and many others.

* * *

Some very fine and rare Greek coins were sold last week by Messrs. Sotheby, 134 lots realizing £2,644 19s. 1d. The more important were :—Argos, silver coin with head of Hera to right, crowned with hoop-shaped stephanos—£76; Delphoi, silver coin with lyre of primitive form, furnished with seven cords, the only specimen known—£51; another, with head of Amphictyonic Demeter of Anthela to left, crowned with corn leaves, and veiled, one of the finest known examples of this beautiful coin—£315; Eretria, silver coin, with head of Gorgon facing, of very high rarity—£275; Kyzikos, gold coin, with Laureate head of Apollo to right, unpublished and exceedingly rare — £100; Lampsakos, gold coin, with head of Aktaion to left, a rare and beautiful coin—£226; another with the Laureate head of Zeus to left—£109; Syrakousai, medallion by Euainetos, Head of Persephone to left—£150; and another—£131.

THE WATER TOWER ON CHESTER WALLS. *(From the Corporation Guide to Chester.)*

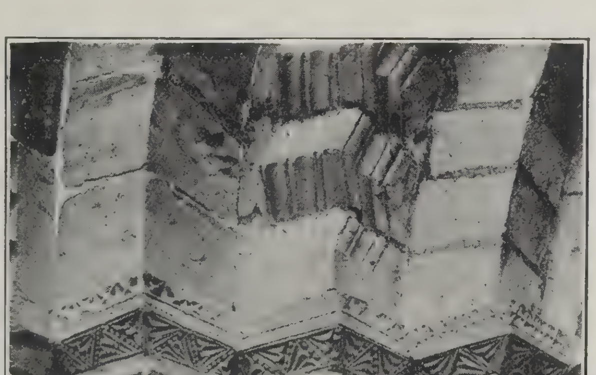
An exhibition of Canadian art which has been opened at Liverpool, in the Walker Art Gallery, is mainly prolific of landscapes, particularly of those depicting the wonderful autumnal and winter effects peculiar to the country. The exhibition remains open until July 23rd.

* * *

The Waldeck-Rousseau monument in the gardens of the Tuileries was unveiled on July 6th, by the President of the French Republic, M. Fallières. The bust of white marble is affixed to the central panel of a kind of marble triptych, with Corinthian columns, and each of the leaves of the triptych bears in golden letters the titles of the principal legislative measures associated with the statesman's name, or a quotation from his speeches. There are life-size marble figures of two workmen, and a female figure emblematic of democracy.

ROMANESQUE CAPITALS FROM LEOMINSTER.

Leominster Church, in Herefordshire, is, architecturally and historically, one of the most interesting in England. It perhaps occupies the site of a minster founded by Merewald, King of Mercia. The eastern limb is attributed to Prince Kenelm, who died in 1060, and the transepts, central tower, and nave to Earl Leofric, who died in 1055, and who was the husband of Lady Godiva. The western doorway is particularly interesting. Its inner orders are carved, as well as the outer ones—an unusual and perhaps a rather futile proceeding, since much of the work is wasted on a position in which it cannot be well seen. The outer orders are obtusely pointed, the inner orders semicircular. The capitals of this doorway are among the finest Romanesque examples we possess, and are happily, as the illustration shows, in admirable preservation. They can hardly be of earlier date than 1160.



ROMANESQUE CAPITALS FROM LEOMINSTER.

BOOKS.

Belgian Churches.

The Cathedrals and Churches of Belgium. By T. Francis Bumpus. London: T. Werner Laurie; 1910.

This is essentially the production of an amateur author for amateur readers, as is sufficiently evident at once by the mere fact that there is not a single plan of a church to be found in it. Such an omission, of course, very much discounts the value of the book, even considered as merely a book for the general reader; for though it may be true enough that the general reader and purchaser is not attracted by plans, he ought nevertheless to have them given to him, and the relation of plan to design pointed out, as a certain proportion of readers might at all events learn something by this means, even insensibly. A book of architecture without plans, on the other hand, is actually misleading, as it is leading the reader to suppose that churches and cathedrals are only arbitrary forms of architecture built up at pleasure, without relation to the limitations of plan and construction.

Such a book as this is in reality a kind of handbook for holiday-makers in the country of which it treats, with historical notes on the churches, and descriptions of their contents, and a series of small photographs of the principal churches. As the author writes clearly and with some knowledge of architectural style and history, it is good as a handbook, pointing out what to see and what to look for. The churches described are those of Tournai, Courtrai, Ypres, Bruges, Ghent, Malines, Brussels, Antwerp, Louvain, and some others. As a matter of convenience, it would have been better if the pages had been headed with the name of the church under discussion, instead of merely a continuous repetition of the general title of the book. As it is, the matter is so massed together and so little divided up by headings, that it is difficult to find out what building is being discussed on any particular page. There should, at least, have been a cross-heading marking the point where the description of any special church commences.

The book concludes with a chapter giving a list of the most remarkable pictures to be seen in the various Belgian churches, which is a useful addition for those who may be looking after pictures rather than architecture.

Garden Planning.

Garden Planning. By W. S. Rogers; with 15 illustrations by the author. London: T. Fisher Unwin; 1910.

This is essentially a gardener's book; although the author takes into account to some extent the relation of the garden to the house, his main object in writing is to recommend, in reference to small gardens especially, the treatment of garden design as governed by aspect—"the true key to the best results, whether in the direction of successful flower culture or of picturesque *ensemble*"; which seems a very reasonable position. Accordingly, all his garden plans are provided with a compass, and are to be judged in reference to their aspect. The character of the plans given shows that the author is alive to the importance of definite plan in a garden, and of preserving in it a reference to the lines of the house. The choice, however, of strong black to mark the portions given up to flower beds, gives the plans a rather unsightly appearance on paper.

In the earlier part of the book is a chapter in favour of "the rectilinear principle," in which the author points out the futility of gardeners making winding paths and sinuous edges to their borders, in order to escape the rectangularity which is, after all, enforced upon them by the straight lines of the boundary. He adopts, for gardens within rectangular boundaries (as nearly all small gardens are), the principle of straight lines and right angles, but without bilateral symmetry. This, however, depends rather on the effect aimed at. The same plot might be treated both ways with good effect, though the effects would be different in character. But, on the whole, rectangularity without absolute symmetry seems a good programme for the small garden. A diagonal path is condemned as out of keeping with the problem; and with this also we are disposed to agree. We do not, however, at all agree in the recommendation that curved walks, when introduced in gardens of greater extent, should be irregular or (in drawing on the plan) free-hand curves. There we come to the futilities of the "landscape-gardener," whose ideal it is to try to make artificial things look as if they were natural. A curved drive should be on a geometrical curve, set out as part of a systematic design.

"Shapes of beds" tend to become too elaborate and fanciful; they are better kept to simple and unpretentious forms; it is, after all, the flowers that we want to look at rather than the shape of the beds. We recommend attention to the excellent practical remarks (pages 66-77) on the materials and construction of paths.

The ideas for fences and hedges are good; that of the water-garden, with its irregular wriggling ponds, we cannot accept, and it is at variance with the author's condemnation of sinuous walks. Among the "Garden Accessories" the ideas for summer-houses are not very good, and as the author rightly condemns what are called "rustic" designs in rough, unbarked poles, which are an absurd pretence of being natural, why does he show a bridge, a seat, and a summer-house, made in that manner? The formal designs for seats are good, and have the solidity of style which ought to belong to a garden seat; it is also good advice to provide brick platforms for wooden seats.

In the main this is a most sensible book, by a writer who practically understands his subject.

NEW MUNICIPAL WORKS.

The Local Government Board has decided to hold (or has recently held, as the dates may indicate) inquiries into proposed expenditure by public bodies as follows:—Water Supply.—Swavesey Rural District Council, £1,680 (July 12); Kiveton Park Rural District Council, £13,566, including two reservoirs of 150,000 gallons each (July 15); Derby Borough Council, £1,376 (July 12). Sewerage, etc.—Birmingham City Council, £9,800 (July 13); Norman Cross Rural District for Overton Longville, no amount stated (July 13). Street improvements, etc.—Scarborough Borough Council, £2,625 (July 15); Egham Urban District Council, £1,000 (July 11); Plymouth Borough Council, no amount stated (July 13); Handsworth Urban District Coucil, £3,065 (July 12); Bushire County Council, £60,000 (July 14); Newcastle-upon-Tyne Borough Council, £1,100 (July 12); Birmingham City Council, £29,988 (July 13). Various.—Devonport Borough Council, £6,000, for gas undertaking (July 15); Stretford Urban District Council, £2,411, for Town's Yard, and £2,000 for plant at electricity generating station (July 13).

NEW BUILDINGS.

PROPOSED.

Blackpool.—The Building Plans Committee has approved the following plans:—Two houses, Saville Road; two semi-detached houses in St. Stephen's Avenue; seventeen houses in West Cliffe Drive; pair of houses in Highbury Avenue; two houses in Brooklyn Avenue; pair of houses in Norwood Avenue; two houses off Breck Road; 43 houses in Cunliffe Road; house and motor house in Manchester Road; two bungalows in 7th Avenue; one house in Stanhope Road; two houses in Brooklyn Avenue; detached house in Highbury Avenue; two semi-detached houses in Mere Road; two houses in Breck Road; two houses in Breck Road; two houses in Vernon Avenue; one house in Vernon Avenue; ten houses in Bela Grove; one house, Gynn Estate; three houses in Abbey Road; four houses in Lincoln Road; motor garage, Wilton Parade; 9-in. sewer, off Central Drive; alterations and additions, Central Road; motor house, Burlington Road; alterations at rear of Clifton Hotel.

Bournemouth.—The Town Council has decided to carry out an extension of the Undercliff Drive to Boscombe, and to provide sites for bathing stations and additional shelters on the East Cliff. The cost of the whole scheme will be about £45,000.

Bradford.—The Local Government Board has sanctioned a loan of £1,300 to the Bradford Education Department for the purchase of a site for day school extensions at Lidget Green.

Cockerham (Lancs).—It has been decided to rebuild the parish church of Cockerham, the nave and chancel of which were rebuilt as lately as 1814, and traces of an older building are still to be seen in the masonry on the east face of the tower. Even 25 years ago the building on inspection was declared to be unsafe. The fabric has gradually been deteriorating since then, and grave fears are now entertained as to its condition. The new church will cost £4,350, and provide accommodation for 370 persons.

Dundee.—The School Board has resolved to embark on a scheme for a new secondary school in the west end of Dundee at a cost of £30,000, and to convert the Harris Academy to a supplementary school.

Lancaster.—The Town Council has approved the following plans:—Bathroom at No. 31, West Road; one detached dwelling-house at Eden Park; two semi-detached dwelling-houses at Eden Park, off Scotforth Road; additions to outbuildings at Edenbreck Farm, Sunnyside Lane.

Margate.—At a recent meeting of the Town Council a resolution was unanimously agreed to "that the scheme for a proposed pavilion and winter garden on the Fort, in accordance with the model prepared by the borough surveyor, be approved, and that he be instructed to prepare the necessary plans, specifications, and estimate."

Pudsey.—The Corporation have adopted a scheme for the alteration and enlargement of the Town Hall, which occupies a central site in the town. Several architects have been asked to submit plans for doing this, and that of Messrs. Jowett, Kendall, and Sons, has been accepted. It is estimated that the entire cost of the Town Hall will not be more than £15,000, probably less.

IN PROGRESS AND COMPLETED.

Bargoed (Cardiff).—A new parish hall for Bargoed, in connection with St. Gwladys Church is in course of erection, at a cost of £1,300, and the foundation-stone was recently laid. The hall, which is in the Gothic style, is of brick, with Portland stone dressings, and will accommodate about 500 persons. Mr. G. Kenshole is the architect, and the contractor is Mr. James Morris, Cardiff.

Barnsley.—The foundation-stone has been laid of that portion of St. Peter's Church which comprises the nave, aisles, and west gallery. Accommodation will thus be provided for 800 people, when the work is completed, and an expenditure of about £6,000 will be involved. Mr. Temple Moore, F.R.I.B.A., London, is the architect, and the contractors are Messrs. Wright, of Leeds.

Birkby (Huddersfield).—The new Baptist Church, erected at a cost of about £5,000, has been opened and will provide seating accommodation for 400 persons. Messrs. Garside and Rennington, of Castleford and Pontefract, were the architects, the building being Late Gothic in design. The contractors were Messrs. T. Bottomley and Sons, Lindley, masons; Wood Bros., Huddersfield, internal joinery work; Milnes and Garside, Huddersfield, plumbers; Thealruld and Sons, Bradford, plasterers; T. B. Tunnicliffe and Son, Huddersfield, slaters; G. Moxon and Sons, painters; W. H. Heap and Son, heating engineers; T. Broadbent and Son, electric engineers.

Brooke (Norwich).—The foundation-stone has been laid of the new infants' school, which is in course of erection at a cost of £1,000, from the designs of Messrs. Lacey and Upcher, of Norwich, Mr. Redgrave being the contractor.

Felstead (Chelmsford).—The new "Crignon" hall in connection with Felstead school, has been opened by the Earl of Warwick, and is part of a scheme which involves an expenditure of £8,000. The building is in the Tudor style, 84ft. long by 32ft. in width, with oak panelling round the sides; at the back of the platform, and at one end, there is an oak gallery. The architects were Sir A. Blomfield and Sons, of London.

Harrogate.—The enlargement of the Royal Baths has been formally opened by the Mayor of Harrogate. About £230,000 have been spent on the wells and baths, and to bring them thoroughly up to date a further sum of £10,000 has been expended on the enlargement.

Sidcup (Kent).—A local syndicate has purchased the Bearsted Lodge and Linden Lodge site in the High Street, Sidcup, on which it is proposed to erect a public hall, from the designs of Mr. F. T. W. Goldsmith, F.R.I.B.A. The scheme includes a main hall capable of seating (including the gallery) nearly 700 people, and two smaller halls, which can, if necessary, be incorporated with the larger one. In front of the existing villas on the site which are to be structurally altered internally and included in the scheme, three shops are to be erected—two commodious corner premises, and a smaller one in between. This portion of the work is now proceeding, Messrs. W. F. Blay, of Dartford, being the contractors.

Southwell.—The new Trebeck Hall, situate in Halam Road, has been opened by the Bishop of Southwell, and is of brick covered with rough-cast, with a roof of red tiles. The hall is 60ft. long by 25ft. broad, providing accommodation for about 250 people, and was erected from the designs of Mr. W. D. Caroe, F.S.A., the builder being Mr. Lee, of Southwell.

York.—Mr. Rowntree, M.P., has opened the new premises of the City of York Central Mission in Swinegate, which consist of a large central hall 67ft. 6in. long by 47ft. wide, providing accommodation for about 1,000 persons. A lecture hall is provided on the ground floor to accommodate over 200 persons, and another hall on the floor above to accommodate a similar number, with four classrooms to accommodate 290. The architect was Mr. C. H. Channon, F.R.I.B.A., of Malton, and the building contractor Mr. C. Martin, of York.

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

JULY 18. ECCLES. Applications from architects residing in or having a permanent place of business in Manchester, Salford, or Eccles, willing to submit competitive designs for the extension of the Public Baths in Cromwell Road, Patricroft. Premiums, £20, £10, £5. Applications to be endorsed "Architect" to Edwin Parkes, Town Clerk, Town Hall, Eccles, not later than 10 a.m. on the 18th inst.

JULY 20 YSTRADGYNLAIS SEWERAGE SCHEME. **The Rural District Council will pay £20 for the most suitable scheme for sewering Ystradgynlais Lower. Particulars from Mr. T. Watkins, surveyor to the Council, Ystradgynlais.**

JULY 25. NEW ELEMENTARY SCHOOL, WINCHESTER. Designs are invited from Hampshire Architects for Elementary School Buildings to accommodate 330 children. Particulars of Thomas Holt, Town Clerk, Town Hall, Winchester.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. **Limited to Architects practising in Coventry. Particulars given in our issue of March 16th.**

SEPT. 5. THE QUEEN'S UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

NO DATE. ASHTON-ON-MERSEY. WESLEYAN SUNDAY SCHOOL. Limited to Architects practising within ten miles of Sale. Inquiries to Mr. J. O. Barrow, Barker's Lane, Ashton-on-Mersey.

COMING EVENTS.

Saturday, July 16.

NORTHERN ARCHITECTURAL ASSOCIATION.—Students' Sketching Club.

Tuesday, July 19.

ROYAL ARCHÆOLOGICAL INSTITUTE.—Annual Meeting at Oxford commences and continues till July 28th.

Wednesday, July 20.

NORTHERN ARCHITECTURAL ASSOCIATION.—Annual Excursion to Rievaulx and Byland Abbeys.

Monday, July 25th.

INSTITUTION OF MECHANICAL ENGINEERS.—Summer meeting commences at Birmingham and continues till Friday, July 29.

L.C.C. HALL FOUNDATION RELICS.

The remains of an ancient boat, which, as noticed in the account of the foundation works for the new London County Council Hall given in our issue of May 25th, p. 515 (when we were probably first to publish the announcement), have been discovered on the site of the new hall of the London County Council, have now been examined. The report of the Local Government, Records, and Museums Committee of the London County Council contains the following statement:—

In the course of excavations on the site of the new County Hall a discovery has been made, the importance of which, from an historical and archæological point of view, can hardly be over-estimated. The principal feature of the discovery consists of a Roman boat. As this is a unique example of such a find in Britain it is of greater interest even than the clinker-built boat of King Alfred's time, discovered at Walthamstow a few years ago, and of other Viking boats found in various parts of the Kingdom. A considerable portion of the vessel, which is of oak, is still covered, and until the earth is removed it will not be possible to ascertain its exact size, but, so far as can be judged, the vessel would seem to be about 50ft. long and 16ft. beam. Several articles were found in the boat, comprising some sherds of Roman pottery, bones, iron nails, glass gaming buttons, iron-studded soles of footwear, a coin of Tetricus in Gaul (268-273), a coin of Carausius in Britain (286-293), which is stated by the Keeper of Coins at the British Museum to be of date 290 or 291, and a coin of Allectus in Britain (293-296), and these objects are stated by the authorities of the Geological Museum to be the safest evidence as to the age of the boat, which may therefore be assigned to the end of the third or beginning of the fourth century A.D. Dr. C. H. Read, Keeper of the Department of British and Medieval Antiquities at the British Museum, who has examined the boat, points out that the discovery is of special interest and value as having been made on the Council's own property on what must have been the bank of the river in Roman times, and expresses the opinion that the vessel is capable of preservation.

We are strongly of opinion that this interesting and valuable relic of a former period of London history should be carefully preserved as an important item of London antiquities. The boat, if preserved in a suitable position for exhibition, will prove a valuable acquisition for London, and the example which the Council is enabled to set will probably not be lost upon other authorities.

We are advised that the relic should be housed in a building of the Dutch barn type, since the open air will be the best situation for it, and that a screen of wire-netting should be placed round the exhibit to prevent damage by relic hunters. We are of opinion that eventually the boat should be housed on a site in the vicinity of the new County Hall, but for the next few years a suitable site can be found for it, either in the open space behind the Horniman Museum, or in the Horniman gardens, where it will attract the attention of visitors and form an exhibit of the highest value.

We regret to see the announcement of the death of Mr. A. Hessell Tiltman, F.R.I.B.A., the well-known expert in the design of public baths and washhouses, etc.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor, will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned, but the enquiries sent must be on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Practical Notes.

"CALEDONIA" (AYR, N.B) writes: "Kindly let me know if 'Practical Notes for Architectural Draughtsmen,' which appeared in the Journal some time ago, can be obtained as a separate publication."

—The series extended over the following issues:—September 19th, 22nd, October 24th, November 7th, 21st, December, 12th, 1906, January 16th, February 6th, 20th, and March 27th, 1907, and has since been republished in the form of handsome portfolio, at 12s. nett, post free.

Sanitary Science Examination.

C. W. M. (LONDON, W.) writes: "I should be glad if you could recommend me suitable books for membership examination (sanitary science, etc.) of the Royal Sanitary Institute."

—There are, of course, a large number of text-books dealing with the subjects, but the following lists are those most frequently referred to by students reading in the Royal Sanitary Institute Library, and may be of some guidance to you:—Balfour Stewart's "Physics," Moore's "Sanitary Engineering," Wood's "Sanitary Engineering," Notter and Firth's "Hygiene," Parkes and Kenwood's "Hygiene," Roscoe's "Chemistry," Rideal's "Water Supply," Thresh's "Water Supply," Greenwell's and Curry's "Rural Water Supply," Fletcher's "Architectural Hygiene," Herring-Shaw's "Elementary Science applied to Sanitary and Plumber's Work."

R. S. I.

Practising Within the Twenty-mile Radius.

S. S. (OXFORD) writes: "About 19 years ago I paid an architect £500 for a term of partnership for 10 years, and he persuaded me to sign a deed of partnership with a radius clause of 20 miles from his town in event of dissolution. I objected, but his reply was: 'You might quarrel with me after, say, 2 years, start next door, and take half my practice.' As I did not mean ever to touch his clients I signed the deed. He died three years ago, and his son has taken on his practice, and, because I happen to be doing work for an old family friend within 10 miles of his town, writes that I have no right to do so, as at end of the partnership deed it has the usual clause that the above shall be binding on the heir's assignees administrating it. It would be a farce if this radius clause were to continue on after the death of the one I made it with, and it was never intended, otherwise it would apply to children of either partner yet unborn. If I really am tied by the 20 miles, it would be unfair restriction of trade, as this radius comes within 3 miles of the town where I started with the consent of my late partner, and I was still his partner for two years after I came here. He would never have objected to my doing work for my friends anywhere."

—The question propounded is not easy to answer. It is clear, of course, that if the original partner was still living he could restrain our correspondent from practising within the radius, and the limit of twenty miles does not appear to be unreasonable. The fact that our correspondent did not *intend* to bind himself not to practise in competition with assignees, etc., does not affect the legal position. The only chance of escape is to contend that in point of fact the covenant was personal to the two partners. The law is thus stated in Mathews on Restraint of Trade, p. 125: "A covenant not to set up business in competition with the covenantee, not limited as to time, is *primâ facie* understood to remain in operation during the whole life of the covenantor, and is not limited in its duration to the life of the covenantee, or to the period during which he carries on the trade or business for the protection of which the covenant was entered into." But it may be personal to the continuing partners, and, if so, it cannot be enforced by their assignees. For instance, in *Davies v. Davies*, 36 ch. D. 359, a covenant by a retiring partner "not to trade, act, or deal in any way so as directly or indirectly to affect the continuing partners" was held to be personal to the continuing partners, so that it could not be sued upon by their assignees. In that case, however, the words administrators or assigns do not appear to have been inserted in the covenant. It would be wise for our correspondent to see his solicitor before he ventures to practise within the twenty-mile radius.

B.

Government Surveyor.

T. M. G. (SOUTHPORT) writes: "What is the procedure to get under Government as a surveyor? Please say what examinations have to be passed, what salaries are paid, and any other particulars. Can architects get under Government? If so, please give particulars. There are a lot of vacancies to be filled shortly."

—The Government vacancies which are now occurring are in the Valuation Department of the Inland Revenue Office, and you can obtain particulars by application to the Chief Valuer at Somerset House, London, W.C. I believe that all the London appointments are already filled, but that there will probably be a great many country valuers selected shortly. The qualifications for these posts are, of course, those which show knowledge and experience in valuation work; and probably the best credential one can show in this respect is membership (by examination) of the Surveyors' Institution, or of the Auctioneers' Institute.

F. S. I.

Refusal of Council to Pass Plans.

W. R. (GLOUCESTER) writes: "The owner of the premises marked 'X' on the accompanying plan [not reproduced] desires to make use of the existing yard, at the rear of which is a better business thoroughfare, by erecting a shop with a flat roof, and forming existing shop into a lock-up one. The width of the road in front is about 30ft., beyond which is a green in front of a public building (giving a total of about 100ft. of open space), whilst at the rear the street is about 36ft. wide. In the basement, 8ft. high, of the existing shop would be a w.c. for use of the lock-up shop, and also a coal and other store for the new shop, under which would be a shallow store, about 6ft. high, all properly lighted and ventilated. On the first floor would be the living-room, kitchen-scullery, and larder, with two bedrooms, bathroom, and w.c. above. All the requirements of the by-laws are dealt with except as to the air space at rear, about which the surveyor raises no serious objection (how can he when the flat roof of the new shop gives more space than in the present yard, the air space for the domestic part now being taken on the first-floor level, and being at the roof level of the new shop?). The council object to the plans, but give no reason, nor state which by-law, if any, they contravene. The only reason (unofficially given) is that the servant will have to live in the basement. This is absurd. They at first refused to return the plans, but have done so, as they could find no by-law which entitled them to retain them. Must the council state reasons for disapproving plans, naming the by-laws contravened, and can they dictate the manner in which the premises are to be used? Can the owner proceed with the work, and risk any action taken by the council under the above conditions, i.e., no reason given for disapproving the plans? What action can the council take if he does proceed, under the above conditions?"

—Not knowing the powers under which the council make the by-laws, it is impossible to say whether this particular by-law can be enforced or not, and without seeing the by-laws themselves it is difficult to say whether there has been a breach. Sufficient air space in rooms which may be used as dwelling rooms is often provided for. While a council is generally under no obligation to state reasons for refusing to pass by-laws, their refusal to do so is most unreasonable. If there was a prosecution for failure to comply with by-laws, it is very likely that, even if the council were successful, it would be deprived of costs if the defendant were not told which by-law he infringed. A solicitor should be consulted. B.

Books for F.S.I. Final Examination.

"SUBSCRIBER" (HULL) writes: "I should be glad if you would inform me of the best books to obtain for the F.S.I. final exam. in roadmaking, building estates (development of), laws of arbitrations, iron and timber roofs, Public Health Acts."

—The text books which we recommend for the F.S.I. examination in the following subjects are: Road Making by Law, Clarke, and Wallis-Taylor, published by Crosby Lockwood, price 6s. 6d.; Building Estates by Maitland, published by Crosby Lockwood, price 1s. 6d.; Arbitrations and Awards by Soper, published by the Estates Gazette, 6s.; Stratton's Public Health Acts, published by Knight, price 7s. 6d.; Roofs, Mitchell's Building Construction, published by Batsford, vols. 1 and 2, price 8s. 6d. the two volumes. P. B. P.

Composition of Concrete.

L. L. J. (CARNARVON) writes: "We are reconstructing a small water reservoir on a hillside. We have taken up the old floor, and have excavated to hard ground or rock throughout, and have thoroughly drained below the proposed new floor. A very substantial pavement of granite about 1 foot deep, well packed and laid, has been put down, some of the slabs being over eight feet super, and it is proposed to finish with an 8-in. thickness of concrete, in which will be embedded ½-in. round bar iron, 2ft. apart each way. The depth of the reservoir varies from 3ft. to a maximum of 9ft. We have specified 6 to 1 concrete, composed of 2 parts 1½-in. broken granite, 2 parts screened ¾-in. and ½-in. granite, 2 parts gravel similar to sample, and 1 part White's Portland cement. A person interested says that the concrete as specified will be weak and porous, no matter how well laid and scoured off. Will you kindly express your opinion on the matter and suggest the best composition and proportion of materials?"

—Though the proportions you proposed using for the concrete would probably be quite sufficient, we think it best to make doubly sure by proportioning your ingredients 1 part 1½-in. broken granite (substitute 1-in. if easily obtainable), 1½ parts screened ¾-in. and ½-in. granite, 2 parts gravel similar to sample sent, and 1 part best Portland cement finely ground. The concrete should be most carefully and thoroughly mixed, first by mixing the cement with the sand or gravel dry, then wetting same and turn again, and finally the stones added and the whole turned again three times. The mixture should not have too much water with it, but should be wet enough to just show the water on the surface when well rammed in position, and to enable the surface to be ruled off. We think it would be best to space the rods closer together, so as to make the work more homogeneous and better resist temperature stresses, and we suggest the use of ⅜-in. diameter round steel rods at 12ins. pitch both ways in as long lengths as can be obtained, and joints overlapped 18ins. The work should be allowed to set for about a month before use, and kept constantly damp up to time of letting the water in reservoir, so as to obviate possible trouble with contraction of the cement concrete setting in dry air. D.

Volume and Speed of Air for Ventilation.

"PERPLEXED" (HEATON CHAPEL) writes: "I was desirous to obtain some details with respect to the ventilation of buildings, and referred to the tables of areas and velocities given in "Specifications." In calculating from these tables I find apparent anomalies of which I give examples, and shall be obliged if you will kindly state whether this system of calculation is correct, and what provision it is necessary to make to meet the requirements of such rooms as are mentioned below. The superficial area for a scholar is given as 10ft. and the cubic space as 200ft., which for ordinary classrooms would mean a height of 20ft., which is not practicable. I have assumed that the height of the rooms is 13ft., and that the air shall be changed four times an hour. Take a room for 40 children at 10 super ft. for each = 400 super ft. 400ft. × 13ft. high = 5,200 cubic ft. To change the air four times an hours means the moving of 20,800 cubic ft. 20,800 cubic ft. per hour = 5 7-9 ft. per second velocity = four miles per hour nearly. By the same cal-culation: In a room for 60 children the air to be moved would be 31,200 cubic ft., equal to 8⅔ per second; velocity 5.9 miles per hour. In a room for 100 children (height 13ft.) the air to be moved would be 52,000 cubic ft., equal to 14½ft. per second; velocity 9.85 miles per hour. It would appear, if these calculations are correct, that the larger the room the fewer times the air must be changed, as with a velocity of nearly 10 miles an hour the draught would be considerable. I have heard of arrangements for the admission of fresh air by which it is claimed the atmosphere of a room can be changed from 15 to 25 times an hour, which appears to be absurd. The theoretical minimum of air for each person in a sedentary occupation is given as 3,600 cubic ft. per hour, or 1 cubic ft. per second. In a room for 40 scholars the theoretical minimum would be 144,000 cubic ft., or about seven times the quantity calculated for above."

—The volume of air per person is the most accurate way of stating the supply of air; and the changing of the air in the room so many times an hour is only used to give an idea of the bulk of air to be removed. I think you have made a mistake that many people make; and this mistake is due to the cubic foot being too small a measure. As a head, a skull will go comfortably into a cubic foot, and as breathing is done at the head the expression of so many cubic feet per head gives one the idea that the air supply is concentrated at the head of the person. This is not the case; the air is spread all over and around. A man or woman can stand on a square yard of ground, and occupies about two cubic yards of space. In the open air a wind of five miles an hour will supply to that person 17,600 cubic yards of air, or more than 237,000 cubic ft. A child occupies about three-quarters of a yard square of ground, and, say, 1.4 yard of height, equal to one cubic yard of space. A five-mile wind will blow nearly 120,000 cubic ft. of air over that child in one hour, of which the child would breathe a very small portion; the rest would remove perspiration. I am unable to fathom your reason for dividing (in your first case a schoolroom for 40 children) 20,800 cubic ft. of air (four changes per hour) by 3,600. If you divide it by 40 (the number of children) you find that each child is allowed 520 cubic feet, or 19.2 cubic yards of air in an hour. If you assume a speed of five miles an hour in the air-outlet shaft (nearly 150 yards a minute) you will need for your 40 children classroom and 20,800 cubic ft. or air, better say 21,600ft., which is 20 cubic yards to each child, in an hour, an outlet flue area of 0.81 sq. ft. By making the inlet to the flue twice the area of the flue, the speed of air current at entrance is reduced to half that in the flue, i.e., 2½ miles an hour. At the temperature usual this would not be felt as a draught. The figure 3,600 can be taken to mean either one cubic foot bulk, or one lineal foot of speed, per second throughout one hour; but you do not say where it is to be measured, and it is not to be measured only at the child's head. As to the 20ft. height of room, whilst such rooms are rare, yet many schools with all rooms on the ground floor have ceiling heights of from 14 to 18ft. across three-fifths of their width, as gables are built for the windows. Greater heights may be customary in the future. INGENIOR.

SOCIETIES' REPORTS.

Edinburgh Architectural Association.

For the annual excursion of the Edinburgh Architectural Association, a large party of the members and friends visited Kelso. Mr. H. J. Blanc, R.S.A., acted as leader of the company. Arriving in Kelso by the midday train, the party were conducted to the ancient abbey, the architectural features of which were explained by Mr. Blanc, who also touched upon the historical associations of the ruined pile. Kelso Abbey was founded by King David I. It was built to accommodate a colony of Tironensian monks founded at Selkirk in 1113, and the colony was transferred to Kelso in 1128, when the Abbey received its first confirmation from Pope Innocent II. Thereafter luncheon was partaken of at the Queen's Head Hotel, and then the company drove to Floors Castle, the seat of the Duchess of Roxburghe. They were shown through some of the principal apartments of the mansion, and they also visited the gardens and greenhouses. Before leaving for Edinburgh, the visitors enjoyed a short walk by the side of the Tweed, where they inspected the bridge designed by Rennie, the architect of the Waterloo Bridge, London.

Manchester Society of Architects.

The third Saturday visit of the summer session of Manchester Society of Architects was to Shrewsbury, under the leadership of Mr. H. B. Laycock. In a single day, one can do little more than glance at the multitude of interesting buildings in Shrewsbury. If one is to pay anything more than passing attention to the wealth of Georgian work, one must leave the churches for another day (unless one is content with mere jottings), for the splendid Norman and later work at Holy Cross Abbey and St. Mary's Church will absorb all the time. The Georgian houses in Belmont were very much admired, and there were, besides, many fine half-timber houses of earlier date, of which the New Ship Inn is a delightful example.—A large party of members have visited Mr. Temple Moore's recently built church of St. Anne at Royton, near Oldham, the Vicar, the Rev. J. T. Ormerod, very courteously conducting the party over the building. A timber barrel roof runs right through the nave and chancel, over an arcade of four great arches with wide soffits and square arrises, and a narrower transept arch on each side. Passage aisles are cut through the piers suppporting the arcade, and the outer aisle walls contain traceried windows, there being no clerestory.

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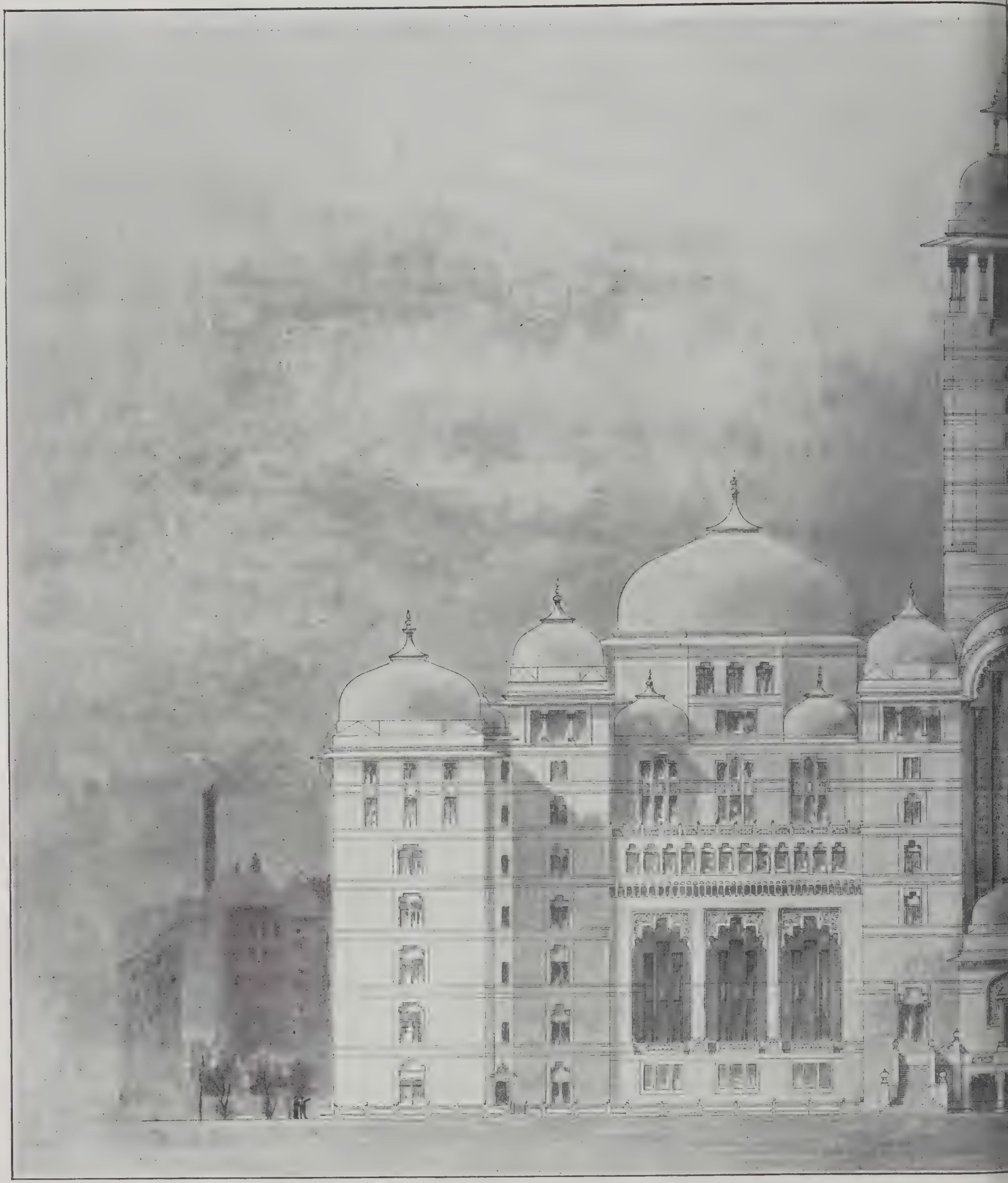
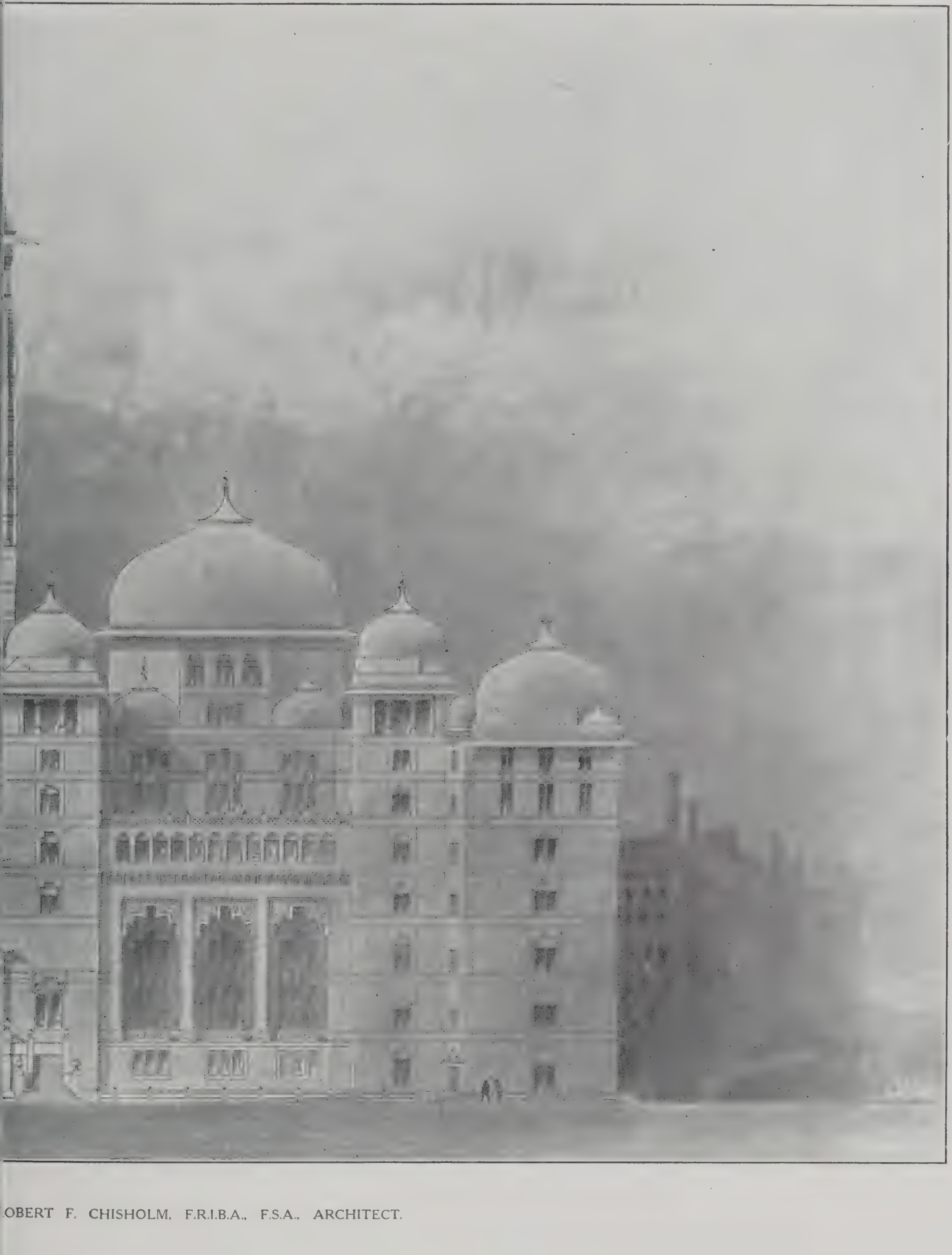


DESIGN FOR THE PROPOSED INDIA MUSEUM IN LON



OBERT F. CHISHOLM, F.R.I.B.A., F.S.A., ARCHITECT.

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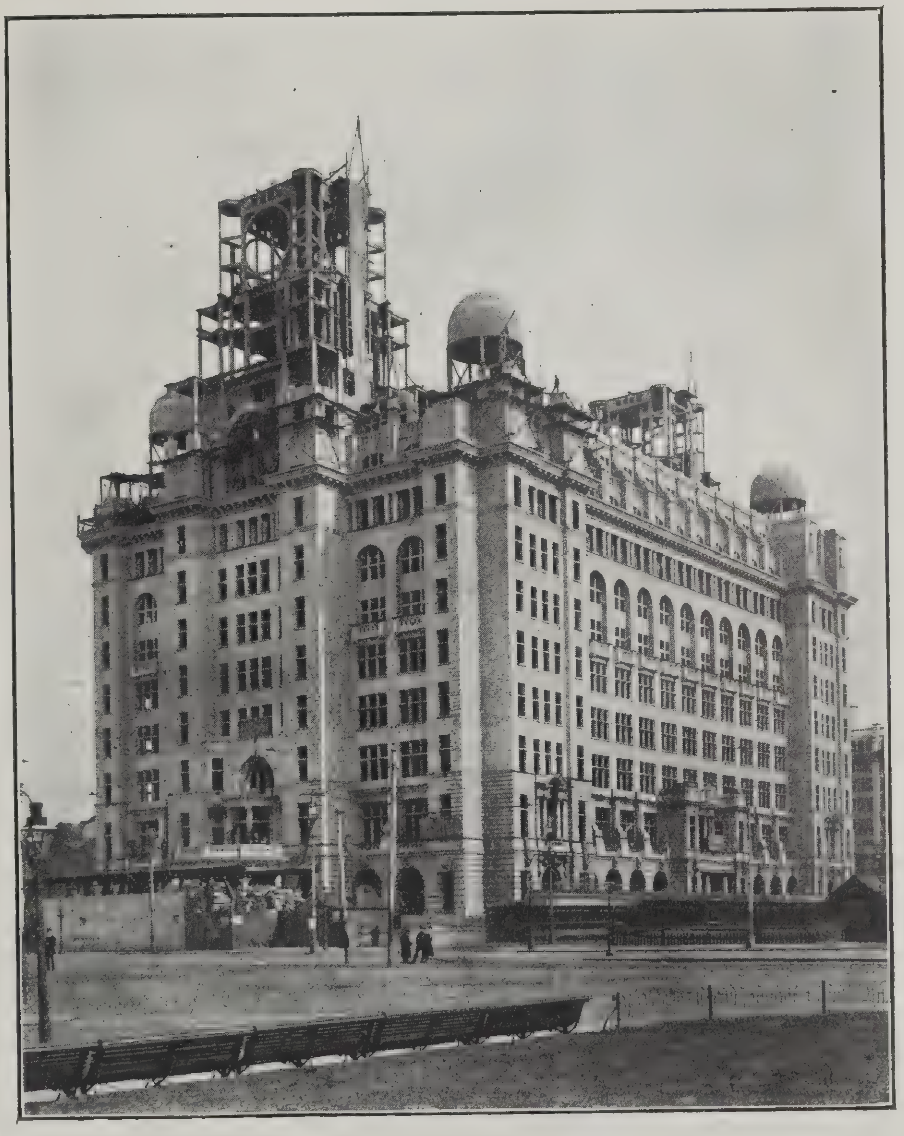
THE ARCHITECTS' & BUILDERS' JOURNAL

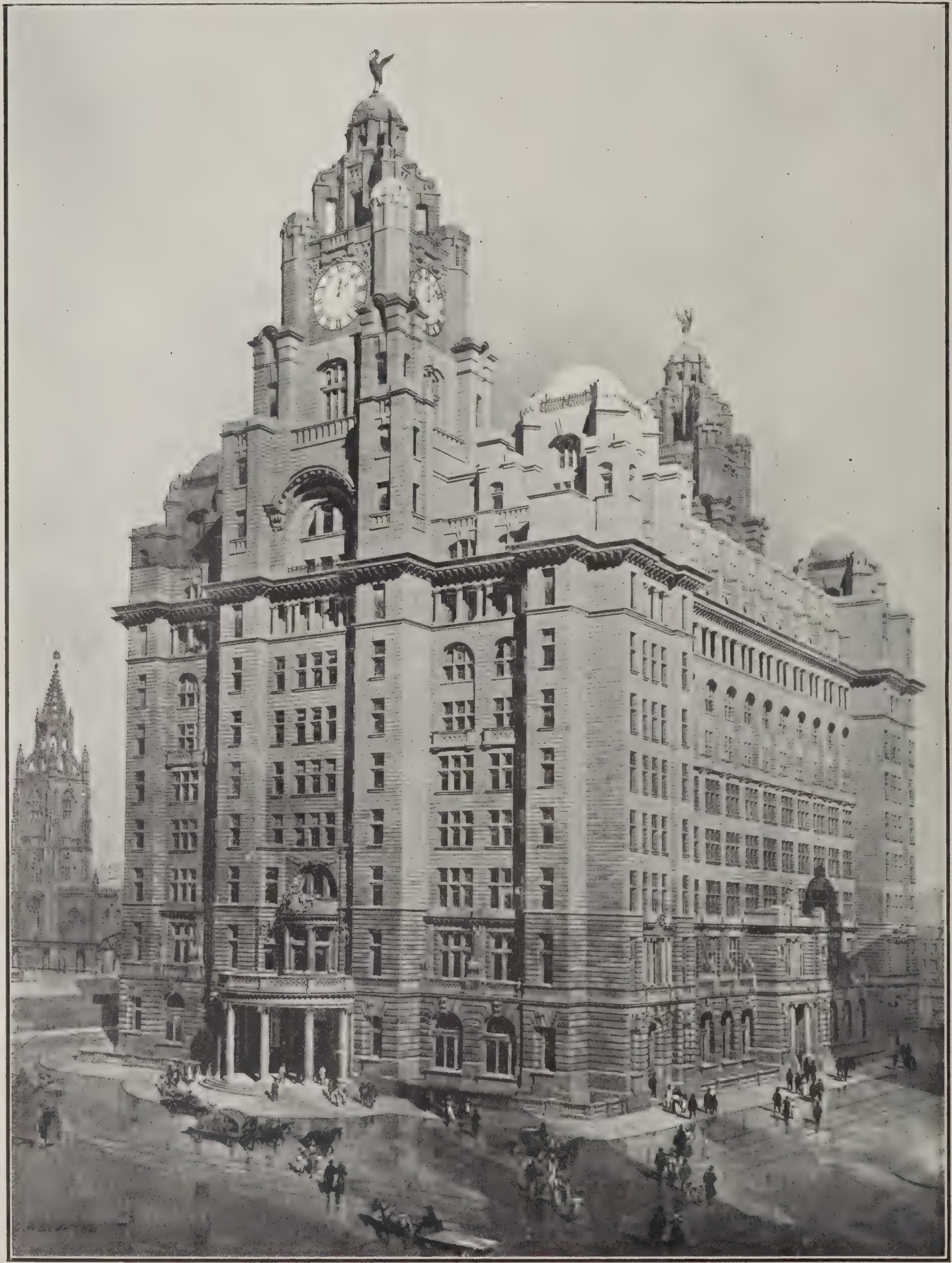
WEDNESDAY,
JULY 20th, 1910.

Volume XXXII. No. 807.



The building as it appeared on April 14th, 1910, showing the progress of the granite curtain walls.
(See article on page 72.)

THE ROYAL LIVER BUILDING, LIVERPOOL. W. AUBREY THOMAS, ARCHITECT.



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See Article on page 72.)

THE ARCHITECTS' &
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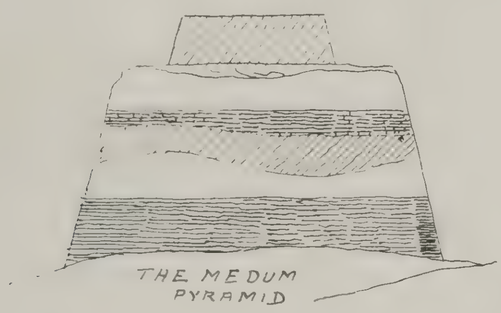
JULY 20th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 807.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

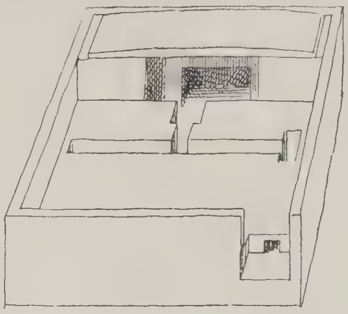
Things of Egypt.

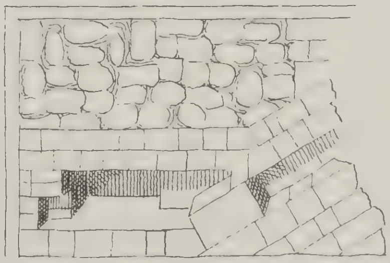
THERE are two exhibitions open at present of relics of ancient Egyptian work; that of Professor Flinders Petrie at University College, and that of the Institute of Archæology of the University of Liverpool, at the rooms of the Society of Antiquaries. The first-named represents the discoveries of Professor Petrie and his students during the past year, in the neighbourhood of Memphis and Medum, some forty miles up the Nile from Cairo; the exhibition at the Society of Antiquaries illustrates work of a later date, found at Meroë, some nine hundred miles south of Cairo.

As a French architectural historian has observed, in ascending the Nile we descend the stream of time, so far at least as the architectural monuments are concerned. Medum is one of the oldest Egyptian sites, and the tombs which have recently been explored by Professor Petrie are adjoining and more or less related, topographically, to the Medum Pyramid. About this pyramid, the centre of the exploring ground, a word may be said. It is not nearly so familiar in people's knowledge as the Great Pyramid, but it is a work of greater antiquity, and is probably the oldest pyramid in existence except that of Sakkâra, near Memphis. Both the Sakkâra and Medum Pyramids are of peculiar construction. That of Sakkâra is built in a stepped form, in four or five stages, and was probably intended to be seen as such. But the construction of the pyramid at Medum is more peculiar; it has been built on successive thicknesses, added from time to time in successive layers outside of an initial pyramid a great deal smaller. It now presents the appearance shown in the accompanying sketch, the lower portion at the sides representing the latest layer added, and the higher part an older portion in the centre. This construction so much impressed Lepsius and some other Egyptologists, that they adopted the theory that all the pyramids were built on this principle; that a small pyramid was built at once for a new king, so that if he died prematurely he should at least have his pyramid-tomb ready; and that as his reign progressed, new layers were added to it. As far as the Great Pyramid is concerned, however, this conclusion is falsified by the continuous nature of the sloping passages from the exterior to the centre, which could hardly have been formed in that way except on a complete plan carried out from the first. But the Medum pyramid is a very interesting curiosity, at all events, in early pyramid building.


THE MEDUM PYRAMID

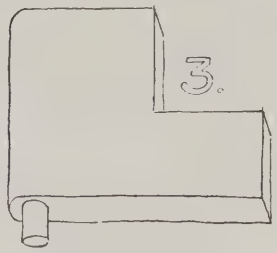
The objects exhibited have less of special architectural interest than in some former years. The largest section of them consists of wall-paintings or wall-sculptures, whichever we are to call them. There are a number of figure subjects, men and animals, which are formed by first incising the stone to the depth of about half an inch, in the shape of the figure, and then filling it in with a red composition of which the surface is worked up to a slight relief above the face of the stone. Some of the figures thus formed are still complete; in others the filling-in composition has dropped out, enabling one to see the whole process. But of the tombs around the pyramid, models of two are given. Fig. 1 is a sketch of one of these models, that of the largest one, which has been numbered "17," and is built of immense blocks of limestone, some of the roofing slabs being 40 tons in weight. The partially unroofed model enables us to see the plan of the tomb, in which, as usual, in these early Egyptian tombs, the object seems to have been to keep the actual burial recess as remote and difficult of access as possible. Fig. 2 is a sketch of the section model of another tomb, showing the sloping passage down into it, and the manner in which this passage was blocked by the insertion of a great squared block of stone.


1. MODEL OF A TOMB


2. SECTION OF A TOMB
SHEWING CLOSING BLOCK

A great number of vases, ornaments, small figures, and pieces of painted pottery are exhibited. Among the things discovered at or near Memphis is the bronze angle-piece of a

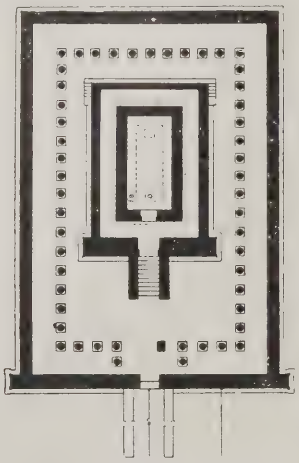
3. BRONZE ANGLE OF DOOR



4. GOLD EAR RING – PTOLEMAIC PERIOD

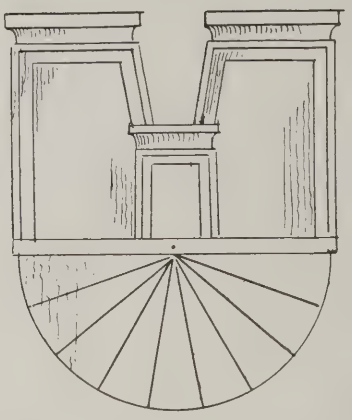
door (Fig. 3), with the tenon at the bottom of it which was sunk into the sill, and on which the door turned as on a hinge. This and many of the other articles from Memphis appear to be from tombs of a comparatively late date. There are three or four fine gold ear-rings of the Ptolemaic period (Fig. 4), which look ponderous in outward shape, but, as in Greek work, the metal is beaten out as thin as paper. Both the Greeks and the Egyptians knew better than to treat gold as bullion, as if it were of value for its mass and weight. That perverted taste was left for the modern jeweller.

Meroë, in Egyptian chronology, is comparatively modern; nothing seems to date earlier than 600 B.C., and much of the work recovered is a good deal later than that. But the remains of some interesting small temples have been found there. We reproduce from the illustrated description that of the one called "Temple of the Sun," and believed to date from the third century B.C. The temple was surrounded by a *temenos* wall (not given in the illustration). The plan seems to combine in a rather curious way the characteristics of the Egyptian and of the Greek temple plan. We have the small, dark central cell of the Egyptian temple, while the surrounding colonnade has more the spacing and proportions of the peristyle of a Greek temple.



PLAN OF SUN TEMPLE. MEROË

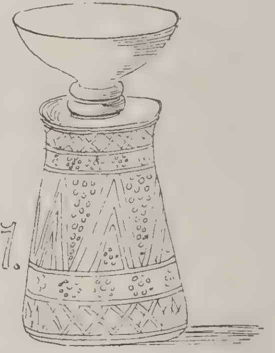
The collection of objects found includes a great number of fine earthenware jars of large size and in perfect condition; but they all resemble each other very much, and there is nothing of special interest in their form. These large jars are all perfectly unornamented. We have sketched two or three of the objects which have some special interest. One of these is very curious, as showing how old is the taste for using imitations of architecture on a small scale in decorative work. This is a movable sundial (Fig. 5), for hanging up, carved in wood in the likeness of the pylons and entrance of an Egyptian temple, with the hours marked off on the semicircular piece at the bottom. It is a small thing, not much larger than the cut here given, and is complete except for a slight breakage at the corner of one of the mimic pylons. The gnomon, of course, would have been fixed in the centre of the bottom bar, above the semicircle. Fig. 6 is a sketch of one of the examples of a thin delicate type of ware, which has rather a Roman character, and is believed to have been due to Roman influence. It dates, or is supposed to date, from about 100 A.D. Fig. 7 is a sketch of a vase from among a set of examples of older pottery of a rougher type, ascribed to about 400 B.C. It is of interest from its peculiar design, which reminds one of the metal spouts used in modern days for decanting wine. It is all in one piece, however, and there seems no practical reason for its peculiar shape. There are several other examples of the same type. The ornament, very roughly drawn, is in white bars and spots on a red ground.



5. MOVEABLE SUNDIAL IN WOOD.

6.

7.



Though there is not much in these two collections which is directly architectural, there is a great deal of interesting detail, bringing us into touch with the habits and handiwork of craftsmen of a far distant period.

The Disfigurement of Paris.

THE one-time familiar and hackneyed old tag, "They do these things much better in France," seems to have lost not only its vogue, but its justification. In Paris, at any rate, the superior deftness and dexterity with which public improvements were effected without interference with the public convenience, or disturbing the marvellous *netteté* for which the people are distinguished, seems for the moment to have forsaken them to such an extent that the "Disfigurement of Paris" is a frequent heading to indignant complaints from visitors to the once delectable city as well as from inhabitants, and the agitation has reached its climax in a "Times" leading article. The case, as stated by the writer of that article, is that the Place de l'Opéra has long been defaced, and partly blocked, by unsightly erections concealing the operations of a tube railway company. "The point is that the delay in completing the work has passed all bounds." The plans have been varied while the work was in progress, so that three electric railways are now being made instead of the one originally intended; and disputes and labour troubles have greatly increased the delay. But, allowing for all untoward circumstances, it is contended that the care of the city has sadly slackened since the brave days of Baron Haussmann, when M. Alphand, "a man with a real genius for the beautifying of open spaces," was in power. Our contemporary thinks it curious that while Paris is retrograde, London has gone forward, and he dwells "with some satisfaction on the great skill, and the very little disturbance of traffic," with which, in our case, the tube railways have been constructed.

The Hellenic Society.

THE annual meeting of the Hellenic Society was held at the rooms of the Society of Antiquaries, on Tuesday, the 28th ult., Professor Percy Gardner in the chair. The annual report, which was in print, but of which extracts were read by the Hon. Secretary, Mr. G. A. Macmillan, was formally adopted. The principal points touched on were the formation of the Society's new premises at 19, Bloomsbury Square, where the rearrangement and cataloguing of the library is in active progress; and the formation of the new Society for the Promotion of Roman Studies, which was originated at the suggestion of the Hellenic Society, after taking the opinion by circular of its members, from whom between four hundred and five hundred favourable answers were received. Provision had been made for the conduct of the periodicals controlled by the bodies interested as friendly and allied publications normally occupying distinct provisions of learning; for reciprocity with the Hellenic Society in respect of library, collection of lantern-slides, and the like; and for the establishment of such further co-operation between the Societies as may seem desirable and possible. Professor Gardner, in a short address, mentioned that it had been considered whether the new scheme for Roman studies should be taken up by the Hellenic Society itself, but it was felt that the sphere of Roman study was so extensive that it could not be taken up by the Hellenic Society without an entire departure from its original objects and constitution. He also referred to the regrettable delay in the publication of the official report of the results of the French excavations at Delphi. The delay, we may say, is only in accordance with the common practice of French archæologists and official departments in these matters, who seem to regard punctuality in publication as of no consequence. After the chairman's address, Mr. A. H. Smith, keeper of Greek and Roman antiquities at the British Museum, gave an explanation, with the help of lantern illustrations, of the rearrangement of the Parthenon pediment sculptures at the British Museum, by which the torso called Niké, or Isis, before classed as part of the east pediment, was now placed among the sculptures of the west pediment, to which, owing to fresh evidence, it was now believed to belong.

Fair Wages and Fair Contracts—Important Movement.

FOR a long time past the operative unions have been pressing upon the Government, and upon municipal and other public authorities, the need there is for "fair wage clauses" to be inserted in contracts, involving the payment of wages to operatives, in order to prevent the importation of work from underpaid districts, and with such success that their attention is now turning in other directions. Through the National Board of Conciliation a joint committee of employers and operatives has been appointed to study the subject, and suggest measures of relief. The operatives claim that the better class of employers, who pay fair wages, and have their work executed under fair conditions, are unfairly handicapped owing to the competition of work from districts where low wages and unfair conditions still exist. It is alleged, and instances are quoted, that the local conditions in these underpaid districts foster the growth of so-called specialist firms who tout for work from architects, and that their success is indicated by the ever-growing practice of inserting provisional sums for internal and other finishings in building contracts. When it is realised that the wage rates for skilled labour in fair wage districts range 50 per cent. to 75 per cent. above those in the lowest paid districts, it is obvious that there may be a good deal of truth in the statements of the operatives. It is also alleged that there is arising a class of contractors who sub-let every branch, and do not hesitate to employ sub-contractors from districts where sweated rates prevail, and these statements again are supported by actual instances. The State and public bodies having set an example by adopting the principle of providing in the conditions of contract that work, supplied to or for them, shall be executed under fair conditions, and at fair rates of pay, wherever it comes from, it is urged that private persons might now be asked to follow their example. When the committee completes its investigation, we hope to return to this question, and to give the suggestions which may be made for remedying what may well be properly remediable abuses of unrestricted competition. Civilised nations have come to realise that they cannot permit the unrestricted ingress of low-priced labour accustomed to exist under a low standard of life, lest their civilisation should have its standard levelled down instead of up. It would seem to be equally necessary for such nations to see that a levelling down process is not permitted to be set up from within themselves by this very trouble of the importation of work from underpaid districts. It may be mentioned that in South Africa employers themselves are insisting upon the adoption of fair-wage clauses in building contracts wherever practicable.

Operative Plumbers and the Heating Engineers.

THE Sheffield Conference between plumbers and heating engineers, as reported in this journal a week or two ago, was held with the object of determining whether or not the plumbers were, as they claimed, exclusively entitled to lay all pipes and fix all sanitary appliances and fittings in buildings. This claim has been made so often, and with so little show of reason, that architects and builders are becoming rather tired of it, especially because the refusal to recognise it has given rise to many strikes on the part of the dissatisfied operatives. In order to substantiate their claim to the exclusive right to such work, the plumbers must set out a much more cogent case than that which they presented at Sheffield, where the heating engineers seemed to have much the better of the arguments. Certainly it would require very strong data, and very skilful arguing, to substantiate so bold a claim as that the plumbers alone are entitled to do work that, on the face of it, might, with at least equal propriety, be claimed by the heating engineers; who do not, however, retaliate by claiming a monopoly of such work, nor do they dispute the plumbers' claim to the monopoly of leadwork. With regard to the engineers, indeed, it may be said that theirs is the magnanimity of the strong, for at Sheffield recently, as at Leicester in 1909, they not only made out an almost unanswerable case, but they stated it with admirable good temper and moderation. They complained, however, of being repeatedly compelled to defend their interests in a matter which they had some reason to regard as settled, and they urged that the guerilla warfare to which they were being subjected should be brought to an end, and the dispute settled once for all on a national basis. Architects and builders will, we feel sure, heartily support this plea; for the aggressiveness of the plumbers—their inconvenient habit of striking on this perpetual pretext—has become a perennial nuisance, and is doing no good to the plumbers themselves. Surely they must see that mere assertion of prescriptive right will not serve them; the work they claim will naturally gravitate towards those who are considered to be most competent to do it. It is surely kindest to them to say bluntly that this is the fact that they have to face; and we cannot help thinking that there are better ways of meeting it than any that they have hitherto adopted.

NOTES AND NEWS.

The Evolution of Hospital Design.

This is the title of a pamphlet by Mr. Keith D. Young,* a reprint of a paper read by him at the Hospital Officers' Association in March last. A considerable portion of it is taken up with a sketch of ancient records as to hospitals, which, in some form or other, were recognised at an earlier date than is commonly supposed. There were the *Iatreia* of ancient Greece, in some cases private hospitals, in some cases the property of the town, established in houses carefully constructed to admit abundance of light and air, while protected from sun and wind. It should seem therefore that the Greeks understood the value of thorough ventilation in a hospital better than it has been understood in some very recent times. Mr. Young adduces an instance in the siege of Paris last century, when two buildings, a church and a slaughter-house, were utilised as supplementary hospitals. The church was by much the more spacious, allowing far more cubic contents per bed, but hospital disease prevailed to a terrible extent, while the occupants of the slaughter-house did well. The walls of the slaughter-house were formed of open louvres, so that it was thoroughly ventilated. As Mr. Young remarks, there could not be a better instance of the futility of relying on cubic space alone, without regard to other conditions. The Mahommedan rulers seem to have attached much importance to hospitals, as there were forty in Cordova under their rule; and Bagdad, in the eighth century, had both hospitals and a medical school. The mediæval hospitals of France and England, a plan of one of which, at Tonnerre, is given, were in the nature of hotels as well as hospitals; the hospital portions were arranged and planned without the slightest regard to what would now be considered necessary conditions of health. In the eighteenth century very large wards were the dominant idea, and John Howard notes in one instance (at Valetta) the noisome state of the atmosphere in the ward. It is not so very long since, however, that Netley Hospital was built with large wards and long continuous corridors, in spite of the protests of the few who then knew better. The disconnected ward system was inaugurated by the Herbert Military Hospital at Woolwich, after the Crimean war. Mr. Young traces the recent progress of, and improvements in, this system. For the one-storey ward Mr. Young has nothing to say; he regards it as costly, with no corresponding advantage. It is costly, no doubt, but we do not feel sure that it is not the ideal system after all; it allows complete circulation of air all round every ward. We observe that while Mr. Young speaks so strongly as to ventilation being all-important, he does not express any opinion as to the principle and method of ventilation which is to be preferred; but this is surely a very important point.

Architectural Discoveries at Glastonbury.

Some very interesting discoveries are recorded from Glastonbury, where Mr. Bligh Bond, F.R.I.B.A., diocesan architect for Bath and Wells, representing the Somerset Archæological Society, has been for some time engaged in superintending excavations that have yielded an unusually prolific reward for the labour, many of the results being of architectural as well as of archæological value. A trench cut southwards in continuation of the line of the south transept has laid bare nearly the whole of the wall which bounded the cloister on the east side, and much of it is "in an unexpectedly good state." Of a crypt, which is in fact the sub-vault of the refectory, the entire east wall of the vault has been exposed, and is in some places six or seven feet high. The springers of three vaulting ribs have been assumed to indicate with tolerable certainty the form of the original roof; and all down the centre of the vault, from east to west, a series of moulded bases which once supported the central columns carrying the vaulted roof and floor of the refectory above have been revealed, four of them having been exposed, while four or five others, it is anticipated, will eventually be uncovered. Of the architectural detail, enough remains to afford a fair idea of the date of the various parts of the fabric. Some of the detail is Early English, as, for instance, the responds, which take the form of small double shafts engaged with the masonry of the walls of the larger vault. The isolated bases of the central piers, however, which are situated at intervals of about 11ft. 6in. down the centre of the area, look like fourteenth-century work, and the detail of the lesser vault at the east end is also mainly of fourteenth-century character, although some of it apparently dates from the end of the twelfth century. Fragments of window tracery, wall-panelling, and cornice work (some of the last-named being enriched with a very beautiful ornament of Tudor roses connected with a winding stem) perhaps came from the cloisters, which were built about the year 1400. Abundant remains of encaustic tiles and of stained glass have also been discovered, as well as some mutilated statuary. A full account of the work appears in the "Times" of July 13th.

The National Federation Summer Meetings.

The National Federation of Building Trades Employers of Great Britain and Ireland holds its summer meetings on July 26th and 27th, at Chester, and on the 28th there will probably be an excursion to some place in North Wales. The Council meeting of the Federation will be held on Tuesday, the 26th, at 2.30 p.m., in the Assembly Room of the Town Hall, kindly lent by the Mayor of Chester. The general meeting will be held at the same place on the following day at 10 a.m., when the Mayor (Alderman D. L. Hewitt) will welcome the members. In each case the agenda is of more than usual interest, and should attract an attendance larger than the average of such meetings. To this end also the intrinsic interest of the quaint old city should serve. Its extraordinary wealth of historical traditions was indicated in the account we gave in last week's issue of the episodes in the pageant that is being held there during the present week, from the 18th to the 23rd; while the illustrations we then showed will have served to whet the appetite for the rare architectural interest of the town. Among the subjects to be dealt with at the general meeting are: Recommendations of certain amendments to the National Board of Conciliation rules; the question of appeal in the case of Wallace v. Douglass, in which a decision as to lump-sum contracts is felt to be adverse to the interests of builders; recommendations of amendments to the Agreed Form of Contract; and discussion of various matters of trade importance, such as "The principles underlying the present practice in regard to provisional sums in quantities and contracts" (opener, Mr. Stephen Easten, Newcastle), "Are architects justified in endeavouring to force the literal interpretation of obsolete specification descriptions in respect to materials?" (Mr. F. Higgs, London), and "The desirability of applying on a wider scale methods of recording reference information in use at Liverpool" (Mr. R. Arthur Costain, President of the Liverpool Association).

The Royal Academy of Music.

The foundation stone of the new building, in the Marylebone Road, for the Royal Academy of Music, was laid last Thursday by the Right Hon. Lord Strathcona and Mount Royal. The new building, the design of Messrs. Ernest George and Yeates, the drawing of which is now in the Royal Academy Exhibition, will consist of a central block with two wings. The right hand wing will contain the concert hall, 122ft. long by 45ft. wide, with its entrances and exits on the main road and on the side street, communicating internally with the building on the ground and first floors. The concert-room will be provided with an organ by Messrs. Norman and Beard, the gift of Mrs. Threlfall, in memory of her husband, the late Mr. Thomas Threlfall, for many years chairman of the committee of management. On the ground floor will be rooms of the principal, Sir Alexander

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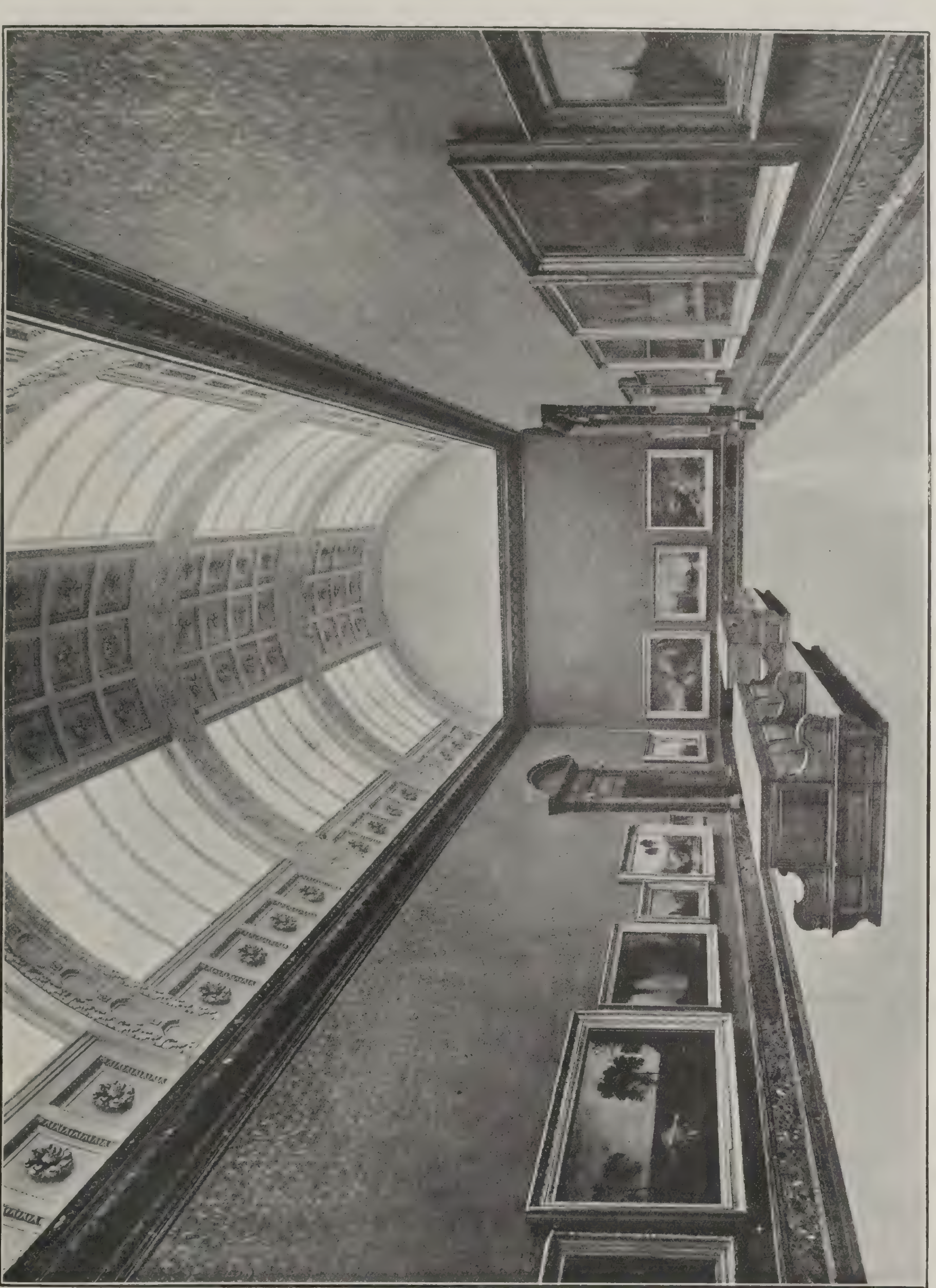


This view is of the large gallery, numbered VI on plan. In this are hung the large paintings by Turner. The wing is a gift to the nation by the late Sir J. J. Duveen. See next page.

THE NEW TURNER WING TO THE NATIONAL GALLERY OF BRITISH ART, MILLBANK, LONDON, OPENED TO-DAY.
W. H. ROMAINE-WALKER, ARCHITECT.

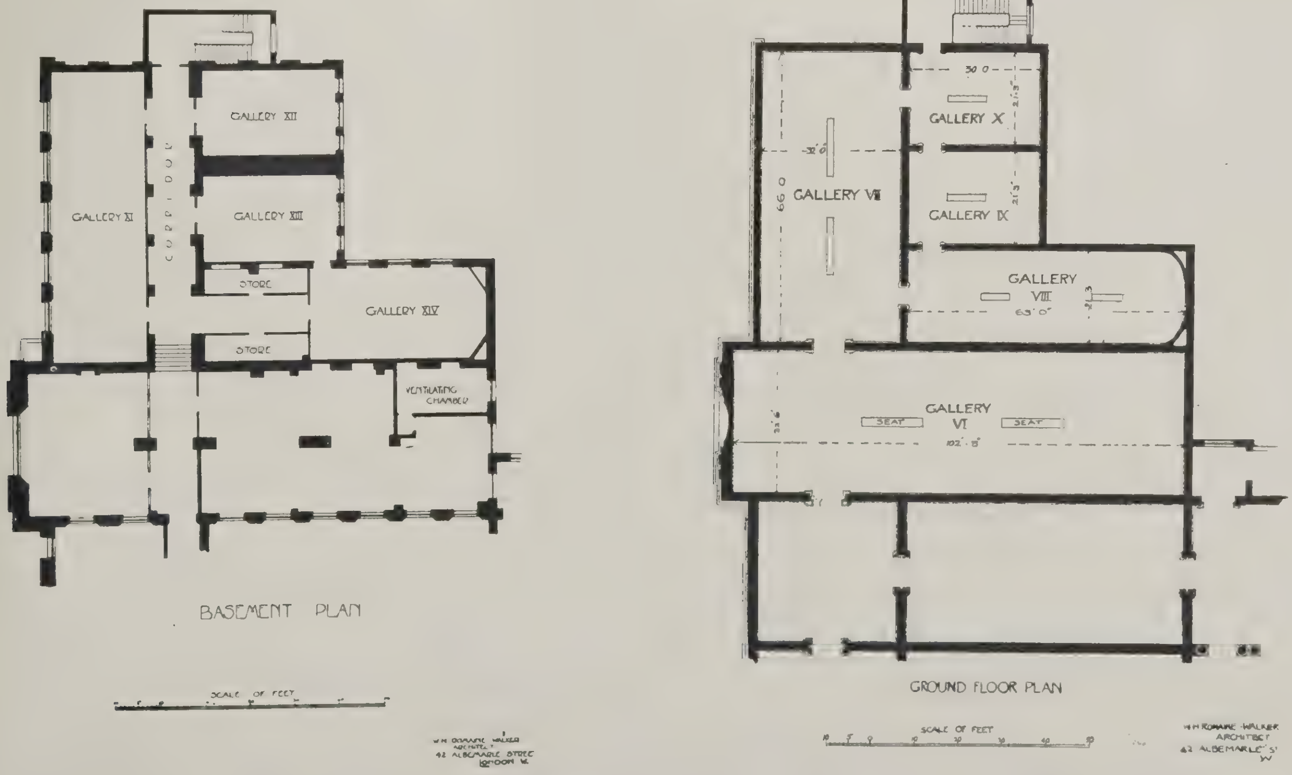
LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Mackenzie, the secretary and the staff, as well as the hall, waiting-rooms, etc. The contractors for this building are Messrs. G. E. Wallis and Sons, of Maidstone, who have engaged to finish their work by June 30, 1911.

NEW TURNER WING AT THE TATE GALLERY.

The new wing at the National Gallery of British Art for the Turner collection, the gift of the late Sir J. J. Duveen, from the designs of the architect chosen by him, Mr. W. H. Romaine-Walker, contains five galleries (Nos. VI. to X.) on the main floor and 4 on the ground floor (Nos. XI. to XIV.), a special staircase having been built to connect them.

In Gallieries No. VI. and VIII. contain principal paintings are hung. Nos. X. to VIII. contain studiorum drawings and water colours (in chronological order), including the drawings for the *Liber Studiorum*. The lower galleries contain sketches, studies, and unfinished oil pictures, hitherto unexhibited, and a few finished oils. The architectural finishings of these two galleries are executed in Verde-Antico marble dressings, the pilasters to the main doorways having ormolu caps and bases. A similar marble is used for the border to enclose the solid parquet floor. The ceilings are in enriched fibrous plaster, painted and gilded. The walls are covered with a rich venetian red silk brocade, probably the colour Turner himself used in his own gallery (he had some material used for decorations in Westminster Abbey at the Coronation of Queen Victoria). A departure has been made in designing the roofs by constructing the skylights in such a manner that they carry through the lines of the ceiling. The glazing is on a modern system without putty, and moulded ribs are fixed under each glazing bar to carry the blinds so that when they are drawn the contour of the lights remains unbroken. The blind cords in all cases are carried down in a tube behind the wall boarding to a box sunk in the skirting, thus avoiding the hanging cords which are such an eyesore in most galleries. These have been kept smaller and lower purposely to be more in scale with the small water colour drawings. The same marble is used throughout, but the boarding has been hung with gold canvas. The seats in the galleries and the picture cases in the water colour rooms are in Italian walnut. These cases are so constructed that they can be unlocked and the pictures in their frames can be withdrawn and replaced by others. A staircase on which is hung the portrait of the deceased donor leads out of the end of Gallery X. down to the lower floor where are situated Galleries XI. to XIV. approached by a wide Terrazzo paved corridor. They all have ceilings divided into bays with block modillion cornices, the walls being covered with gold canvas, the doorways and other finishings painted white. The wing throughout has been wired for electric light, heated by hot water (the lower floor being on an electrically pumped circulation), and ventilated by fresh air inlets and ducts delivering the air under radiators, these latter in the galleries being enclosed in steel cases lined with uralite and surrounded by the seats or cases so that the hot air is delivered above the floor level. There are two independent systems of foul air extraction, the air being drawn out during the summer through openings in the ceilings, and during the winter through gratings in the skirtings. The construction is fireproof throughout, the floors and roofs being of steel embedded in concrete, while the roof coverings are asphalte. Owing to the sudden death of Sir J. J. Duveen shortly after the commencement of the buildings, the decision as to the decoration and fitting up of the galleries has devolved upon the eldest son, Mr. Joseph Duveen, and it is greatly owing to the generous manner in which he has *viewed his trust* that the scheme has been so fully carried out. Mr. Duveen has further, at his own cost, erected the staircase and completed, decorated and furnished the well-lit galleries on the lower floor, and has thus furnished accommodation for hundreds of minor works of great interest to the artist and student, for which there would be no room upstairs. Messrs. Patman and Fotheringham, Ltd., were the general contractors, and the following other firms were engaged:—Messrs. Geo. Jackson and Sons, Ltd., for the fibrous plaster work, painting and gilding; Messrs. Litchfield and Co. for the wall hangings, seats and stands; Messrs. H. T. Jenkins and Son for the marble work; the Art Pavements and Decorations, Ltd., for the parquet, wood block, and terrazzo flooring; Messrs. Helliwell and Co., glazing of skylights; and Messrs. Dent and Hellyer, the drainage.



THE NEW TURNER WING AT THE NATIONAL GALLERY OF BRITISH ART, MILLBANK, LONDON.
W. H. ROMAINE-WALKER, ARCHITECT.

A NEW ROYAL PALACE IN LONDON.

OPINIONS OF EMINENT ARCHITECTS.

The statement in a London daily paper recently that the question of rebuilding Buckingham Palace is being seriously entertained in official circles gave a fillip to the scheme which, as our readers are aware, we have supported since it was first suggested by a correspondent in the "Times." Quite apart from the question of the unworthiness of the east front to form a background to the Queen Victoria Memorial, now approaching completion, the Palace, as a whole, is said to be badly planned for a Royal dwelling, and on the occasion of State ceremonials, such as the coronation or funeral of a monarch, the accommodation is inadequate to house the numerous foreign royalties and potentates who may happen to be the guests of the King and Nation. Though the opinion has been expressed by more than one architect that we have no living artist sufficiently versed in the planning of palaces to design a new Buckingham Palace, we are far from supporting such a pessimistic opinion. We have little doubt that when the hour arrives the man will also be found to fit it. We doubt if Continental architects of the present day have had much more experience in this direction than men of our own race; and though the Continent can furnish many fine examples of palace design, we question whether these buildings are entirely suitable, considered in the light of modern requirements.

It must not be forgotten that, to-day, the ideas of monarchs regarding the surroundings of their private lives do not differ materially from those of the higher ranks of their own subjects. It is no longer the custom for a king to sleep in a great State bed with an elaborate canopy or hangings, or to take his meals in an immense State dining-room. On the contrary, we are told that the private apartments of many of the living European monarchs are quite Spartan in their simplicity, and it is known that alterations made at Buckingham Palace by the late King, on his accession, were designed to bring the rooms more into consonance with his ideas as to the housing of a private English gentleman.

A modern Royal palace would seem therefore to comprise two very distinct parts, one containing the private residential quarters of the Monarch, his family, and guests, and the other part containing the important halls and apartments for State functions. The point in design would be to combine these two distinct parts in one homogeneous structure.

Mr. Lewis Harcourt, replying on the 11th inst. to a question of Mr. Horatio Bottomley, asking whether the Government would consider the propriety of either rebuilding Buckingham Palace or otherwise providing a suitable Royal residence, stated that the present Palace was not internally unsuitable for its purpose, but that he would be glad if he had the opportunity and the money to reface it with stone on its eastern front, in place of the present covering of stucco and paint.

There seem to be various discrepancies on important points in this controversy. Mr. Lewis Harcourt states that the residence "is not internally unsuitable for its purpose," and probably his dictum is more to be trusted than that of many critics who have had no first-hand opportunities for investigating this point. The idea has arisen, no doubt, that owing to the various alterations and additions that have been made from time to time, the planning cannot now be direct or well arranged. Then there seems to be considerable doubt about the nature of the material used for the eastern front. Mr. Harcourt says painted stucco, and this agrees with the belief of many. But many critics believe the front to be of Bath stone, and urge that the paint be cleaned off and the stone surface left exposed. Others, again, while agreeing that this would be an æsthetic improvement, say that the Bath stone would not stand the London atmosphere, and that a harder stone must be substituted. A correspondent in "The Morning Leader" of July 12th declares, not very positively, however, that the stone of this front is Caen.

As to the design of the Palace generally, opinions differ greatly. Many condemn it utterly, but others, mindful of its piecemeal erection, declare it to be, like the curate's egg, good in parts. In particular, the garden or west front is held to be quite good. In endeavouring to sift opinion to ascertain what is possible or probable in regard to rebuilding, it would seem that, generally speaking, rebuilding of the whole is not generally demanded or considered necessary; nor is it likely that the Government would find the million of money that would be required for it. The idea of raising money by public subscription to carry out the work as a memorial to the late King has also been mooted; we associate ourselves with those who oppose this idea as not being worthy of the object. It is the business of the nation, through the Government of the day, to provide a proper house for the King; and if Buckingham Palace is not suitable for that purpose, it should be rebuilt or put right at the charge of the National purse, and not out of funds elicited by the admiration and affection of the people for King Edward VII.

Mr. Harcourt's reply to Mr. Bottomley is not as hopeful as earlier rumours led us to expect. We believe some £150,000 would be required to rebuild the eastern front, and it should surely be possible to get a vote for this amount passed through Parliament. But in rebuilding the disposition of this front would have to be considerably altered. The Victoria Memorial introduces a new factor in the scheme, and some design with projecting end wings and the main part of the front recessed would appear to be necessary.

Some interesting opinions of leading architects have been collected by "The Observer," which commenced a controversy in its pages by a contribution from Mr. William Woodward, F.R.I.B.A., who is an advocate for rebuilding.

Mr. Leonard Stokes regards Buckingham Palace "as a wretchedly poor specimen of palatial architecture. The laying out of the Mall was a masterly idea, and the completion of the Victoria monument will carry it a step further. The problem of the Palace, however, will help to determine how far we have advanced in the direction of being able to think of big things in a big way. We have grown so accustomed to faltering at the crucial moment that we do not compare favourably with other nations in respect to really magnificent architectural schemes. Whether we shall let the Mall, in its uncompleted state, further emphasise our weakness remains to be seen. . . . The selection of a suitable design is not an easy task. I am not keen on competitions. To my mind they are a waste of time, and it cannot be said that the process of selection by this form of rivalry has been an unmixed success. On the other hand, if you do away with open competition and form your judgment on the work of those who have made reputations, you necessarily leave young men out of the running. There is, of course, the question, how far you would be justified in relying on a young and comparatively inexperienced man to design a Royal palace. But, while the selection of a suitable design is of great importance, it is of still greater importance to get the country to see that the existing Palace is quite inadequate."

Professor Reginald Blomfield thinks "the façade unworthy of its purpose and its commanding position. It was built at one of the worst periods of modern architecture, by an architect who, to say the least of it, was no master of classic design, and shows a deplorable falling off from the high standard of the eighteenth century, both in England and on the Continent. . . . . There is probably no competent judge who would not agree that the façade is inadequate and ought to be replaced by a design which would fitly complete the great scheme of the Victoria Memorial."

Professor Beresford Pite thinks that we have "no school of architects in this country trained to cope with the characteristic art and special features of Royal palaces. Our most distinguished architects have had no experience whatever of this class of work. But there are plenty of young men in the country, and the possibility of making a front—a magnificent front—to Buckingham Palace would probably emanate from some unknown genius when the opportunity presents itself. . . . The present façade of Buckingham Palace is paltry, and the only time it looks presentable is after a coat of paint, which costs £3,000."

Mr. T. E. Collcutt. "I don't think it possible to get this or any other Government to take an Imperial view of what is due to the King in the way of a palace in the capital. The secret of it is that the public generally lack artistic temperament. Do you think the people of the country generally have concerned themselves how his Majesty is housed? They know that he lives at Buckingham Palace, and that is about all. . . . When once the country fully realises how contemptible is the present appearance of Buckingham Palace, they will call out for its removal. The Mall will some day be one of the attractions of London, and it will be to our discredit if we suffer it to be disfigured by a structure like Buckingham Palace, the front elevation of which is beneath contempt."

Mr. J. S. Gibson is convinced "that the only thing to do with Buckingham Palace is to pull it down. No finer opportunity than the present has ever offered itself. Next year will be Coronation year, and the nation would enthusiastically welcome a chance of showing their devotion to the Crown by making a present to the King. I am sure the suggestion would be most heartily acclaimed if public sentiment could be sounded. It is worse than useless to tinker with the existing Palace. I cannot believe that any architect would willingly undertake the impossible task of trying to make a presentable palace out of a structure overloaded with architectural and other defects. As an addition to the notable buildings in London, a new Royal palace would be a sound investment. Indeed, it would almost pay London to undertake the work single-handed.”

Mr. Henry T. Hare. “As Buckingham Palace now stands it is much too near the Victoria Monument, and the addition of either wings or another storey would make the west end of the Mall look more crowded than ever. If the Office of Works would recommend that it was time the country had a Royal palace in keeping with the dignity of the Crown, the new building could be set back far enough to secure a really imposing entrance. One always foresaw that the Victoria Monument would make the palace look ridiculous. It puts the building entirely out of scale. When you think of the Royal palaces in Spain, Germany, Austria, and Russia, Buckingham Palace becomes mean in the extreme.”

Mr. E. Guy Dawber. “The place is composed of architectural patches, and its faults can only be remedied by being removed. As a matter of fact, the place was never intended to be a palace. When the grant was made by Parliament the idea was to repair and enlarge Buckingham House, and therefore the old site, height, and dimensions were retained, probably because it was known that Parliament would not vote sufficient money for an entirely new palace. The circumstance that the building is not constructed on fire-proof principles is itself almost sufficient to raise the question of the wisdom of tolerating Buckingham Palace any longer. I do not think any good can be accomplished by tampering with the building. The only solution, to my mind, is to make arrangements for a new palace, which will do justice to the Crown and the country. Let there be a competition open to British architects, both at home and in the overseas dominions. A competition open to the world would be useless, as everyone knows that a Government would not face the odium in such a case of giving the award to a foreigner. There are excellent architects in the Colonies, and the endeavour to achieve fame as the designer of the King's Palace would produce work worthy of the occasion.”

In addition to these opinions we have received the following from other well-known architects :—

Mr. W. D. Caröe. “I cannot conceive a better memorial to King Edward VII. than the improvement of the front of Buckingham Palace. The recent improvements in the Mall, in connection with the memorial to Queen Victoria, were I believe entered upon largely in accordance with his wishes, but their value and effect are seriously diminished by the miserable effect of the Palace up to which they lead. I should not favour any reconstruction of the earlier portions of the Palace, which are quite good of their kind, nor do I think that the reconstruction of the front would be the best solution externally. A courtyard originally faced the Mall, and to this courtyard I would return, connecting the wings with a one-storeyed open screen, and if necessary reconstructing the ends of the wings. Such an arrangement would have a much finer effect in connection with Mr. Brock's work than any reconstruction of the front. Of course, it might be difficult to encroach upon the plan of the Palace, but possibly a practical addition to the plan elsewhere might conveniently be made to supply the deficiency caused by pulling down the Prince Consort's frontage.”

Mr. Alfred W. S. Cross. “Whilst I fully recognise the desirability of replacing the present undignified structure by a stately palatial building, yet I do not think the proposal that the national memorial to the late King Edward VII. should take the form of a new, or an improved Buckingham Palace can be considered worthy of the object its supporters have in view. Any memorial of the kind under discussion should be one of a nature likely to perpetuate the memory of the illustrious monarch to whom it is erected, and as such the personal element should predominate in the design, and give it a sufficiently distinctive character to enable it to proclaim, for all time, the reason of its erection. It is scarcely probable that a new palace, however architecturally worthy of its object as a permanent memorial, would be associated in the minds of future generations with the life and self-denying labours of our late King, and for that reason I should be sorry to see the memorial assume the form which has been suggested.”

Mr. Halsey Ricardo. “I should suggest as a preliminary before any thing constructional is attempted, the front of Buckingham Palace should be colour washed—say in ivory white—and, whilst the scaffolding is up for the painters' use, the opportunity might be taken of removing much of the pie-crust ornamentation. It might prove that a clean front to the Palace was sufficiently satisfactory.”

Mr. W. H. Seth-Smith. “With reference to the proposal to improve or rebuild Buckingham Palace as a national memorial to the late King, it would be interesting to know what his late Majesty's views were on the subject. As regards rebuilding, assuming that the original plan as given in Leeds's ‘Illustrations of the Public Buildings of London,’ 1838, has not been materially altered, it would seem unnecessary, and therefore a thousand pities, to destroy the State apartments forming the western frontage, which possess such rich historical associations. This western front, moreover, is by far the best part of the elevational design. As for the north, south, and east sides of the quadrangle, I advocate entire reconstruction on a plan which would provide as many important rooms as possible with a sunny aspect, and with really fine frontages towards the Mall towards Constitution Hill; a design in scale with the Victoria Memorial and its new approaches. Leeds remarks, in respect to the site and views from the east and west windows, ‘the Palace has no cause to envy any other building of the kind in any European capital.’ It certainly could not occupy a more favourable position in London. It is equally interesting to read Leeds's and Britton's caustic condemnation of Nash's design in general, which is seen from the Park, and before the eastern range of rooms was erected between the north and south wings must have been far meaner than it appears now. Britton says that ‘excepting Windsor Castle, the Royal palaces are a reproach to the monarchy and to the nation,’ and, further, that ‘if the metropolitan parks had a Royal palace adequate to their scenic character and to the wealth and genius of the kingdom, we should not shrink from a comparison with any capital in the world.’ These early critics end by expressing the hope that the public will philosophically conclude that ‘half a loaf is better than no bread.’ Perhaps we can afford, seventy-five years later, a whole loaf. In the hands of an able architect, this scheme might be very satisfactorily accomplished, and, if so, would seem to me to be a very appropriate memorial to his late Majesty, more particularly as being in conjunction with that of his Royal mother.”

Prof. Stanley D. Adshead. “To rebuild Buckingham Palace as a national memorial to the late King strikes me as inappropriate and somewhat outside the mark. To my mind, a memorial to King Edward VII. should take the form of an equestrian statue in the first place, and of a public building in the second place, and preferably a public building which would further those interests which the late King had at heart. I would suggest a national theatre or charitable institution of some sort; preferably the former, as being more of a monument. Why associate the rebuilding of Buckingham Palace with King Edward VII.? That Buckingham Palace needs rebuilding no one will deny; but why not rebuild it and present it to King George V. as a coronation send-off, and as an expression of good-will on the part of the people at the commencement of the new reign? It is an easy matter to decide to rebuild Buckingham Palace, but it is not such an easy matter to get a good enough design. In my opinion a competition promoted at the present moment in the usual way, and open only to competitors who were British subjects, would under the present conditions of monumental art in this country be foredoomed to failure. The present generation of practising architects have in this country either been educated in a very irregular way or have never been educated at all. Still, there would seem to be no way of finding the unsuspected genius except by competition, and my suggestion would be the preliminary submission of a portfolio as in the case of the Liverpool Cathedral competition, and after half a dozen competitors had been chosen, the greatest care being taken as to their appreciation of purity in style, that then a pretty lengthy period be allowed to elapse for the definite study of the subject before expecting them to submit a final design. Bad as the present elevation may be, still in my opinion if cleaned up it could give points to many important modern buildings of a similar scale.”

Mr. W. A. Pite. “(1) The rebuilding of Buckingham Palace does not commend itself to my mind as being in any way appropriate to the never-dying memory of King Edward VII. That a new palace commensurate with the greatness of the Empire is necessary, nobody will deny. This is, however, entirely a question for the Government and Parliament to supply, and not for public subscription, however munificent. If a rebuilding should take place, I am of opinion that the Palace should be pushed considerably back, or the façade be concave in plan with angle pavilions, it being too near the Victoria Memorial. (2) The idea of tacking a new front on to the present Palace is too ridiculous to contemplate seriously, beside being a patchwork; there could be no successful design on such a basis.”

MAGAZINES AND REVIEWS.

The "Art Journal" commences a series of articles on "Embroidery and Needlework," concerning which there does not seem to be a sufficient line drawn between the classes of subjects which are or are not suited for tapestry. For instance, on one page there are two subjects designed by Burne-Jones for tapestry-figure subjects in foreground planes, which are very good for the purpose; below these is a tapestry reproduction of his picture "The Mill," which is totally unsuited for tapestry; but no distinction is drawn between the two. A paper on "Orchids and Butterflies" may have some suggestions for decorative artists.

The "Architectural Record" (New York) contains an article entitled "Specifications for the working out of Landscape Gardening," which, however, is neither a specification nor an art article, but is, in fact, a description of the practical treatment of soil and of roadmaking. Whether any English practitioners would be interested in learning the views and experience of an American gardener on the subject, we know not; in roadmaking, at all events, the Americans have nothing to teach us, but (apparently) a great deal to learn; the United States having the reputation of having the worst made roads of any civilised country in the world; though we believe they are waking up a little on the subject now. Nothing is said in the article as to the design of gardening. "Additions to Chicago's Skyline" are illustrated by representations of some of the new high buildings there—hotels and office buildings. Such structures might be made very impressive, but these are not very successful. In the best of them, The La Salle Hotel, what might have been a good design is completely spoiled by an enormous mansard attic, in which the dormer windows are completely out of scale with all the rest of the openings, and seem as if they belonged to another building. The McCormick office is the most extraordinary piece of grid-iron we ever saw; the two fronts shown in the perspective view contain together 468 nearly square windows of the same size and space, without the slightest attempt at grouping or variety of any kind. The result is almost ludicrous.

The "National Review" contains an article on Sir William Chambers by Mr. Austin Dobson, whose appearance as a writer on architecture is rather a surprise. The article gives a good account of the principal incidents in the life of Chambers, his visit to China, and his subsequent taste for "chinoiseries" which broke out from time to time throughout his life; and his carrying out of Somerset House, a building which deserves far more praise than it usually gets. Mr. Dobson is rather lukewarm about it; and it certainly was not worth while to quote Taine's abuse of it, which is simply stupid—the writing of a Frenchman anxious to have a rap at English architecture.

In the "Fortnightly Review" "Some Thoughts on old Japanese Art," by Mr. Yoshio Markino, is an article which is of considerable interest, as giving the Japanese view of the objects of art. Western art, according to them, is scientific and objective; a landscape must be complete, with the background and everything else. The western artists paint everything as it looks to them; therefore, they must study about light and shadow and perspective, *i.e.*, the Japanese artist, by Mr. Markino's statement, desires to enter into the life of something—a flower or a bird—to paint it as if he were painting himself. When that is done, the picture is finished; he does not want realistic accessories. That may be a new view of the subject to many English critics or students of Japanese art.

The "Contemporary Review" contains a very good article by L. March Phillips, under the title "Greek Sculpture," in part a review of a recent book of Professor Gardner's. The reviewer's main point is that we should consider sculpture in connection with the life and character of the people who produced it. In this light is contrasted the rigid conservatism of Egyptian art with the awaking of archaic Greek art to the perfection of the real forms of life, to be perfected in the great period of their art. It is said truly that the Greek intellect, in its desire for definiteness and clearness of expression, was exactly prepared to make the most of such an art as sculpture, the art above all others of definite form. But both the Greek mind and Greek art, perfect within their own limits, have their limitations of feeling and expression. As exemplified well in speaking of the Greek tombstone reliefs—"That we must part; that separation is bitter; that it is to be borne with fortitude—this reason and intellect affirm, and this only; thus much, therefore, carve, and carve no more." There is no spiritual consolation in the Greek tomb relief, because no such thing existed in the Greek mind. It is the sculpture of a noble and dignified stoicism.

UNIVERSITY OF LIVERPOOL SCHOOL OF ARCHITECTURE.

ANNUAL EXHIBITION: LIBERTY BUILDINGS.

Yearly the task of reviewing the Liverpool School exhibition becomes a more difficult one. On this occasion the amount of work shown is nearly double that on view last July, and as the quantity increases, so apparently does the quality rise in equal ratio.

We can remember—it was only a very few years ago—when the bulk of the students were drawn from the offices of Liverpool practitioners. Now the local sections are considerably outnumbered by those coming from other towns, both in the north and south, and from places outside the Kingdom. With this extension of the school's popularity the task of the critic becomes more complicated and uncertain. To attempt a separate criticism of each student's work would scarcely be possible. We must therefore content ourselves with a very limited selection.

In that portion of the exhibition devoted to the work of old students we observe several designs by Mr. Adrian Berrington (who, it will be remembered, was on three successive occasions placed second in the competition for the Soane medallion). There is a peculiarly individual quality in all Mr. Berrington's work, partly due to his manner as a draughtsman, and partly the result of his intellectual point of view. He draws extremely well, and in a technique which leaves no margin for blunders successfully carries through the most risky perspectives. His colouring is always clever and a trifle bizarre. He has the knack of obtaining a sort of footlight atmosphere—generally where it is most difficult to obtain. And as an architect, notwithstanding his predilection for mistaken detail and sinuous masses, he handles his subjects with considerable breadth and distinction of idea.

Several of the travelling scholars for the last session submit sets of measured drawings. Those by Mr. Hampshire, chiefly wall monuments from Italian churches, are remarkable for their delicacy. His detail of the Campo Santo at Genoa, showing the Rotunda and portico, is more strongly drawn, and makes the most effective sheet of the series. Mr. H. A. Dod, who presents a number of studies of the Palazzo Pandolfini, is an altogether less careful draughtsman than Mr. Hampshire, but his style has more assurance and competence. He has a better knowledge of motives, and does not seem to concern himself with the attainment of superficial neatness. His rendering of the main front of the Pandolfini in the American fashion is an excellent performance. Mr. Budden also shows rendered drawings of the Museo Barracco, Rome, one of the latest products of the Greek Revival in Italy. The building—an Ionic composition of charming freshness—is elaborately coloured and enriched, and must have been somewhat difficult to measure.

Of the degree students whose course finishes this year, Mr. E. Prestwich (B.A., 1st class hons.) is undoubtedly the most accomplished. He has won, in prizes and scholarships, during the past session, £195 (Lever prizes £120, Ronald P. Jones Scholarship £50, British School at Rome Scholarship £25), and we understand proposes to spend the coming winter studying in Rome. A thorough knowledge of Cockerill's work—Mr. Prestwich has measured the Taylorian Institute at Oxford, the Bank of England, Manchester, and other buildings by the great artist—has sensibly refined the detail of his designs, the main lines of which, however, are American in conception. His treatment of the final examination subject, a casino on the shore-front of a fashionable watering-place, is an admirable solution of the problem. All Mr. Prestwich's work gains greatly from the beautiful manner in which it is drawn and rendered. His half-inch details of the Taylorian Institute are, from the point of view of pure draughtsmanship, amongst the best pieces in the whole exhibition.

Mr. W. R. Owens (Bachelor of Architecture course) appears to have completed a vast amount of measured work in his first two years. By devoting himself to Greek buildings alone, he has acquired some insight into the revival as an artistic movement. Under the conditions of his course, he has still two years to run before obtaining a degree. These two years are divided between practical work in some office approved by the Board of Studies and academic work in the school studio. As Mr. Owens has already won one of the smaller Lever prizes (£10) he may be expected to achieve further distinctions in the near future. Mr. Ernest Gee (certificate student, 1st class, Holt Travelling Scholarship, £50) has accomplished the *tour-de-force* of measuring both the interior and exterior of St. George's Hall. Mr. Gee draws strongly, and his designs are usually thought out in a forceful kind of Doric.

Other 1st class certificate students whose attainment calls for special notice are:—Mr. P. C. Harris (Lever prizeman), for his excellent domestic work; Mr. W. Allan, for his construction sheets and surveys; Mr. D. M. Griffin, for his studies from life and modelling; Mr. C. A. Harrington, for his measured drawings. Highly finished sets of steel diagrams, etc., are also submitted by Messrs. Preston, Wills, Scott, Stephen, and Caldwell.

Taking a general estimate of the work on view, and comparing it with that presented last year, when the school was still in its old quarters in the Victoria Building, one must inevitably be impressed with the unqualified success of the system in force.

NEWS IN BRIEF.

The new thoroughfare from the Mall to Charing Cross, through the triple arch designed by Sir Aston Webb, will, it is expected, be opened about a month hence. Once opened, it is imperative that it should not be broken up for any purpose. The Gas Light and Coke Company have recognised this, and they have removed the old gas main, extending from St. James's Park to the London County Council hall, which was liable to leakage, and have substituted a 46in. steel tube, laid in a concrete bed about 12ft. below the surface level, so that leakage is impossible. The left wing of the arch, from the park side, which is allocated to the First Lord of the Admiralty, has been occupied by several inland branches of the Department. It was intended that the First Lord of the Admiralty should occupy the right wing, but he preferred to remain in the old official residence, with its time-honoured associations. A handsome Portland stone parapet round the building is almost completed, and a flight of steps has been erected from the park into Spring Gardens, where the roadway has been considerably widened.

* * *

The members of the South-Eastern District of the Institution of Municipal Engineers have elected Mr. Henry C. Adams, consulting municipal engineer, of 60, Queen Victoria Street, London, E.C., as their chairman for the second year in succession.

* * *

Messrs. Rickman and Burn, FF.S.I., have removed their offices from 8, Montagu Street, Russell Square, to 5, Queen Square, Bloomsbury, W.C. Telephone No. (Gerrard 6326) remains unchanged.

* * *

The Local Legislation Committee of the House of Commons had under consideration last week the Bill promoted by the Warrington Corporation having for its chief object the reconstruction of the Warrington Bridge over the Mersey. It was proposed to increase the width of the bridge from 28ft. to 80ft., so as to provide for the increased traffic, which had grown out of proportion to the existing bridge, especially since tramways were laid, and to substitute a bridge of one span of 134ft. for the existing bridge, which was supported by two piers. The change would improve the navigation of the river. Sir George Nares, Acting Conservator of the Mersey, objected to the proposal relating to the bridge on the ground that the maximum capacity of the river for tidal and navigation purposes had not been sufficiently considered. The improvements were mainly for road purposes. The portion of the river above Warrington Bridge acted as a reservoir for tidal and flood purposes, and he objected to its capacity being lessened, as he understood it would be. In his opinion the width of the bridge should be to the present abutment walls. Mr. W. H. Hunter, chief engineer to the Manchester Ship Canal Company, said that if the width of the arch were extended from 134ft. to 150ft. the difficulties of the company would be greatly increased. It would obviously reduce the velocity of the water under the bridge. The wider the bridge the more unstable would be the channel. The committee announced that they were satisfied as to the necessity of widening the bridge, for the general benefit of the public, and that the bridge would be, if anything, an improvement to the flow of the stream. They thought the promoters were allowing ample width for the purpose of carrying the water.

Arrangements have now been completed for the establishment of a Professorship of Coal Gas and Fuel Industries at the University of Leeds, as a memorial to the late Sir George Livesey, upwards of £10,500 having been subscribed to the fund initiated for the purpose by the Institution of Gas Engineers. In connection with the work to be carried out by the Professor, an Advisory Committee has been formed, consisting of the Pro-Chancellor (Mr. A. G. Lupton, LL.D.); the Vice-Chancellor (Sir N. Bodington, Litt.D.); Professor Arthur Smithells, F.R.S.; Messrs. J. W. Bray, J. W. Cobb, W. E. Garforth, J. E. Stead, F.R.S., Alderman C. F. Tetley, M.A., and Dr. M. G. Christie, representing the University; Messrs. Edward Allen (Liverpool), J. Ferguson Bell (Derby), John Bond (Southport), Charles Carpenter (London), James W. Helps (Croydon), Charles Hunt (London), J. W. Morrison (Sheffield), Alexander Wilson (Glasgow), Charles Wood (Bradford), Corbet Woodall (Westminster), representing the Institution; and Messrs. Thomas S. Clapham (Keighley), Dugald Clerk, F.R.S. (London), F. J. West (Manchester), H. J. Yates (Birmingham), representing the Society of British Gas Industries.

* * *

The opening ceremony of Christ Church, New Southgate, took place on Wednesday, July 6th. The buildings are faced externally with red Leicester bricks with Bath stone freely used in the dressings. The present portion of the scheme is complete, comprising church with bold square tower, church parlour, and three vestries, but provision has been made for a future institutional block of buildings. The work has been carried out by Mr. Jas. W. Jerram, of Crown Works, East Ham, E., under contract for £4,597, from the design and under the superintendence of Messrs. George Baines and Son, 5, Clements Inn, Strand, W.C.

* * *

The Superior Jury of the Japan-British Exhibition have given the highest award in its class (the gold medal) to the Saxon Portland Cement Co., Ltd., Cambridge, for their exhibits relating to the manufacture, testing, and uses of Saxon Brand Portland Cement.

* * *

Mr. Henry James Wise, A.R.I.B.A., has moved his offices from 7, Great James Street, Bedford Row, to 64, South Molton Street, W. Telephone: Mayfair, 4331.

* * *

The next session of the Department of Architecture at the University of Sheffield commences on October 5th. The lecturer will be present at the University on October 3rd and 4th, from 9.30 a.m. to 12.30 noon to see intending students. The department provides (1) a preliminary year course, meeting the requirements of the R.I.B.A. preliminary and the matriculation examinations. (2) A two years' day certificate course. (3) An advanced course for diploma; part day, part evening. (4) Courses in surveying. The lecturer is Mr. W. S. Purchon, A.R.I.B.A. Sir Aston Webb, R.A., and Mr. Halsey Ricardo have been appointed by the Board of Architectural Education to act as visitors. Mr. A. C. C. John, A.R.C.A., and staff of the Technical School of Art, are in charge of the course on architectural ornament, and the following are honorary lecturers for evening courses: *Design*, Mr. E. M. Gibbs, F.R.I.B.A. *English Architecture*, Mr. C. F. Innocent, A.R.I.B.A., and Mr. J. B. Mitchell-Withers, A.R.I.B.A. *Italian Architecture*, Mr. H. L. Paterson, A.R.I.B.A. The prospectus can be obtained from Mr. W. M. Gibbons, Registrar, The University Sheffield.

* * *

Messrs. Simplex Conduits, Limited, London and Birmingham, have issued a supplementary list of Simplex fans and small motors, in which the range of fans shown is sufficiently wide to cover average requirements, while special types and designs can be quoted for upon receipt of particulars. A page of this supplementary list is devoted to small motors for driving sewing machines, and polishing motors. These vary from 1/16-1/3rd h.p., and the latter are supplied with either pedestal or standard form of base. Suitable starting resistances and switches are also listed.

* * *

It has been decided to raise a memorial to King Edward for East Sussex at a cost of about £30,000. The Hastings and East Sussex Hospital is to be removed from its present unsuitable site on the Hastings sea front to high ground.

* * *

Important works are already in progress, and still more important ones are shortly to be undertaken, for the improvement and enlargement of the port of Bordeaux. The problem of developing this port, which extends along the left bank of the river Garonne about 90km. from its mouth, is a double one—to improve the existing works and to provide for the safe navigation of large vessels down to the mouth of the river. The total cost of these new works is estimated at 53,573,000f. In addition, 1,000,000f. will be required for miscellaneous purposes, so that the whole expenditure on improvements at the port may be put at 60,000,000f.

* * *

In the course of excavations on the summit of Dinas Emrys, Beddgelert, the ruins have been found of a building 32ft. long and 23ft. wide. The walls are evenly and substantially built, and mortar was used in their erection. There is also a well-defined bonding course round the building. Among the articles found in the material excavated are several bronze stud nails with the rivets attached to them, a number of small artificially polished stones, and a large quantity of calcined bones. All the soil is strongly impregnated with charcoal. From the surface to the rock foundation is a depth of about 6ft. The excavations are being supervised by Mr. Charles E. Breese, a member of the Cambrian Archæological Society, and have been arranged by Mr. T. E. Roberts, Plasybryn, Carnarvon, the owner of Dinas Emrys. There are abundant traces of its having been a Roman-British stronghold, and Mr. Breese believes it to belong to the third century.

* * *

"The oldest antiquarian society in England," known as the Spalding Gentlemen's Society, is celebrating the bicentenary of its existence, and erecting a memorial to its founder, Maurice Johnson, the antiquary, by building a new museum and library in Bridge Street, Spalding. The foundation stones were laid last week.

* * *

Tenders submitted for the cleaning, painting, and repair of Darenth Asylum range from £465 to £1,480. The engineer's estimate is £670. The discrepancy is thought to "break the record," but we seem to remember even more remarkable instances of wildly erratic tendering.

It is stated that Mr. Oscar Hammerstein, the American impresario, has determinued to build a grand opera house in London. A site, "One of the best in the West End," has been secured.

* * *

Dr. Johnson's house, No. 17, Gough Square, Fleet Street, is now being repaired. Some alarm has been occasioned by the presence of workmen, but it is satisfactory to learn that the old building is being preserved.

COMPETITIONS.

Usher Hall, Edinburgh.

About 100 sets of plans have been received. Sir Aston Webb, R.A., and Mr. Williamson, the city architect, commenced their inspection on Wednesday last, and the result will be known almost immediately. It has been arranged to display the plans in the large hall of the New Corn Exchange at Gorgie, which, both as regards light and accommodation, is admirably suited for the purpose. The plans and drawings will be displayed on stands specially designed by Mr. Williamson, and erected in the Exchange, and the arrangements will be superintended by Mr. Williamson and also probably by the town clerk. The plans will be numbered according to the order of their delivery, and at the conclusion of the work the doors of the Exchange will be locked and a watch will be set over the premises.

Elementary School, Pontefract.

The Pontefract Education Committee have received the award of Mr. Sydney D. Kitson, of Leeds, the assessor appointed to adjudicate upon the nineteen sets of competitive plans sent in by Yorkshire architects for the proposed new elementary school for Pontefract borough, to accommodate 750 children, at an estimated cost of £9,000. After hearing Mr. Kitson, the Committee accepted his award, which was found to be as follows:—1, Messrs. Tennant and Collins, Pontefract; 2, Mr. James Forbes, Middlesbrough; 3, Messrs. W. H. Thorpe and Son, Leeds.

LIST OF COMPETITIONS OPEN.

JULY 25. NEW ELEMENTARY SCHOOL WINCHESTER. Designs are invited from Hampshire Architects for Elementary School Buildings to accommodate 330 children. Particulars of Thomas Holt, Town Clerk, Town Hall, Winchester.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to Architects practising in Coventry. Particulars given in our issue of March 16th.

SEPT. 5. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

NO DATE. ASHTON-ON-MERSEY. WESLEYAN SUNDAY SCHOOL. Limited to Architects practising within ten miles of Sale. Inquiries to Mr. J. O. Barrow, Barker's Lane, Ashton-on-Mersey.

AUG. 3. PEMBROKE (COUNTY DUBLIN). Tenders are invited by the Pembroke U.D. Council from competent persons for the execution of certain works in connection with the laying-out of Herbert Park, Ballsbridge, Pembroke, Co. Dublin, in keeping with designs, plans, drawings, and specifications, copies of which can be obtained here on or after Saturday, 16th inst, on payment of twenty shillings for each section, which will not be returned. (J. C. Manly, Clerk to the Council, Town Hall, Ballsbridge, Pembroke, Co. Dublin.)

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglican Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. The competition will be confined to architects having an office or residing in the areas of the following education authorities: Cambridgeshire, Isle of Ely, Lowestoft, Norfolk, Norwich, East Suffolk, and Great Yarmouth. Copies of the instructions to architects will be sent to any architect within the prescribed areas upon the receipt of a remittance for 10s., which will be returned when the design is presented, or if the instructions are returned within 14 days of the date of postage. D. O. Holme, clerk of the Governors, Castle Chambers, Norwich.

L.C.C. ARTS AND CRAFTS EXHIBITION.

The exhibition of examples of work submitted for the London County Council's scholarships and exhibitions for students of the arts and crafts, which was opened last Thursday at the Central School of Arts and Crafts in Southampton Row, Holborn, affords, on the whole, very gratifying testimony as to the quality of the work that is being done by the Council in fostering and encouraging taste, talent, and craftsmanship.

The specimens of wood carving are fairly numerous, and only fairly good. With the exception of a carved and pierced panel, in which foliage is gracefully disposed and boldly cut, the work is mostly feeble and timid in design and niggling in execution. In various applications there is a great deal of lettering in the exhibition—incised in stone, painted on signboards, written on paper or vellum, stamped on book-covers, or in the form of letterpress printing; and it is all exceedingly good. There is, however, too much sameness about it; as if there were only one good model in this kind, and as if to get away from the eighteenth century were an artistic crime.

The plaster work is unambitious, but probably all the better for that reason. There are a few panelled ceilings with the usual conventional flowers and cherubim, a few panels in low relief, and all singularly lacking in vigour; a few statuettes and masks, and a model or two—a well-proportioned niche and a classical portico of considerable elegance and symmetry. Among the specimens of stone-carving, special merit is shown in a copy of an Early English capital, in which the texture is somewhat too refined, suggesting the effete file-and-sandpaper finish of less artistic days; and symbols of the four Evangelists for decoration of a font, which, while carefully cut, show no originality of conception or treatment. A quite dignified, altogether graceful, and not entirely conventional piece of modelling has for its subject a sarcophagus for a President of the R.I.B.A. The effigy is finely and feelingly done, but perhaps the figures at each end—representing, respectively, design and construction—are rather disproportionately large, although certainly they are thrown into very graceful attitudes. On one side of the sarcophagus are the heraldic bearings of the person, and on the other the seal of the R.I.B.A., which, while it is a sufficiently decorative object, is of very doubtful propriety in such an application. It is surely more tasteful and tactful to deal in generalities—an observation that perhaps applies with even greater force to the whole model.

The architectural drawings are very few, nor are they at all striking. The design for a picture gallery, museum, and public library comprises a very creditable series of drawings as regards the mere act of putting them on paper; but the design reveals amenity to discipline rather than individuality of conception. This, however, is what one would expect, and even desire, in the work of a student; who, however, has handicapped himself somewhat severely by yielding—quite gratuitously, it would seem—to the modern demand for buildings of mixed functions. We do not contend that a picture-gallery, a museum, and a public library are "irreconcilable antagonisms," but their combination does not make for the highest type of building, and, except under compulsion, they should be kept separate.

The pictures are, both in number and quality, the most considerable section of the exhibition. They are, on the whole, of surprising excellence. One set, by a boy of fourteen, seem to show a dawning talent of great rarity, his massing, grouping, and colouring being, without exaggeration of terms, amazing for so young an artist.

On the whole, it is a most interesting exhibition, and would almost seem to be, indeed, the herald and harbinger of a brighter day for the arts and crafts in this country.

TOWN PLANNING.

Stoke Garden Village. The Earl and Countess of Harrowby last week paid a visit to the garden village estate at Penkhull, and expressed surprise at the progress made since the ceremony of cutting the first sod was performed by her ladyship in April last. On a clear day, Mow Cop, the Wrekin, Stafford Castle, and Cannock Chase may all be seen, but perhaps the greatest pleasure is afforded by the contemplation of the nearer perspective, which includes the well-wooded districts of Keele, Clayton, Hanchurch, and Trentham. Building operations are being furthered with all speed. Plans have been approved by the local committee for about 50 houses, the accommodation and design of which are well varied. The society from the outset have decided that not more than ten houses, on the average, should be built to the acre, and that a generous proportion of the estate should be reserved for open spaces and games. In the Penkhull estate, definite garden boundaries will be given by lines of blossoms or bushes, or some similar means quite in keeping with the spirit of horticulture. Wherever practicable, the houses will be built with a southern aspect, and as far as possible the construction of outbuildings (which results in the formation of narrow enclosed yards) will be avoided. The most convenient facilities of electric light, gas for heating and cooking, and a good water supply are secured, and every house and cottage will have its bath.

Town Planning Conference, October 10-15, 1910. The Exhibition Committee would be glad if architects and others possessing drawings or models illustrating town planning design, which they would be willing to lend for exhibition, would send particulars thereof to Mr. John W. Simpson, secretary-general of the Conference, 9, Conduit Street, Regent Street W., at as early a date as possible. The space at the disposal of the committee being limited, they are unable to accept illustrations of buildings other than such as have a definite connection with the subject of town planning.

CORRESPONDENCE.

[The Editor declines responsibility for the statements made or opinions expressed by correspondents.]

Licentiate R.I.B.A.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Mr. A. N. W. Hodgson's letter on p. 650 of your issue of June 22nd is very refreshing. Mr. Hodgson says that this is a time when reform in the architectural profession is badly needed, and, as all members of the profession, except perhaps an elevated and very small minority, are agreed upon this points the apathy with which this subject is being treated only demonstrates the necessity for reform of some kind.

The letters which you have recently published indicate that the lack of interest shown is certainly not due to the unanimity of the profession in support of the policy of the R.I.B.A. in creating a Licentiate Class (on the existing terms) as a preliminary to the Registration Bill at present being considered by the Council. May I suggest that the apathy is due to a great extent to the opinion that the R.I.B.A. does not intend to produce a Bill for Registration in its usually accepted sense. Registration can only be beneficial to the profession and the art which it professes, if under registration admission to the profession is managed from one central body, and there is no alternative to the R.I.B.A., unless a somewhat cumbersome Central Council is formed, representative of the R.I.B.A. and all other societies, whether at present allied to the R.I.B.A. or not.

The architectural profession has the advantage of observing in the other registered professions certain anomalies which should be avoided, particularly in the medical profession; and in the Registration of Architects, the ideal that no other society should have independent powers of examination for admission to the profession should be adopted if the desire for a really well-organised profession is to be realised.

If Mr. Hodgson's opinion that, "All ideas of personal advertisement and private gain, or petty jealously ought by associates and members of the Institute to be subordinated to the greatest good," is possible of realisation, then a measure of Registration worthy of a great profession is also possible of realisation; but I am afraid that this is quite beyond your A.R.I.B.A. correspondents, on whose lap the gods sleep.

May I point out to Mr. Hodgson that there is no necessity for discussing whether Licentiates of the Institute will write "Licentiate, R.I.B.A." after their names or not. They must write either that in full or nothing, as a reference to the Supplemental Charter as distinguished from the former Charter will show.

H. G. T.

PROPOSED INDIAN MEMORIAL MUSEUM.

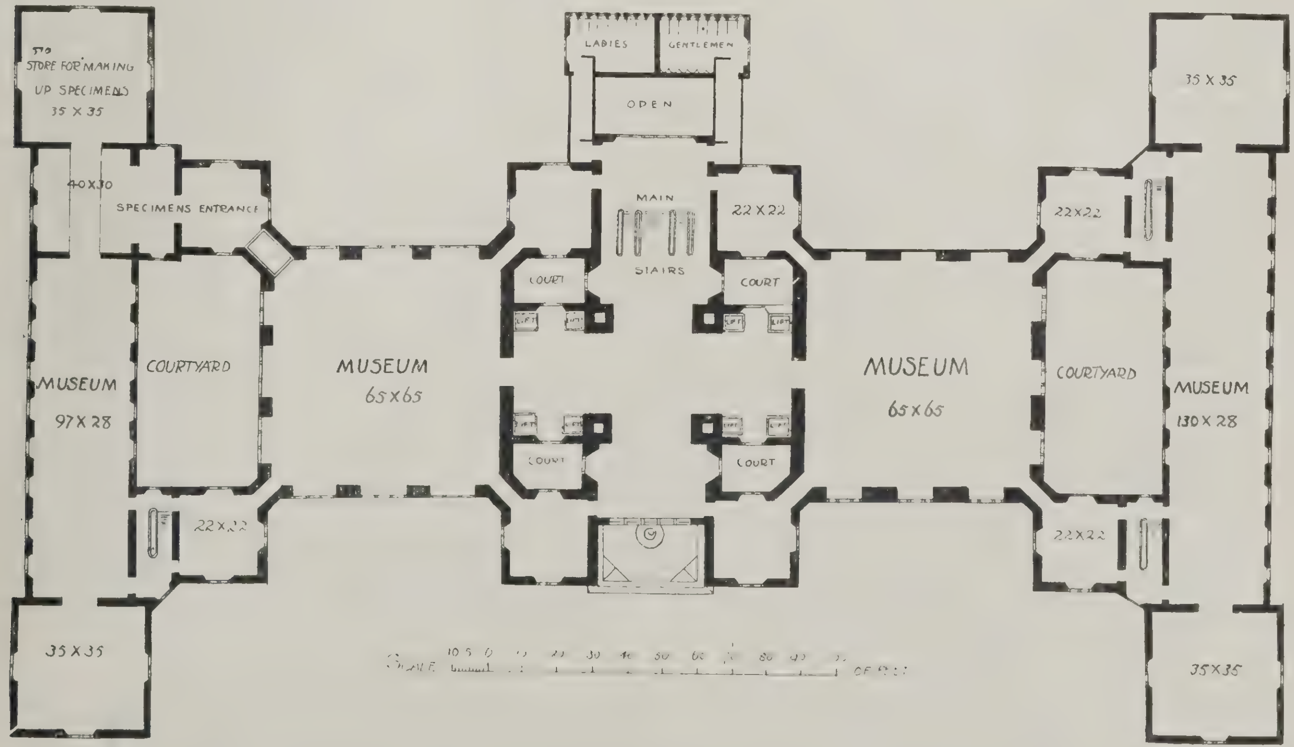
The Indian Memorial Museum which this week forms the subject of our centre plate, is designed as a memorial to King Edward VII. It would occupy the site on which the East India Stores building now stands. A good idea of its extent and appearance may be gained by standing near the statue of Queen Boadicea at the north-eastern corner of Westminster Bridge, and, looking at these stores, imagine a building about one-fourth longer and generally twice the height. The main axis of the structure at right angles to the main axis of the London County Council Hall will face the public garden grounds, which it is proposed to lay out between the two buildings.

The main entrance to the Museum, centrally situated, will have a carriage covered way on the ground floor, and open terraces and steps descending to the grounds from the first floor. A lofty tower rises from the centre of the group containing a capacious exhaust shaft connected by ducts with all parts of the interior. The exhaust will be effected by a large electrically driven fan at the top of the shaft. The warming and ventilating arrangements will make it possible to regulate the temperature of every room.

Centrally situated will be the main stairs with eight passenger lifts working in pairs. The two reception halls, about 64ft. sq. each, with lecture rooms, reading rooms, etc., find place on either side, while beyond and above will be the museum. No part of the building is designed for external show. The domes lighted at the apex will be kitchens and serving rooms for refreshment halls immediately below. Round the central shaft of the tower will be record chambers reached by stairs and lifts, while the entire basement will be given up to the preparation of exhibits, storerooms, and machinery. The building as designed contains nearly 200,000 sup. ft. of floor space, about three-fourths of which will be retained for museum exhibits.

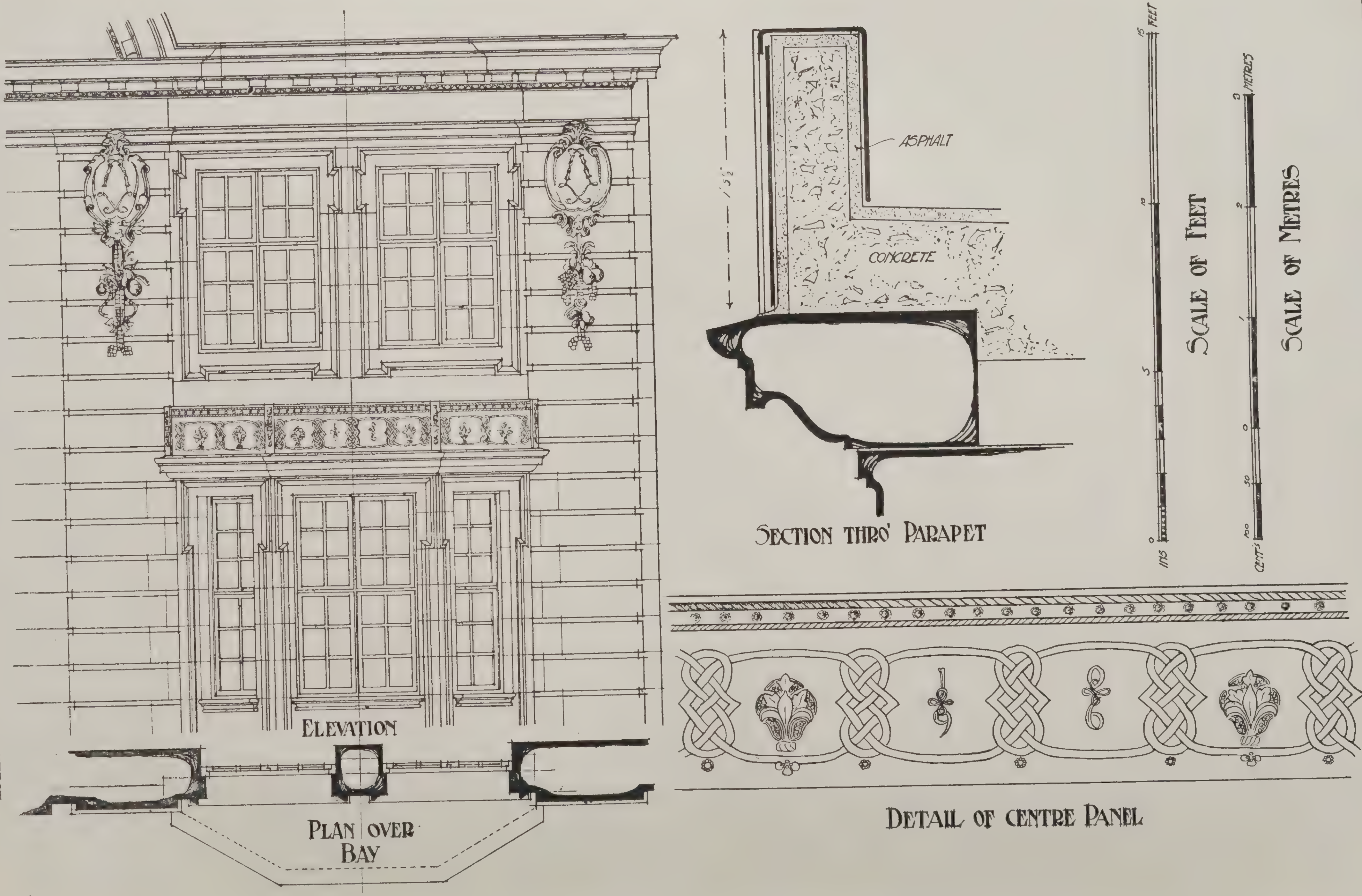
In connection with the existing dock, a powerful lift and cranes for raising museum specimens will communicate with every floor, so that all the heavier goods can be raised at once from river craft.

After the shell of the building is finished in reinforced concrete, it will be entirely covered with ceramic ware, executed by Indian workmen in India, and put together by Indian workmen in England, after the manner of work still to be found in fragments at Gwalior, Dattia, and other places. This work differs from the later tile painting. Doubtless concessions will have to be made both in colour and hardness of gloss to meet the taste of northern folk, and the peculiarities of our more rigorous climate. The colour key would be lapis lazuli and golden brown, on a pale maize ground, heightened with touches of gold, crimson, and green. Such a building could be cleaned once a year with a wet sponge.

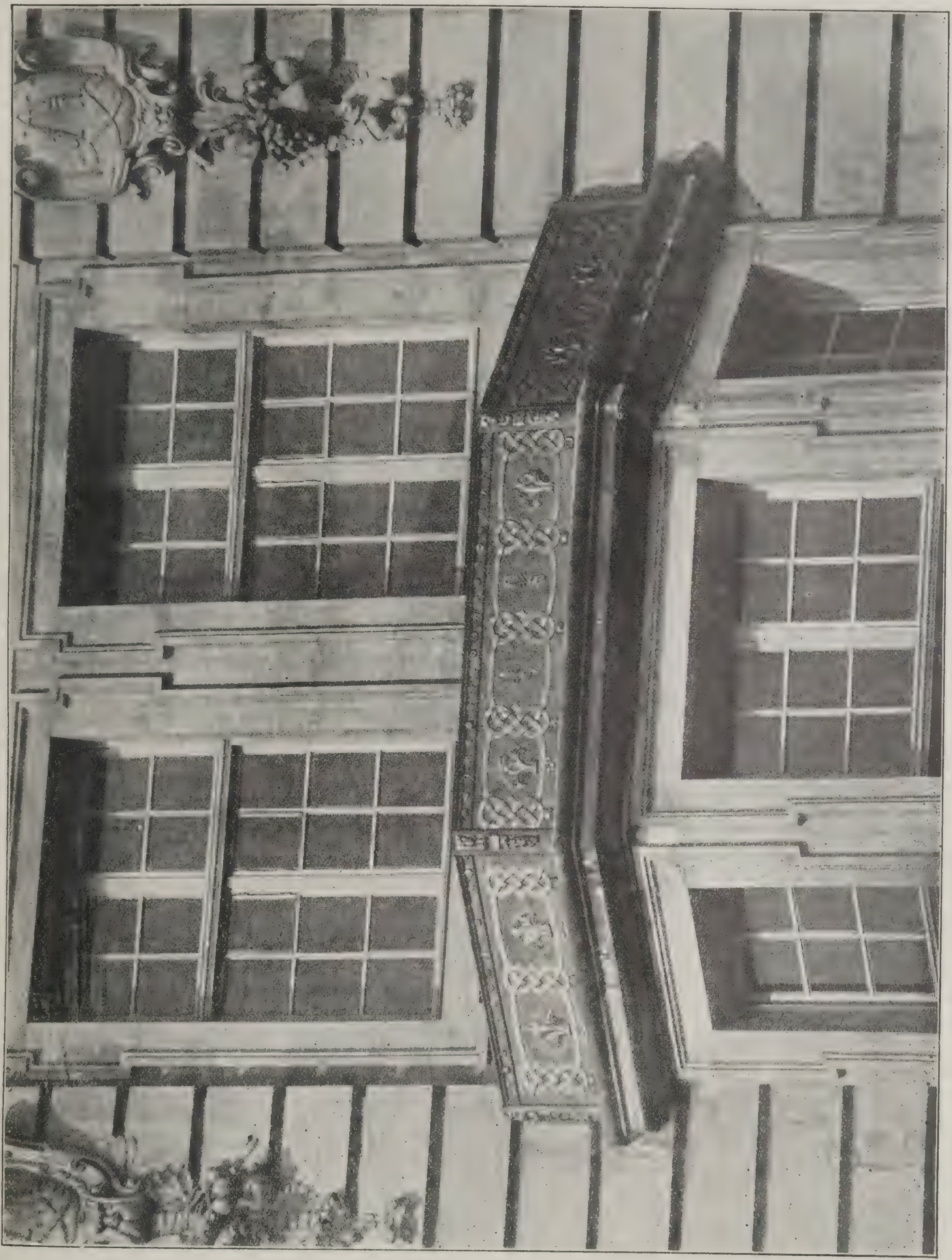


THE PROPOSED INDIA MUSEUM IN LONDON: SKETCH PLAN. ROBERT F. CHISHOLM, F.R.I.B.A., F.S.A., ARCHITECT.

(See Centre Plate.)



LEADWORK ON BAY, PALL MALL, LONDON. E. GUY DAWBER, F.R.I.B.A., ARCHITECT.



This leadwork is on the new building which has been erected for the London and Lancashire Fire Insurance Co., opposite Marlborough House gates. It was executed by Mr. Geo. P. Bankart. The relief is gilded, and thus there is bright a touch of colour which greatly enhances the effect of the work. From the drawing reproduced on the opposite page it will be seen that the lead is laid on a concrete core, with a seating of asphalt.

LEADWORK ON BAY, PALL MALL, LONDON. E. GUY DAWBER, F.R.I.B.A., ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

CONCRETE AND STEEL SECTION

(MONTHLY.)

Safe Stress and Factor of Safety. There is a good deal of confusion accidentally and purposely introduced into practice as regards what is exactly meant by "factor of safety" in the design of structural members. The architect seems quite satisfied as a rule to ask for what he calls a "factor of safety of four." He seems to think that is a very reasonable and proper requirement, and that the factor should be neither less nor more than four. This figure seems to have been established by general practice among engineers. He thinks so, and he adopts it. But he knows neither whether he gets it nor how it is arrived at. Now this, though it may sound very reasonable, is not sufficiently definite—it may or may not give sufficient security, and in general it does not.

The Elastic Limit. We should clearly understand what we really mean by a factor of safety. We could not work up to the ultimate strength, and we must work within the elastic limit, too; for if that is customarily exceeded, the material will gradually be depleted of its strength. In statically loaded structures, as long as we are within the elastic limit of a material, we are safe; but where shock or vibratory loading is to be sustained, then the safe stress is still less. But with brittle materials such as concrete, the elastic limit is not very clearly defined, and approaches closely the ultimate strength, being about three-quarters the latter. Steel, on the other hand, has an elastic limit of about half the ultimate strength. Thus we see that the factor of four reduces to three on concrete and two on steel, if we pay regard only to the elastic limit.

Variations in Manufacture. But the factor of safety has to allow for variations in manufacture, and these are more serious in concrete than in steel. Consequently we require fully the extra factor for the concrete. Then, again, the factor of safety has to cover errors and variations in workmanship, and in reinforced concrete these may be considerably more than in steelwork. Now, when merely a factor of safety of four is spoken of in connection with reinforced concrete, some specialist firms argue that this means that the ultimate resistance of a member shall be four times what it has normally to sustain. But this will not reduce the stress on the materials to the limits we see ought to be imposed from the foregoing remarks. Concrete has a variable modulus of elasticity, varying roughly with increase of stress, as the ordinates to a parabolic curve. Thus at ultimate loading the inner fibres of a beam are taking more stress proportionately than they would have at a lower stress. Consequently, though it may be correct to adopt a parabolic stress strain curve for the ultimate resistance of a concrete beam, it is not fair to do so for normal safe loading in a structure, where the outer fibres should be loaded only to the low stress we consider only safe to impose. The parabolic theory, it should be explained, gives a higher figure than that obtainable from the straight line theory, and means that under normal stress the outer fibres of the concrete would be strained beyond the limit imposed for safety.

Variation in Workmanship. To allow for errors and variation in workmanship we are acustomed to take the value of the concrete at one month as the basis for determining its safe resistance, using a factor of four on the ultimate strength, knowing that as concrete goes on hardening with age we have a factor of five or six at three months. For columns, however, usually a lower limit is taken. For the steel, custom seems to think four on the ultimate sufficient factor. But the taking of a factor of four on the ultimate strength is susceptible of a very reprehensible evasion of the real wishes, though inadequately expressed, of the architect. The load on a structure is made up of its own dead load and the superimposed load. Now, the superimposed load is the only one which can vary; consequently the specious argument is: "Let us take once the dead load and four times the live load, and make the ultimate resistance equal thereto." But if the live load (2w) is, say, twice the dead load (w), we thereby obtain a total load of only 9w, as against 12w, which we should obtain by multiplying the dead and live loads combined by four; or, again, if the dead load should equal the live load, we obtain only 5w as against 8w. We see that in this subtle way the stress on the material in practice is far too high. Therefore, architects and others should be careful to specify exactly what they mean by "factor of safety," namely, by specifying the maximum stresses on the concrete and the steel, and state the "straight line theory" is to be used in calculations. The R.I.B.A. Committee's report on the subject is the best ruling in this country.

BOOKS ON CONCRETE.

Two Books on Reinforced Concrete.

Mr. Middleton's book is ostensibly written for the rudimentary student, and only claims to be introductory to the subject of reinforced concrete. It assumes a knowledge of the elementary principles of statics as applied to the determination of stresses in girders, cantilevers, and roofs. Its form is very suitable to its object, but we do not think the author has succeeded in producing a work that is beyond criticism. His method is to proceed on the usual lines, but he adopts 10 as the ratio of the moduli of elasticity of steel and concrete, and the parabolic distribution for his stress-strain diagrams, which consequently place his treatment out of agreement with generally accepted practice and with most authorities on the subject. He makes various statements which he appears to think practice dictates, whereas they are only blemishes in what might have been a useful introduction to the subject if pure theory only had been attempted. For instance, he says in reference to beams: "It is consequently of little importance where the maximum B.M. occurs, so long as its value is known," and "When a girder carries several loads of different values at different points, it is easier to determine the B.M. graphically than by calculation." Again he obtains a value for the critical percentage of steel on rectangular beams, which, when correctly obtained, also happens to coincide with the economical percentage, and yet says that "Practically so small a proportion is rarely used. It would not be economical." Though the author says: "So far, all has been plane [*sic*] sailing," he seems to get off the course. The author's treatment of shear stresses is inadequate. The treatment of doubly reinforced rectangular beams is incorrect, as the author assumes the steel in compression can be stressed to $7\frac{1}{2}$ tons per sq in. Also the treatment of column footings with a square meshwork reinforcement is incorrect. The notes on systems and practice do not strike us as being very suitable for an elementary student.

"The Elements of Reinforced Concrete Building." By G. A. T. Middleton, A.R.I.B.A. London: Francis Griffiths, 34, Maiden Lane, Strand, W.C. Price 4s nett.

Captain J. G. Fleming's book is an attempt to condense into a convenient compass a mass of practical information and theory. The author acknowledges his indebtedness to Mr. William Dunn, F.R.I.B.A., for much assistance. The book is a very useful summary of the subject, and it should be of real service to the Royal Engineers, for whom, apparently, it was primarily written. Lieut.-Col. J. Winn, who published the first work on the subject of reinforced concrete in this country, issued by the same publishers as this book, contributes a preface. In such a short treatment of the subject, considering the multiplicity of systems, it would have been well to avoid reference to particular systems, and to deal only with the theory and practice in a general way. The author does injustice in omitting, perforce, many other systems of merit. He should have dealt with all or none. We are surprised that, whereas the Concrete Institute is referred to in the preface, the author did not adopt its standard notation, which would certainly have made things more intelligible. The method of calculating deflections given in the book may be practically fairly new, but it embraces the fundamental error of equating the moments of the total compression and total tension about the neutral axis instead of the total compression to the total tension. The book is certainly a useful summary of data, and may be studied with advantage by students beginning the subject, as well as by those who have advanced some way.

"Reinforced Concrete," by Captain J. Gibson Fleming, R.E. Chatham: The Royal Engineers' Institute. Price 3s. 6d. nett.

A Specification for Reinforced Concrete.

Messrs. Edmond Coignet, Ltd., have issued in pamphlet form a standard specification for the execution of works in reinforced concrete on the Coignet system. The proportion of cement is specified by weight, which is preferable to specifying it by volume; the sand and stone are, however, stated in volumes. Another clause to be noted is the provision for the use of emergency props during tests to prevent any excessive deflections which may be due to bad workmanship or other causes.

THE ROYAL LIVER BUILDING, LIVERPOOL.

[The following details of one of the largest office buildings in the United Kingdom, constructed of reinforced concrete and presenting many special points of design, particularly in the carrying of very heavy concentrated loads, will be of special interest to readers of this section.]

AMONG the many works executed in reinforced concrete in England during the last few years, one of the most interesting is undoubtedly the Royal Liver Building, Liverpool, now practically completed. This building takes its name, as does Liverpool, from the word Liver, which is the name of a mythological bird which was supposed to have haunted the pools in the district now known as Liverpool. The building is bounded at the back by the Strand, on one side by Water Street, on the other side by St. Nicholas Place, and in front by the space known as Pierhead. The structure is entirely of reinforced concrete, with the exception of the exterior curtain walls, which are of granite.

The building is a monolithic reinforced concrete skeleton frame, the columns, beams, arches, and floors all being carried out in that material and bonded together. Light in the interior is secured by two spacious wells, 58ft. square. Stairways are provided, and intercommunication between the floors is secured by an installation of 14 passenger lifts and two goods lifts. Roomy shafts have been built for pipes and electric cables, for ventilation and for reception of the boiler chimney. Interior partition walls in most cases have been omitted, as partitions will be erected to suit tenants.

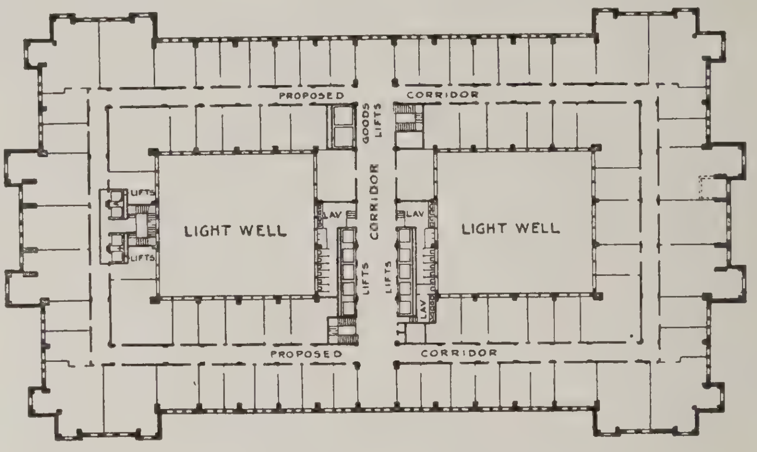


Fig. 2.—Typical Floor Plan.

The structure is designed as an office building, and is owned by the Royal Liver Friendly Society, who are sub-letting some portions of it. In plan, the building is 310ft. by 178ft., while the height to the main roof is 170ft. The domes of the two main towers are 290ft. above pavement level, while the total height is 320ft. from the basement floor level to the top of the towers, and about 360ft. from the bottom of the foundations to the top of the Liver bird which is to adorn the towers. There are 11 storeys below the main roof, and 6 storeys in the towers, making a total of 17 storeys. It has thus justly been termed the first English skyscraper, and standing as it does close to the Mersey in the vicinity of Prince's Landing Stage, a full view of the building is obtained from the river, presenting to arriving Americans a suitable reminder of their country—the land of skyscrapers.

It stands in a position formerly occupied by the St. George's Dock; and as the made ground was absolutely incapable of supporting the enormous loads, concrete foundation piers were sunk down to the old red sandstone 32 to 47ft. below the normal surface level. The total amount of excavation taken out for the basement was about 50,000 cubic yards.

As evidence of the quickness with which reinforced concrete work can be carried out, it may be mentioned that a whole floor, including 130 columns and 3,800 square yards of flooring, were completed in 17 days. The whole building was commenced in May, 1908, and the reinforced concrete work finished by the end of 1909. The architect was Mr. W. Aubrey Thomas, and the contractors were Messrs. Edmund Nuttall and Co., of Manchester, authorised contractors for the reinforced concrete work on the Hennebique system.

As regards the illustrations given, the frontispiece to this issue is a general view of the building from the architect's perspective drawing. Fig. 1 is a cross-sectional elevation, showing the heights of the various floors, etc. Fig. 2 shows a typical floor plan with the position of lifts and office space, etc. Fig. 3 is a section of the retaining wall. This wall involved some considerable thought. The ground was quite unfit to sustain the weight of concrete walls built in the ordinary way.

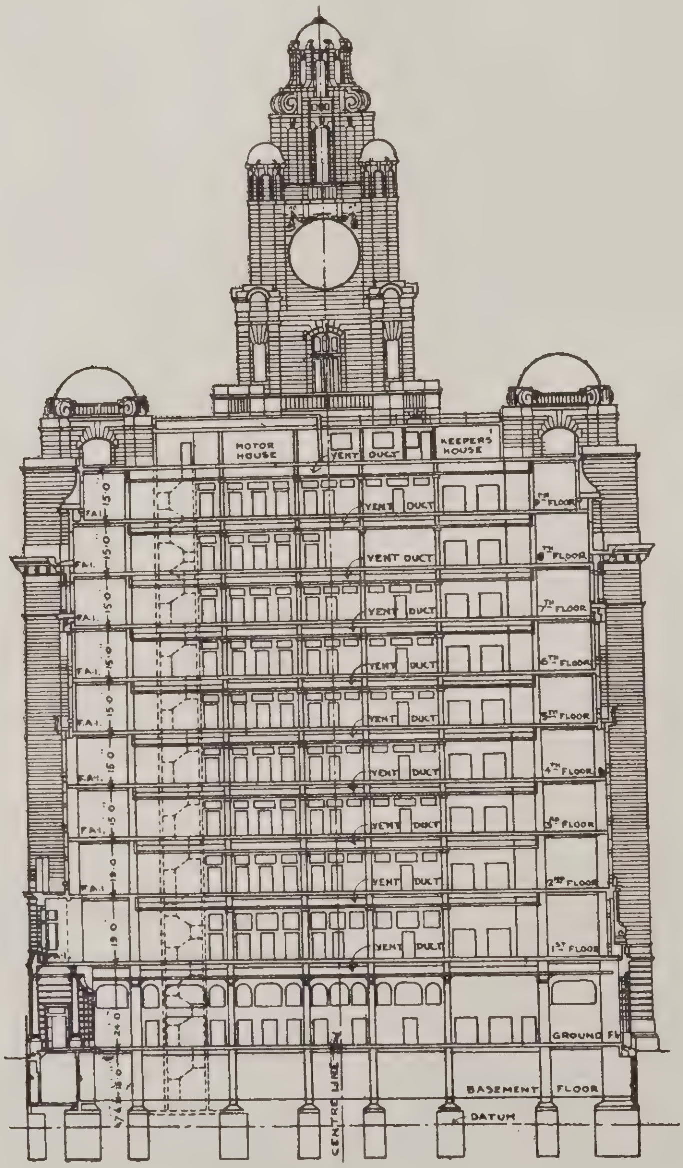


Fig. 1—Sectional Elevation.

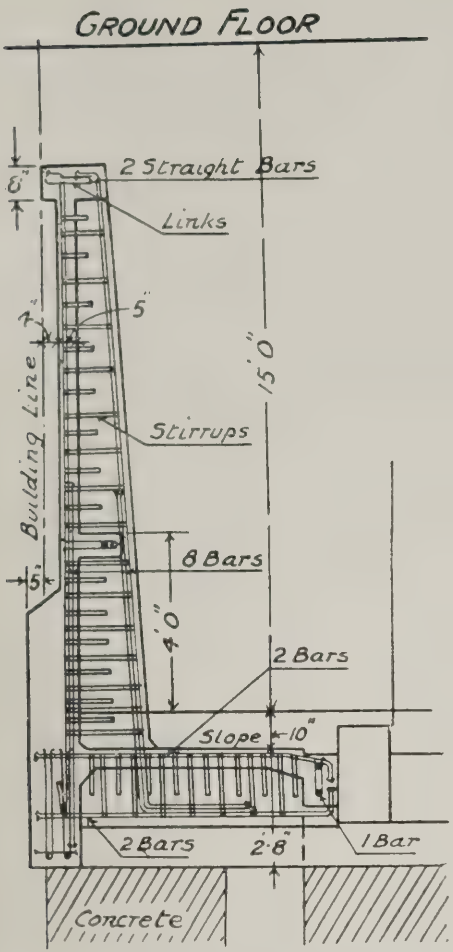


Fig. 3.—Section of Retaining Wall.

It was decided therefore to construct reinforced concrete beams between the outer row of foundation piers, these beams being incorporated with the retaining walls and supporting them. Where at certain points there were no piers available to carry these beams, cantilevers were put in, extending some 11ft. from the main columns, sufficiently strong to act as intermediate supports to the beam carrying the retaining walls. These cantilevers also support the basement flooring.

The retaining walls and the connecting basement floor being completed, the entire site was converted into an immense watertight compartment, this being particularly necessary as the ground water level frequently rises to a height of 10ft. above the basement floor.

The double-page reproduction of the ground floor plan shows the general disposition of the building, the masonry curtain walls being blocked in and the reinforced concrete shown hatched. The main supports are clearly seen on this plan. A section showing the system of reinforcement is given in Fig. 11. This particular support being one of those that sustain one of the main towers, carries a total load of 1,500 tons. These main columns vary in cross section from 3ft. square (where the load is 900 tons) to 3ft. by 8ft. at the basement floor level (load, 1,500 tons). The outer row of supports carry the beams with the granite curtain walls, as well as part of the floor loads. At the top their dimensions are 12in. by 14in., increasing to 1ft. 9in. by 8ft. at the base, where the load is over 750 tons on each.

Figs. 4, 5, and 6 are fully described under the illustrations.

Beam D (Fig. 5) abuts at this point. X

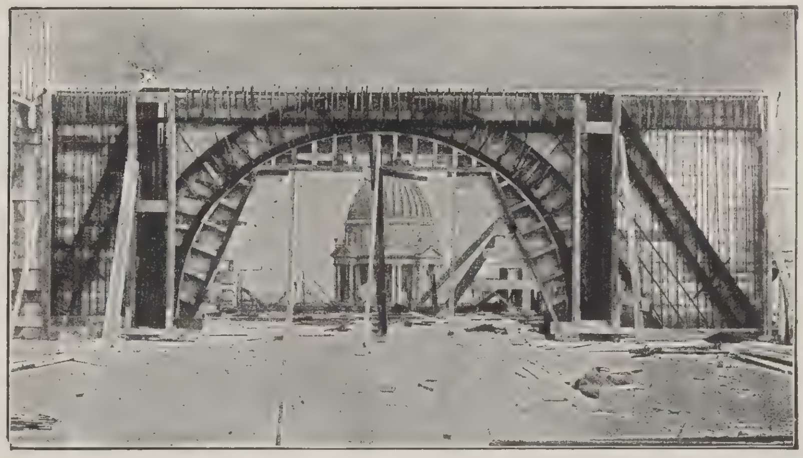


Fig. 4.—This illustrates beam E, which carries a portion of the loads of beam D (see Fig. 5) and other concentrated loads, making a total of 290 tons.

The arches (type "L"), one of which is shown in Fig. 7, are employed to carry the main towers. A considerable proportion of the column weight is carried by arches of this type, of which details are given under the diagram. They have a clean span of 58ft., and a rise of 32ft., a height covering the 9th to the 11th storeys. They support several beams in addition to six concentrated column loads, amounting in all to the immense total of 1,480 tons per arch.

The corner domes (23ft. in diameter) are carried by a frame cased in granite. They are of reinforced concrete, varying in thickness from 6in. at the base to 4in. at the crown. The domes will be covered with copper.

Fig. 8 shows the arrangement of beam and cantilevers carrying the exterior main cornice, which extends right round the building at the eighth floor level.

A typical floor beam is shown in Fig. 9. Most of these main floor beams are constructed with parallel sides, the concrete being reinforced by bars and stirrups arranged as customary in this principle of reinforcement.

Beams of type K, one of which is shown in Fig. 10, are 51ft. long, with a clear space of 41ft. 3ins. between supports, and a cantilever projection of 3ft. 9in. at one end. A load of 1,480 tons is concentrated at two points on each beam of this type, which carry distributed loading, in addition, of 100 tons, this very considerable load being transmitted by means of the main columns to the foundations.

Fig. 12 shows a general view of the foundation works, and the form work for the main supports.

Fig. 13 shows the completed reinforced concrete skeleton before the building of the granite curtain walls.

Fig. 14 is a view of the building as it appeared on April 28th, 1910. It will be noted that the curtain walls have been carried up to the 8th floor level, just below the cornice. Owing to the reinforced concrete structure being, like a skeleton steel frame, independent of the curtain walls which are carried by it, the walls were started on three different levels at once—the ground, third, and seventh floors.

The whole of the granite facings have been fixed by Messrs. A. and F. Manuelle, of London. The granite is cut to take the concrete work, and is tied by metal cramps. The amount of granite employed is, of course, enormous, there being some 300,000 cubic feet, weighing, approximately, 25,000 tons. The small amount in the basement is Dalbeattie; the main bulk is Norwegian, with a little Aberdeen. The dressings are graduated from fine axed on the lower floors to rough-picked faces for the top portions of the towers. The carved work, all in Norwegian, comprises cartouches at first floor level above the portico on the river front, the central feature over the Water Street entrance and key stones to the main windows on the ground floor. There is a good deal of carved work, also, around the clock faces. The building is being installed by Messrs. R. Crittall and Co. with their new patent panel system of heating.

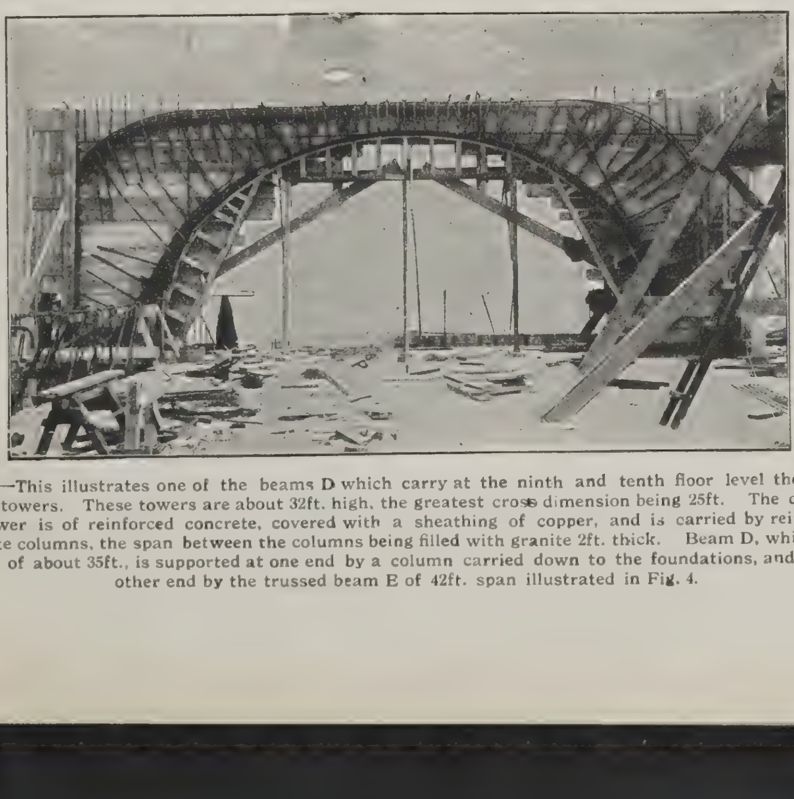
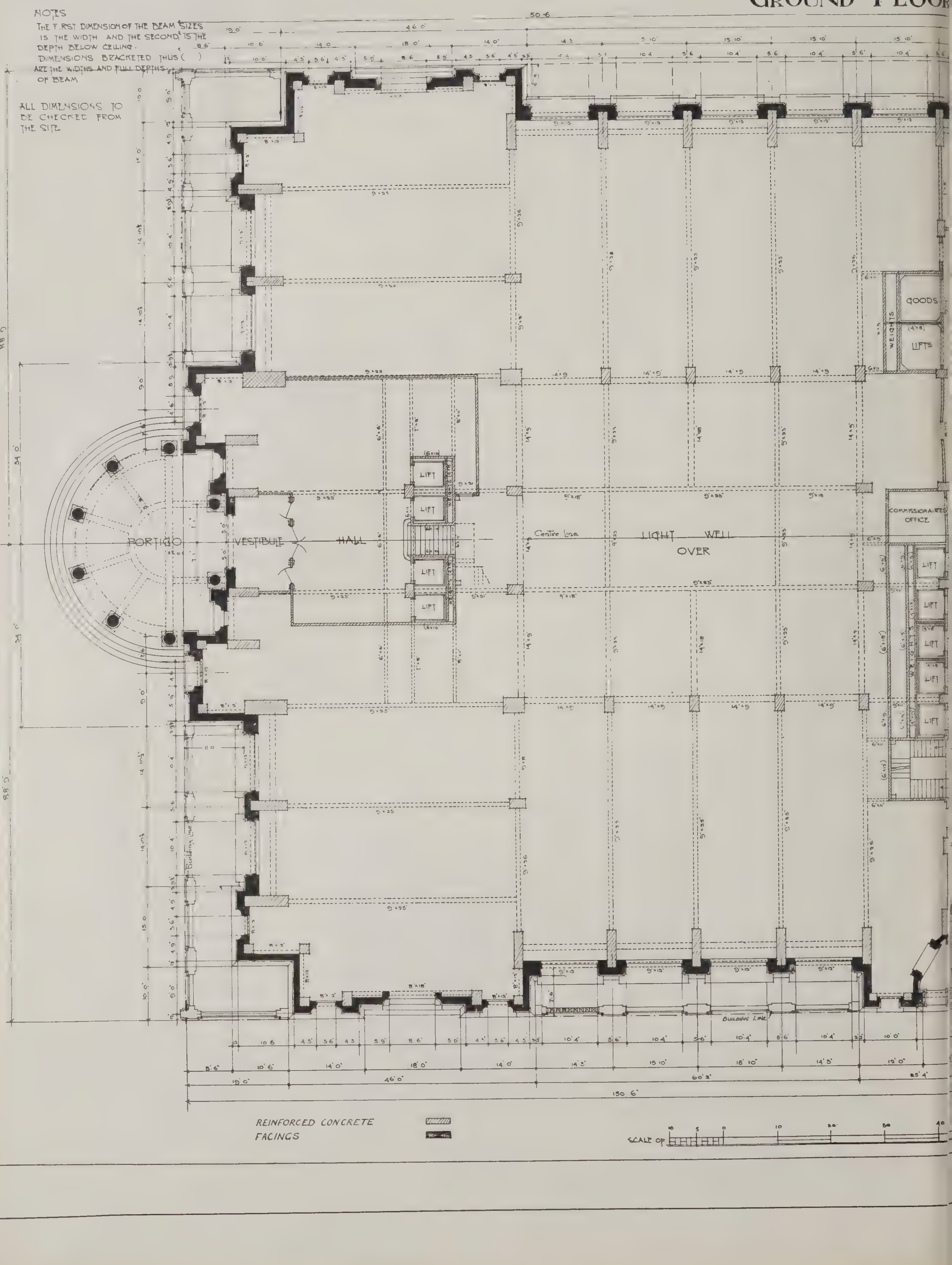


Fig. 5.—This illustrates one of the beams D which carry at the ninth and tenth floor level the small corner towers. These towers are about 32ft. high, the greatest cross dimension being 25ft. The dome of the tower is of reinforced concrete, covered with a sheathing of copper, and is carried by reinforced concrete columns, the span between the columns being filled with granite 2ft. thick. Beam D, which has a span of about 35ft., is supported at one end by a column carried down to the foundations, and at the other end by the trussed beam E of 42ft. span illustrated in Fig. 4.

ROYAL LIVER BU

GROUND FLOOR



G LIVERPOOL

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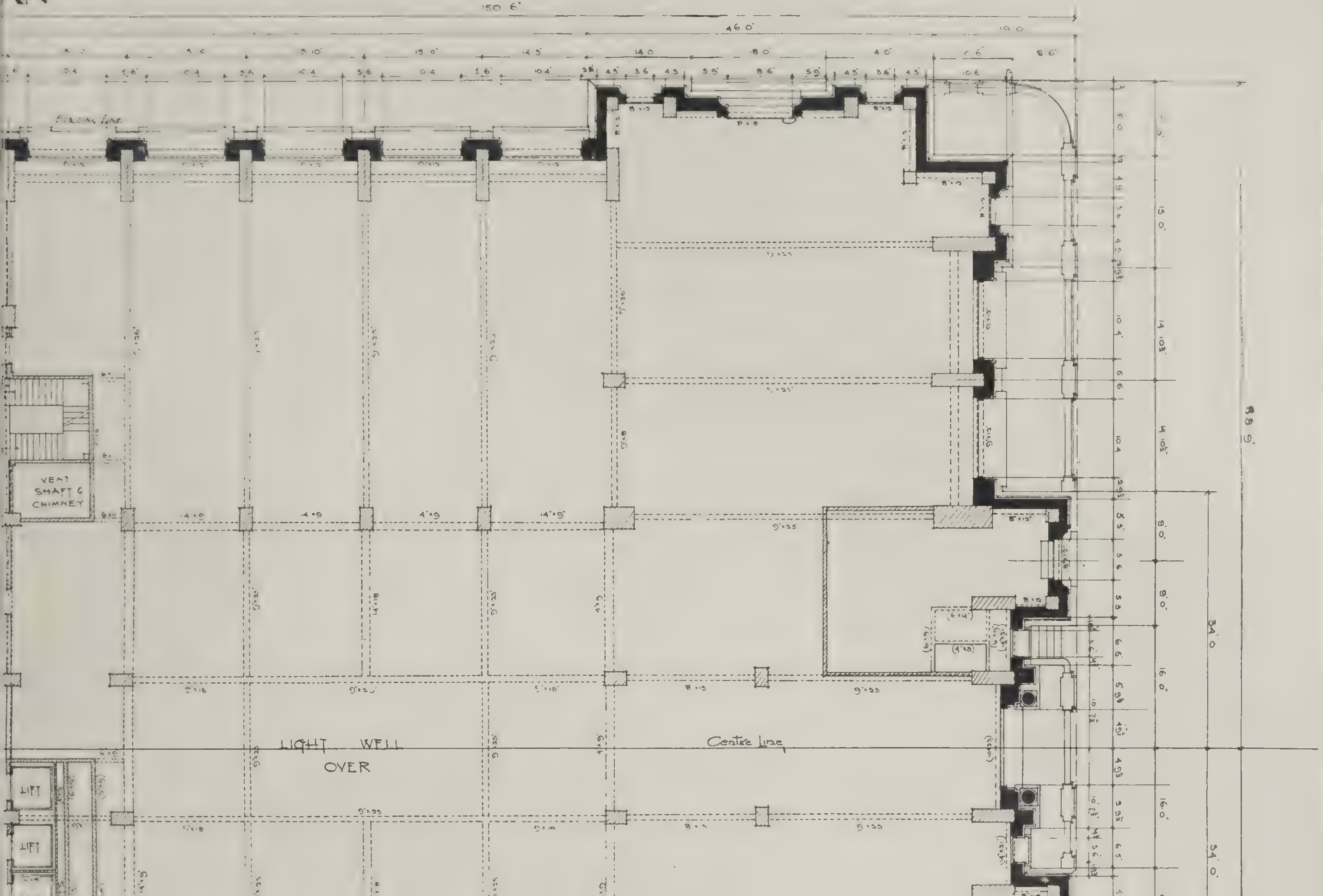

W. AUBREY THOMAS. ARCHITECT

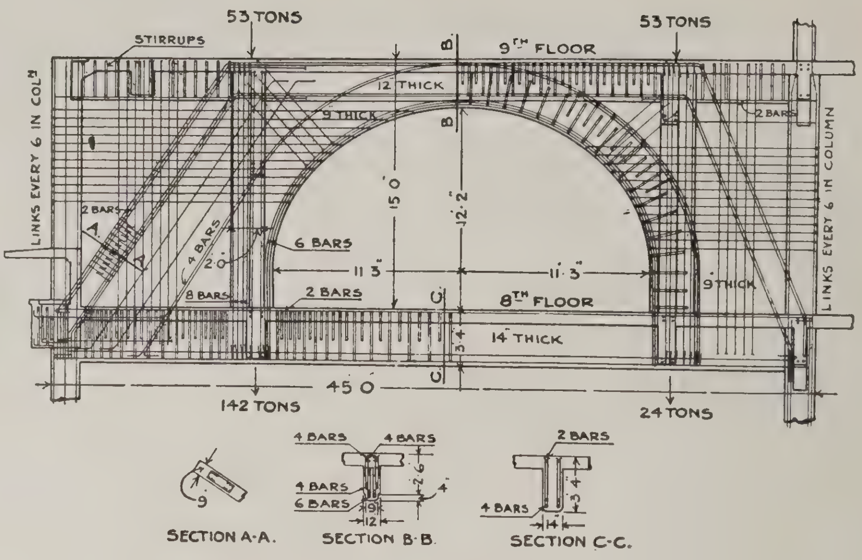

Fig. 6.—This illustrates design of beam E mentioned in Fig. 4.

THE ROYAL LIVER BUILDING, LIVERPOOL.

THE CONCRETE INSTITUTE.

Visit to Chingford Reservoir.

By the courtesy of Mr. William B. Bryan, M.Inst.C.E., Chief Engineer of the Metropolitan Water Board, the members of the Concrete Institute visited the new Chingford Reservoir Works on Wednesday, June 29th. The members assembled at Enfield Lock Station at 10.45 a.m. sharp, when the party were conducted over the Works by Mr. Charles F. Marsh, M.Inst.C.E., and Mr. T. C. Deverell, M.Inst.C.E., resident engineer.

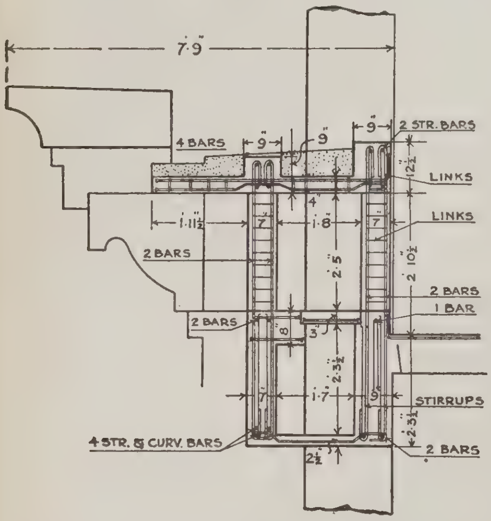

Fig. 8.—This section gives details of the reinforced concrete beams and cantilevers forming the backbone of the main cornice running round the building at the eighth floor level. Projecting more than 6ft. beyond the exterior face of the walls, the cornice consists of a reinforced concrete framework, with cantilever slabs, between which are inserted stone dentils at distances of 18in. apart, and upon them are carried the upper blocks of the cornice proper.

THE ROYAL LIVER BUILDING, LIVERPOOL.

The reservoir having been visited, lunch was served at about 1 p.m. at the Fountain Inn, and afterwards the party viewed the river diversion works, returning from Angel Road Station on the conclusion of their visit. Chingford Reservoir will contain about 3,000 million gallons. The water area is 416 acres, and the length of embankment about 4½ miles. The embankment is being formed of material excavated from within the reservoir. The top portion of the inner slope will be lined with concrete, and this for a distance of 4ft. below top water will be faced with brickwork. The lining will consist of a brick-faced vertical wall 3ft. high, with concrete coping, which will be rounded off at the bottom to meet the lower portion of the lining which is formed on the slope. The water will be pumped into the reservoir from the River Lea and River Lea Navigation at the north end through five lines of 48in. cast-iron pipes passing up the outer slope and discharging into a chamber at the top of the embankment. From this chamber the water will pass over a long granite sill down an inclined slope into a stepped channel. The outlet from the reservoir will be at the south-east corner. The valve houses on the outlet shafts will be constructed of concrete and have domed roofs. The inner shaft will be connected to the reservoir embankment by a reinforced concrete bridge 6ft. wide between parapets, and 20ft. span. The parapets of this bridge will be reinforced to act as girders supporting the decking. From the outer shaft the water will pass through a line of 36in. pipes to a chamber controlled by an automatic valve on the south side of Marsh Lane. From this chamber an outlet channel conducts the water for a distance of about 2 miles to an existing basin, whence it can be passed to the other reservoirs of the Metropolitan Water Board's Eastern District and thence to the filter beds at Lea Bridge. From the outer shaft of the reservoir there will be a further line of 36in. scour pipes discharging into the River Lea Diversion.

The construction of the reservoir necessitates several considerable subservient works. The River Lea has been diverted for a distance of 3 miles through a channel 55ft. wide with side walls of concrete faced with Kentish rag stone and coped with concrete blocks. Intake channels are also in course of construction from the River Lea and River Lea Navigation to the site of the pumping station at the northern end of the reservoir. A channel 3½ miles long has been constructed along the eastern side of the works to divert the contaminated water from the hillside, and discharge this below Flanders' Weir into the old river channel. An overflow weir has been constructed to pass flood waters from the Lea Navigation discharging into the old River Lea below the reservoir. The public road crosses this channel on a concrete bridge. The towing-path crosses the overflow weir on a reinforced concrete bridge; it also crosses the weir supplying water to the pumps from the Lea Navigation by a similar bridge. The Lea Valley road has been diverted for a length of 1,000 yards, the surface of the diverted portion being of tar-macadam.

The intake channel from the River Lea and the River Lea Diversion are crossed by five reinforced concrete arched bridges, one of which—that carrying the public road over the Lea Diversion—has three spans of 27½ft. with 5ft. rise, and will be on the skew. The other bridges have single spans, one of 50ft. and the other three of 51ft., the rise in all cases being 5½ft. The width of the public road bridge will be 40ft. between parapets, and that of the other bridges 12ft. between parapets. One

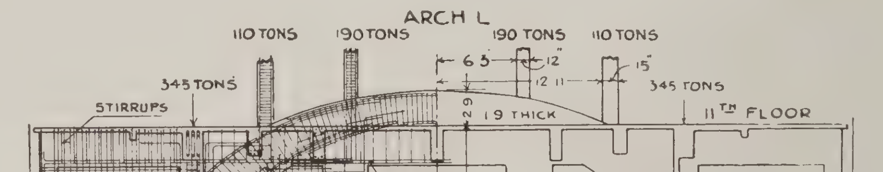

Fig. 7.—There are five floors above the main roof in each of the corner towers, and as the cross section downwards of these increases from floor to floor it was necessary to carry separately the loads from each floor by beams resting on columns, which in turn transmit the load to the floor beams immediately below, and so on down to the ninth floor level, where the total load due to the granite walls, reinforced concrete framing, reinforced concrete floors and wind pressure is equivalent to 3,200 tons. At this level there are four columns, which transmit the load to the basement. To support this load (i.e., 3,200 tons) at the ninth floor there are for each tower two arches L, of about 60ft. span, whose rise (32ft.) is the height between ninth and eleventh floor levels, supported by two beams K, with a span of about 46ft. This figure illustrates design adopted for one of the arches L. This arch, as will be seen, supports the enormous weight of 1,480 tons (all concentrated loads).

THE ROYAL LIVER BUILDING, LIVERPOOL.

of the 55ft. span bridges is for foot traffic only, being of a different design and only 6ft. wide between parapets.

The British Aluminium Company's Works.

A meeting of the Concrete Institute was held at the Royal United Service Institution, Whitehall, London, S.W., on June 30th, at 8 p.m., Mr. H. D. Searles-Wood, F.R.I.B.A., M.C.I., in the chair.

After Mr. Herbert E. Steinberg, Assoc. M.Inst.C.E., and Mr. Louis Tebbutt had been elected members of the Concrete Institute, Mr. A. Alban H. Scott, M.S.A., M.C.I., read a paper entitled "The British Aluminium Company's Works at Kinlochleven," which was profusely illustrated by lantern slides. The following is an abstract of the paper:—

Aluminium, the author stated, was now obtained electrolytically from bauxite, a clay containing a high percentage of aluminium oxide. The British Aluminium Company were now producing metal containing 97·3 per cent. pure aluminium. They had extensive bauxite mines in France and at Larne. The alumina was extracted from the bauxite at Larne, and from there sent to Foyers and Kinlochleven to be made into the commercial form of metal. The Company had also extensive works at Stangfjord in Norway, Orsières in Switzerland, and at Greenock, and their rolling mills were situated at Milton in Staffordshire. The total waterpower at the various works exceeded 60,000 h.p.

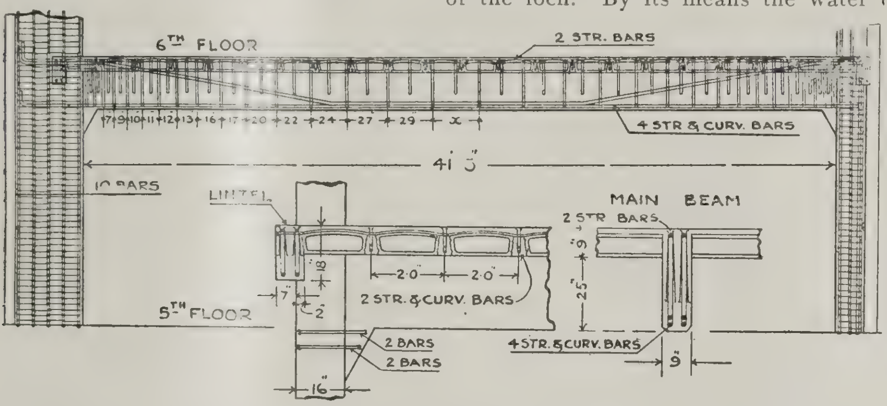

Fig. 9.—This beam with parallel sides is adopted for most of the floors. This particular example is at the sixth floor level. Its dimensions are 41ft. 3in. between supports, 9in. wide and 34in. deep, including thickness of floor.

THE ROYAL LIVER BUILDING, LIVERPOOL.

Kinlochleven is situated on the west coast of Argyllshire, and is separated from the county of Inverness by the Loch and river Leven, access being gained to the works by train so far as Ballachulish and Glencoe, thence by steamer up the Loch Leven, for a distance of about 9 miles, the new village and works being situated, as the name implies, at the top of Loch Leven. This district is one of the most rugged in the Highlands, and is noted for its magnificent scenery. The only road leading into Kinlochleven is from Fort William, a distance of 24 miles, and this road is not available for heavy traffic, nor was it available for use as access to the site during the course of construction of the works.

Kinlochleven works were started early in 1905, and the work was rapidly carried through, an average of about three thousand men being employed on the works continuously, and during the finer months of the year over five thousand were engaged upon the work.

Consultants and Contractors.

The consulting engineers for the dam, hydraulic works, and wharves were Messrs. P. W. and C. S. Meik; for the electrical work, Sir Alexander Kennedy and J. W. Jenkins. The contractors of the dam and hydraulic work were Messrs. Sir John Jackson and Sons; for turbines, etc., Messrs. Jens Orten Boving and Co.; for the generators, Messrs. Dick, Kerr, and Co.; for the telephones and street lighting, Messrs. Johnson and Phillips; for the switchboard, control panels, and motors for No. 2 Factory, Messrs. Siemens Brothers; for the village, power-house, No. 1 Factory, and staff houses, Messrs. McLaughlin and Harvey; and for No. 2 Factory, Messrs. McAlpine and Sons.

The author of the paper had the honour of being architect for the factory buildings and for the village, staff houses, etc. Mr. W. Murray Morrison, M.Inst.C.E., was the general manager of the Company, under whose direction the whole of the work was carried out.

The systems of reinforced concrete used were Hennebique, Coignet, and Expanded Metal. The cement used was supplied by the Associated Portland Cement Manufacturers (1900), Ltd.

The Dam.

The dam has been constructed at a distance of about 5½ miles from the head of the loch. By its means the water of three existing lochs was thrown into one. The top of the dam is 1,068ft. above the sea-level, the level of the three original lochs being 992ft., 1,022ft., and 1,028ft. respectively. The catchment area formed by their unification is from 50 to 60 sq. miles, and as the rainfall is about 100in. per annum in that part of Scotland, the possibility of a shortage of water, and its harmful consequences, is very remote. This gives the Kinlochleven works an advantage over a great many other hydro-electric stations, which are liable to run dry in summer.

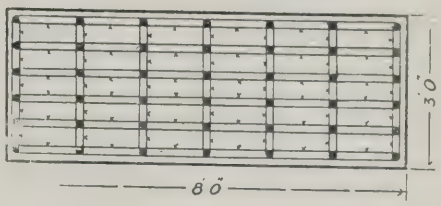

Fig. 11.—Plan showing reinforcement of main supports.

THE ROYAL LIVER BUILDING, LIVERPOOL.

The dam is about three-quarters of a mile long and 86ft. high in the centre, the width at the bottom being 63ft. and the width at the top 10ft. The whole of the dam is constructed of concrete. The foundations are sunk 5ft. 6in. into the solid rock. The dam is surmounted by a tower, from which the valves at the outgoing conduit are controlled.

The water is conveyed from the dam along the mountain-side for a distance of about 3¾ miles in a reinforced concrete conduit, the inside section being 8ft. by 8ft., and the conduit has a steady fall of 1ft. in 1,000ft. Along the length of the conduit the various side streams from the mountains are picked up so as to take advantage of all the water available; the main penstock chamber is at the junction of the concrete conduit, and the six 39in. diameter iron pipes form the main pipe line. Here the main control of the water supply is operated.

The pipe line, which is about 1¼ miles in length, conveys the water down to the main distributing valves, which are placed immediately above the entrance of the water to the power-house, the water passing through these valves to the bus pipes and thence to the distribution pipes (which are below the general level of the floor of the power-house) direct to the nine high-pressure turbines (Pelton wheel type) of over 3,000 h.p. each, and two 930 h.p. turbines. An output of 20,000 kw. at 250 to 275 v. is secured by means of 18 generators, each capable of running at full load

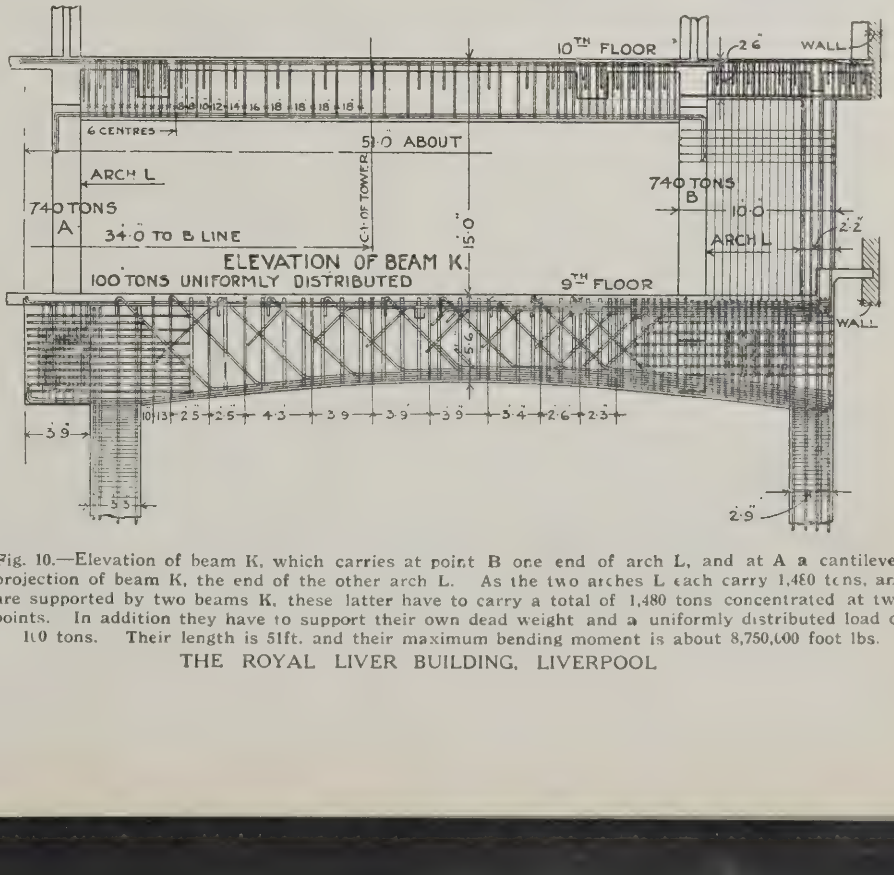

Fig. 10.—Elevation of beam K, which carries at point B one end of arch L, and at A a cantilever projection of beam K, the end of the other arch L. As the two arches L each carry 1,480 tons, and are supported by two beams K, these latter have to carry a total of 1,480 tons concentrated at two points. In addition they have to support their own dead weight and a uniformly distributed load of 100 tons. Their length is 51ft. and their maximum bending moment is about 8,750,000 foot lbs.

THE ROYAL LIVER BUILDING, LIVERPOOL

day and night continuously for months at a time, at a normal speed of 300 r.p.m.

Site, Power House, and No. 1 Factory.

The site before any works were commenced was simply in the usual condition of the uninhabited Highlands. The ground was very varied and treacherous, large tracts of peat overlying portions of the site. The levels also were extremely awkward for aranging the railway, village, and factories on convenient sites, and a very large amount of excavating, not only in soft material, but also in some of the very hardest stone, had to be carried out.

The foundations of the power-house are constructed of ordinary plain concrete, and in these foundations are provided the busbar chase, tail-race, and subways for the pipe connections. The floor of the power-house is tiled with red Cheshire tiles and and Hawkesley's treads. A powerful electric crane is installed here, so that any part of the machinery can be moved by the crane. The roof is formed of steel trusses, steel and wood purlins, roof-boarding, felted and slated with Ballachulish slates. The main outside walls are constructed of local stone, the dressings being of Kintallen granite and artificial stone made with the local rock.

No. 1 Factory, which contains all the electrical furnaces, is built of similar materials, and covers a very extensive floor area. The workshops are arranged along one side of No. 1 Factory, and abut on to and have access from the power-house and furnace-room. The main stores will be built on the south side.

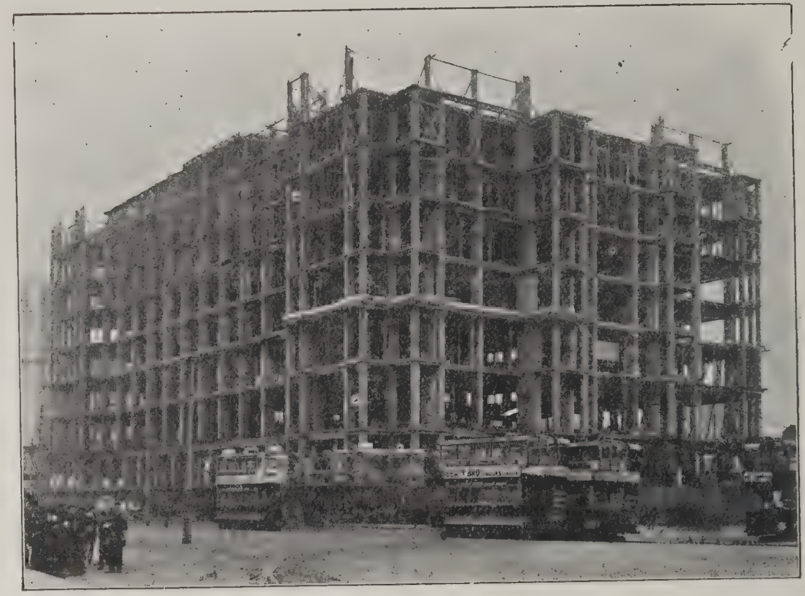

Fig. 13.—The reinforced concrete skeleton before the building of the granite curtain walls.
THE ROYAL LIVER BUILDING, LIVERPOOL.

The Carbon Factory.

The process for manufacturing aluminium requires a great amount of carbon, and in order that a plentiful supply of electrodes may be always to hand, the British Aluminium Company have erected a carbon factory for its manufacture at Kinlochleven. In constructing this building a very treacherous subsoil was come upon, which resulted in part of the foundations having to go about 55ft. below the general floor-level. The whole of the foundations are formed of reinforced concrete on the principle of spread foundation slabs stiffened by cross and longitudinal beams. The columns are carried from the foundation slabs up to the underside of the top beams, these beams carrying the very heavy stone walling; the columns carry

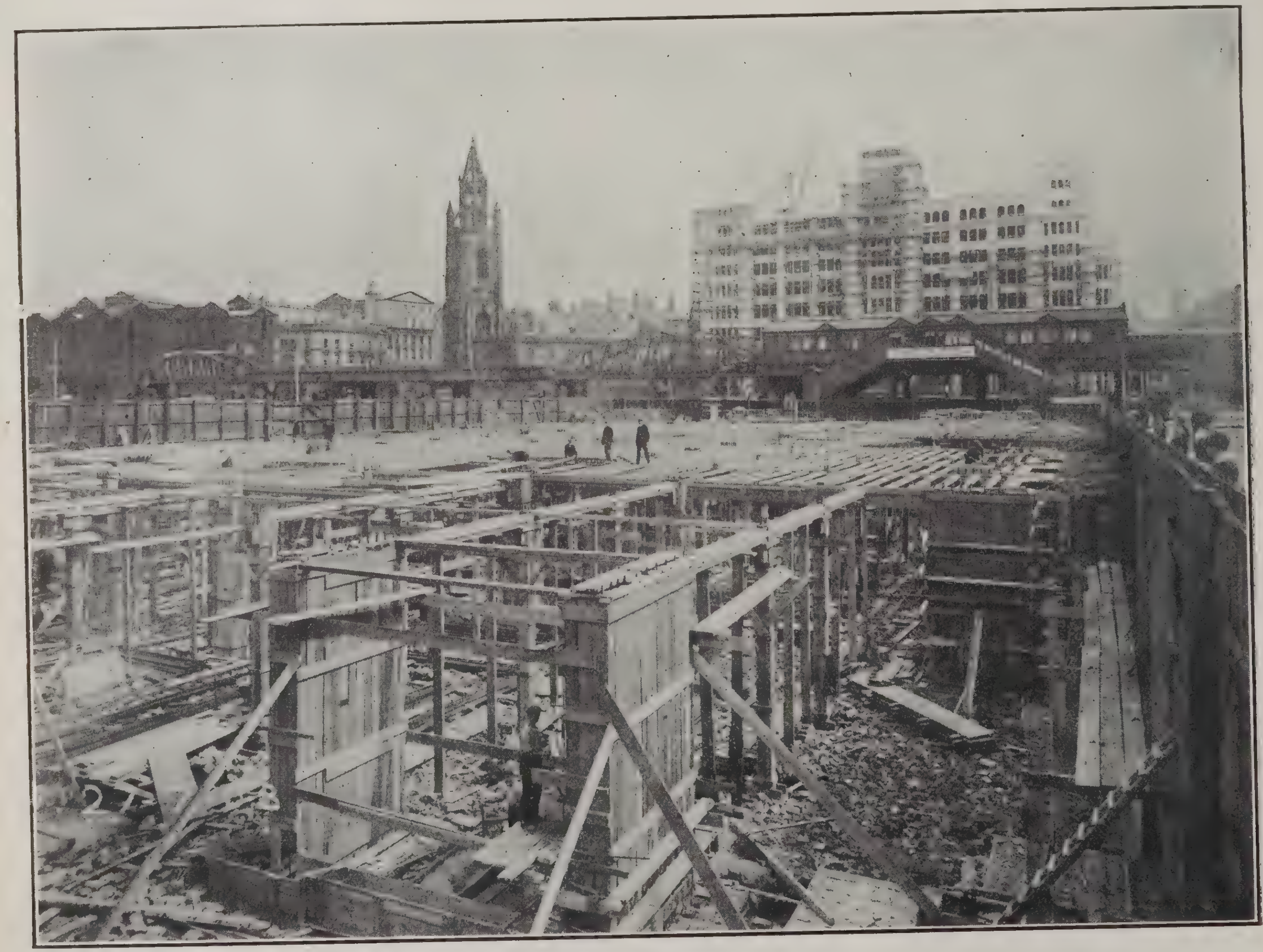

Fig. 12.—The foundations, showing form work for main supports.
THE ROYAL LIVER BUILDING, LIVERPOOL.

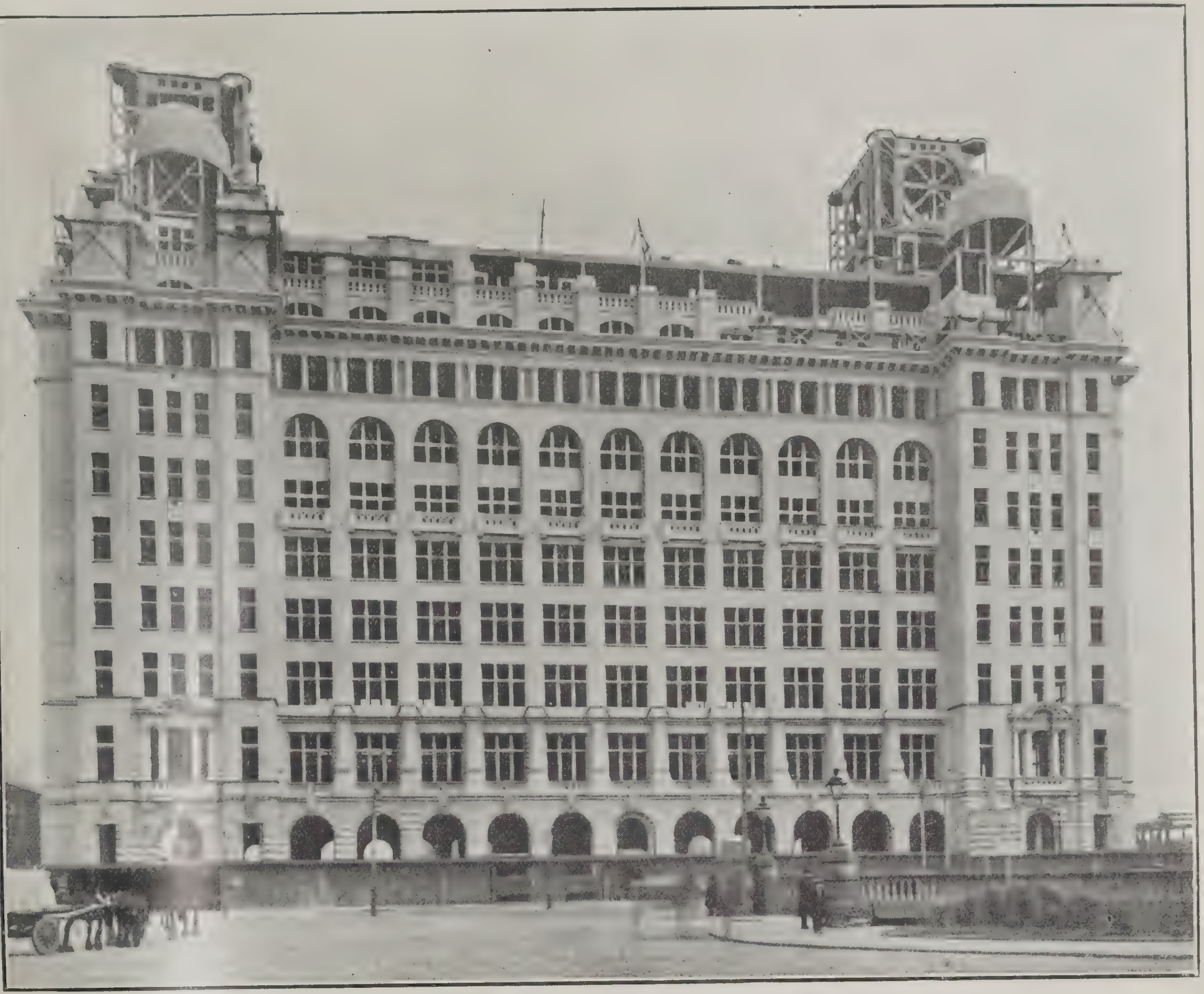

Fig. 14.—The building on April 28, 1910, showing the progress of the granite curtain walls.

THE ROYAL LIVER BUILDING, LIVERPOOL.

the walling and roof, and also in some cases the bunkers and contents. Some of the columns take over 250 tons. The upper reinforced concrete floors are constructed to carry from 8 to 20 cwts. per ft. super and concentrated heavy machinery, such as motors, etc.

The walls, with the exception of those which are made temporary for the purpose of future extensions, are constructed of coursed random rubble built in cement, the stone being local rock, and the walls vary in thickness from 15in. to 36in., many of them going to a considerable height. The roofs generally have steel trusses of various spans with steel and wood purlins; in some cases the roofs are boarded to receive the Ballachulish slates, and in some of the rooms the slating has been fixed direct on small steel purlins without any woodwork at all. Two large flats are constructed of reinforced concrete, and it is interesting to note that these flats are quite watertight, although no roof covering has been put on.

In this factory overhead reinforced concrete bunkers are constructed to carry 4 tons, 10 tons, 60 tons, 140 tons, 350 tons, and 2,000 tons, the latter being carried on 16 reinforced concrete columns each 2ft. 3in. square. The design and work of these are of a very complicated nature, and the author believed the 2,000-ton bin is the largest bunker constructed entirely of reinforced concrete without the aid of R.S.J.'s.

Roads, Lighting, Sewerage, and Water Supply.

Very extensive roads have been laid out and constructed.

The whole of the factories, streets, houses, cottages, and other buildings are lit by electric light.

The general drainage of the village is carried on with 3in. to 18in. diameter stoneware and iron pipes. The surface water has a separate system of large culverts. Septic tanks will deal with the sewage at the outfall, the surface-water outfalls discharging direct into the river. The surface-water culverts are constructed in various ways, some being open with the sides formed of rubble masonry, others being open reinforced concrete culverts, whilst there are also circular and square forms in reinforced concrete.

The water supply for the village is obtained from the catchment area of Corriemora. A comparatively small dam has been constructed, so that the reservoir will contain when completed sufficient water for a population of over 6,000. Iron pipes have been used throughout the whole of the domestic supplies.

Staff Houses, Offices, Laboratory, etc.

The staff houses naturally vary in size and accommodation, but they have generally been constructed with ordinary concrete foundations and 6in. concrete over the area of the site, the walls being of rough rubble of varying thickness, from 15in. to 22in. The walls are in some cases coated with cement rough-cast, and the inside of all external walls battened and lathed and plastered. The interior walls are formed of brickwork in cement, the floors being as usually constructed in the South. The roofs, however, are considerably stronger than usual, and have boarding and felt, and are slated with Ballachulish slates, which are very thick and heavy. These slates give an excellent appearance to the roofs. The slates are fixed in diminishing courses, which again helps the appearance, and this district having such a little sun, the thick and rugged slates give a greater relief than the thin and even slates. The Ballachulish slates seem to be particularly adaptable and serviceable for that part of the country, as they withstand the very severe weather.

The offices and laboratory are constructed of similar material to the staff houses. In all these buildings the lintels are of reinforced concrete, and the upper floor of the offices is also of this material.

Cottages, Cottage Flats, Single Men's Quarters, Shops, Administration Block.

The housing accommodation for the general employees consists of various classes of buildings, which can be generally divided as follows:—

(a) Self-contained cottages.
(b) Cottage flats.
(c) Single men's quarters.

Permanent shops have been erected, including the necessary bakehouses, stores, etc.

The earliest forms of houses were constructed of two ½-brick walls from the ground line right up to the eaves, with 2¼in. cavity between, and were rough-cast on the outside and plastered direct on to the brick walls inside.

The lower cottage flats and single men's quarters and administration block are built on quite a new method, the whole of the main constructional work being of reinforced concrete, the walls being formed of reinforced concrete posts and beams, and the panels thus formed by the posts and beams being filled in with two 1½in. slabs with 2in. cavity between, and the whole face cement rough-casted.

This form of construction had, the author thought, to a very great extent solved the difficulty of obtaining well-built, solid, and efficient houses at such a low cost that it was possible for the lowest paid class of labourer to be housed in a more decent manner with a lower rent than had hitherto been the case.

WATERPROOFING BUILDINGS.

It is sometimes necessary to apply waterproofing to concrete and other materials not in themselves quite impervious to water, and this is done by the application of various substances to the interior or exterior surfaces of walls, etc. The matter was brought forward by Mr. Myson H. Lewis in a paper read before the municipal engineers of the city of New York. The author classes all the methods of waterproofing in use under three heads: (1) Bituminous shields or membranes, including all the processes in which the structure is surrounded by an external shield or membrane. (2) The integral method, by which is meant making the concrete or masonry itself impermeable, or using a waterproof cement coating. This is termed the "rigid" method, in distinction to the "elastic," or bituminous.

The third method is that in which the waterproofing is applied to the surface of the structure, but not as cement, as in case 1. By adopting any of these methods, according to circumstances, it is maintained that, with thorough investigation, correct design, and suitable materials, structures can be waterproofed with as much certainty, and as permanently, as it is possible to expect. The effects of variations of temperature must be carefully guarded against, a fact which will perhaps be more readily appreciated when we state that in the case of plaster there is, for a difference of 100 deg. Fahr., an increase or decrease of 2.7 cubic feet in a 10ft. cube. The range in other materials is not so great, but it has, nevertheless, to be considered. In neat cement it is 1.8 cubic feet in a 10ft. cube, and in concrete 0.4 cubic foot in a 10ft. cube.

In using membranous waterproofing, one of the chief considerations is to have a good surface on which to apply the material. It must not be too ragged nor yet too smooth. The surface must also be clean and dry. In the integral method, the chief point of importance is the elimination of all voids in the concrete. The impermeability of the mass may also be assisted by the incorporation of some waterproofing compound, such as solutions of chloride of lime or sulphate of aluminium, added to the cement, and Sylvester soap or alum mixtures, as well as hydrated lime and metallic stearites. The author, however, points out that the effect of none of these compounds has been tested by time. Metallic stearites appear to be most in favour at the present time.

With regard to surface coatings, the most permanent of these is hot paraffin injected into the pores of the surface, but it is necessary that the paraffin should be a specially hard kind. It is rather an expensive method, but the results seem to justify it. The Sylvester method of alum and soap is much in use, but it requires a larger number of coats than in the case of paraffin, and is quite as expensive, while it is no more permanent. Linseed oil should not be used, as it is an unstable compound and produces a soap upon coming in contact with the alkali in cement, and soon washes off. Included in the paper is a very useful diagram for determining the dimensions and the cost (in the United States) of reinforced concrete floors subjected to external hydrostatic pressure. This is intended for use when designing floors that have to be waterproofed in deep basements, and where it is important to guard against the cracking of the floors.

QUANTITIES FOR REINFORCED CONCRETE WORK.

By CHARLES O. MOURANT.

The continued adoption of reinforced concrete as a building and engineering material and its rapid development by contractors, engineers, architects, and others necessitates careful and systematic estimating on the part of the contractor.

To enable the contractor to give a fair tender for proposed works, it is desirable that several points should have careful consideration.

(1) The design of the structure must be such that it will withstand the various loads which are likely to be placed upon it.

(2) The quantities should be very carefully and accurately taken out.

(3) Prices should be obtained for materials such as ballast, broken stone, sand, cement, etc., from reliable firms in the locality of job.

(4) The contractor should inspect samples of these materials before using the prices for estimating purposes, so as to be sure they satisfy the conditions of the specification.

The first item does not affect the general contractor, this being for the architect and consulting engineer to decide.

The present article is intended to deal more particularly with quantities and quantity taking. It is to be regretted that the majority of engineers do not realise the importance, for estimating purposes, of a good set of quantities, that is, quantities with the various items of work and various trades kept separate. The ordinary form of engineer's quantities wherein the concrete and centering are lumped together, such as "500 yards cube concrete in beams, columns, floor slabs, etc., including all centering, forms, etc.," is very unsatisfactory. With such description, no estimator can hope to give a fair price for the work.

As everyone knows, who is at all acquainted (even most remotely) with the labours involved in reinforced concrete work, the cost of the centering bears a very large proportion of the cost of the whole job; and the ratio between the cost of the centering and the cost of concrete in, say, a 4in. slab, is far higher than that between centering and concrete in, say, a 12in. slab. And similarly in a beam, say, 12in. by 6in. we get 2.5ft. super. of centering for every ft. lineal, and 0.5ft. cube concrete; whilst in a 24in. by 12in. beam we get 5ft. super. centering and 2ft. cube concrete, so that by increasing the quantitity of concrete four times we do not increase the centering by the same amount.

(a) Now it must follow that if we price the 4in. floor slab first—

1ft. super centering	2d.
4-12ft. cube concrete at 9d. ...	3d.
Per ft. cuper 4in. thick...	5d.

or 1s. 3d. per ft. cube concrete and centering.

(b) Then taking 12in. slab—

1ft. super. of centering	2d.
1ft. cube concrete	9d.
Per ft. cube ...	11d.

which is 26 per cent. cheaper than 4in. slab.

(c) Then, taking a 12in. by 6in. beam, we get per foot lineal—

2.5ft. super centering at 2½d. ...	5d.
0.5ft. cube concrete at 9d. ...	4½d.
	9½d.

or 1s. 3d. per ft. cube concrete and centering.

(d) Taking a 24in. by 12in. beam—

5ft. super. centering	1s. 0d.
2ft. cube concrete	1s. 6d.
	2s. 6d.

or 1s. 3d. per ft. cube concrete and centering.

In order to emphasise the error, let us consider 50 yards cube of each item instead of 1ft. cube.

(a) 50 yards cube	£84	7	6
(b) 50 yards cube	61	17	6
(c) 50 yards cube	106	17	6
(d) 50 yards cube	84	7	6

From a comparison of these figures it will readily be seen that if the contractor prices his concrete and centering together at a certain uniform price per yard cube, he will be too high on some items and too low on others.

The cost of hoisting materials to the various floors is very heavy, and varies with the height of the floors, hence the quantities of concrete, centering, and steel for various floors should be kept separate. The usual practice is to divide the building up as follows:—

1. Basement and ground floors.
2. First, second, and third floors.
3. Fourth and fifth floors.
4. Roof.

Reinforcing steel for floor slabs should be kept separate from the steel in beams and columns. There is usually more labour on the steel in the beams than in the slabs or columns, and more in the steel in columns than in slabs.

But these items greatly depend upon the engineer's design, and no hard and fast rules can be laid down. For the reinforcement of floor slabs the most economical method is to put in straight lengths of rods between the beams and over the beams to lay short lengths of the same size rod as top reinforcement to take the reverse bending moment. The length of these top rods and the spacing of same depends upon the span between beams, and must be executed according to the engineer's drawings and details.

The finishing surface to floors should be measured at per yard super. or per square super., the plastering to soffit of floors measured per yard super., plastering to beams per ft. super. plastering to columns per ft. super (these should be itemised separately); angles and arris to beams per ft. run, chamfers per ft. run, stops numbered, cornices per ft. run, mitres numbered.

The writer has seen items in a bill of quantities by an eminent engineer which were described in the following ambiguous manner:—

"100yds. cube concrete as specified in floor slabs, beams, columns, etc., including all centering and forms, the top surface of floors finished with 1in. granite chippings and cement, the soffit of floors and all beams and columns finished in sirafite plastering, two coats, including angles and arrises to beams and columns."

Pricing such an item as this is mere guesswork; the quantities should have been in the following form:—

Yds. Cube Concrete in beams, Ground Floor.
,, ,, ,, beams, First, Second, and Third Floor.
,, ,, ,, beams, Fourth and Fifth Floors.
,, ,, ,, beams, Roof.
,, ,, ,, columns, Basement to Ground Floor.
,, ,, ,, columns, Ground to Second Floor.
,, ,, ,, columns, Second to Fourth Floors.
,, ,, ,, columns, Fourth Floor to Roof.
Yds. Super. Floor slab, 4in. thick, Ground Floor.
,, Floor slab 6in. thick, Ground Floor.
,, and Floor slab for each floor.
,, Centering to floor slabs.
,, ,, to roof.
,, ,, to beams.
,, ,, to columns.
,, 1in. Granite Chippings and Cement to floors.
,, Sirapite Plastering to soffits of concrete floors.
Feet ,, ,, ,, beams.
,, ,, ,, ,, to columns.
Feet run Angles and arris to beams.
,, ,, ,, to columns.

The writer, after several years' experience as a quantity surveyor, and lately being especially interested in reinforced concrete, has arranged a system of "column" quantity taking for this class of work, which will greatly reduce the labour involved in taking off quantities for reinforced concrete work. By adopting this method the time employed in abstracting the various items is entirely saved. No abstracting is necessary: the quantities can be billed direct from the taking-off sheets.

The accompanying tables indicate the method to be employed—

Sheet A for beams.
Sheet B for columns.
Sheet C for floor slabs and walls.

Sheet A: Beams.

January, 1910,

LOCALITY OF JOB—WAREHOUSE, LONDON, E.

CONCRETE.						CENTERING.				REINFORCEMENT.														STIRRUPS			
Fl'r	B'm No.	No. of tms.	L'gth ft.	Depth width ins.	Cubic ft.	No. of tmes	Lg'th ft.	G'th ins.	Super dims.	No. of rods	L'gth ft.	Size	½" ft.	⅝" ft.	¾" ft.	⅞" ft.	1" ft.	1⅛" ft.	1¼" ft.	1⅜" ft.	1½" ft.	1¾" ft.	2" ft.	No. of bm. rods	Sec. area of	Lgh in ins.	Total cubic ins.
			ft ins.	inches	ft. ins.		ft. ins.	ins.	ft. ins.		ft. ins.	ins.													ins.	ins.	ins.
Gd.	1G	3	20 0	20×8	66 8	3	20 0	48	240 0	6	25 0	1⅛						150 0						6	1⅛	26	175
										6	20 0	1¼							120 0					6	1¼	26	195
	2G	1	25 0	30×8	41 8	1	25 0	68	141 8	8	27 6	1½									220 0			8	1½	36	432
1st	1F	1	12 0	12×6	6 0	1	12 0	30	30 0	2	12 0	¾			24 0									2	¾	14	21
										2	15 0	¾			30 0									2	¾	14	21
	2F	1	10 0	10×6	4 2	1	10 0	26	21 8	2	12 0	1					24 0							2	1	12	24
					[illegible]				433 4						54 0 × 1.5 lbs.		24 0 × 2.67lbs	150 0 × 3.38lbs	120 0 × 4.17lbs		220 0 × 6.01lbs						808″^{3}
		Carried to Bill=			4⅜ yds. cube.				= 48 yds. sup.						= 81 lbs		= 65 lbs	= 507lbs	= 500 lbs		= 1342	lbs.					= 245 lbs

Sheet B: Columns.

January, 1910.

LOCALITY OF JOB—WAREHOUSE, LONDON, E.

CONCRETE.						CENTERING.				REINFORCEMENT.											BINDERS.						
Fl'r	No. of Col	No. of tms.	Heig't ft.	Side by side ins.	Cub. ft.	No. of tms.	Height ft.	Gth. ins.	Super. dims. ft.	No. of rods	Lngth. ft.	Size ins.	¾" ft.lin.	⅞" ft. lin.	1" ft. lin.	1⅛" ft. lin.	1¼" ft. lin.	1⅜" ft. lin.	1½" ft. lin.	1¾" ft. lin.	No. bds.	Lgh ft.	Size in.	⅛" ft. lin.	¼" ft. lin.	⅜" ft. lin.	½" ft. lin.
			ft. ins.	inches.	ft. ins.		ft. ins.	ins.	ft. ins.		ft. ins.	ins.															
Gd.	A	3	15 0	16×16	80 0	3	15 0	64	240 0	4/3	16 6	1½							198 0		192	7 6	⅜			1440 0	
1st	C	2	12 0	14×14	32 8	2	12 0	56	112 0	8	13 0	1⅛				104 0					72	6 6	¼		468 0		
2nd	D	5	12 0	12×12	60 0	5	12 0	48	240 0	20	12 6	1			250 0						240	5 6	⅛	1320 0			
R'f	K	5	10 0	9×9	28 2	5	10 0	36	150 0	20	11 0	¾	220 0								200	4 2	⅛	833 4			
		Carried to Bill —		=	200 10 8 yds. cube.			=	742 0 82 yds. super.			=	220 0 3 cwt.		250 0 = 6 cwt.	104 0 = 3¼cwt.			198 0 = 10¾cwt					2153 4 = 1 cwt.	468 0 = ¾ cwt.	1440 0 = 5 cwt.	

Sheet C: Floor and Wall Slabs.

January, 1910.

LOCALITY OF JOB—WAREHOUSE, LONDON, E.

CONCRETE SLAB.													CENTERING.				REINFORCEMENT.									
Fl'r	Slab No.	No. of tms.	Leng'h ft.	Width ft.	Thickness ins.	3" ft.sup.	3½" ft. sup.	4" ft. sup.	4½" ft. sup.	5" ft. sup.	5½" ft. sup.	6" ft. sup.	No. of tms.	Leng'h ft.	Width ft.	Super dims.	No. of rods	Leng'h ft.	Size ins.	¼" ft. lin.	⅜" ft. lin.	½" ft. lin.	⅝" ft. lin.	¾" ft. lin.	⅞" ft. lin.	Wire tyings No.
			ft. ins.	ft. ins.	inches.					ft. ins.						ft.										
Gd	A	4	11 0	10 0	5					440 0			4	11 0	10 0	440 0	20	11 6	½			230 0				—
																	22	10 6	¼	231 0						—
Gd	B	6	8 0	8 0	3½		384 0						6	8 0	8 0	384 0	6/16	8 6	⅜		816 0					—
																	6/8	8 6	¼	408 0						—
1st	X	4	6 0	7 0	3	168 0							4	6 0	7 0	168 0	4/14	6 6	⅜		364 0					
																	4/12	7 6	⅜		360 0					
2nd	Y1	2	12 0	12 0	6							288 0	2	12 0	12 0	288 0	2/24	12 6	¾					600 0		
			Carried to Bill			19 yds. sup.	43 yds sup.			49 yds sup.		32 yds.			= 142yds sup.	1280 0	2/24	12 6	¾					600 0		
Wall fr'nt	b	1	24 0	10 0	4			240 0					2	24 0	10 0	480 0	2/48	10 0	¼	960 0						} 3840
																	2/20	24 0	¼	960 0						
					Carried to Bill			27 yds. sup.								53 yds				2559 0 = 4 cwt.	1540 0 = 5 cwt.	230 0 = 1½cwt.		1200 0 = 16⅛cwt		

TRADE AND CRAFT.

Messrs. G. Jackson and Sons, Ltd., of 49, Rathbone Place, W., and Mr. G. P. Bankart, of Baldwin's Gardens, Gray's Inn Road, E.C., have recently arranged an amalgamation of their businesses. The respective workshops and offices remain exactly as heretofore, Mr. Bankart's business being under his sole personal direction and control at Baldwin's Gardens, whilst his services as designer and adviser of work at 49, Rathbone Place are also secured. In addition to modelled plasterwork, leadwork, etc., they are conjointly undertaking decorative work in gesso, also egg-tempera painting, and carving in wood and stone; and with the new financial arrangements, increased workshop accommodation, and greater facilities, they will be able to carry out orders expeditiously, and at the same time to do the best possible work.

Poilite Roofing Tiles and Slabs.

The manufacture of asbestos cement tiles and sheets has now assumed the dimensions of a great industry. Within the past ten years, factories have been opened in Austria, Hungary, Germany, France, Belgium, Switzerland, and the United States of America. For many years, Messrs. Bell's United Asbestos Co., Ltd., Southwark Street, London, S.E., have specialised in this class of material for building construction, and their "Poilite" Asbestos Cement Tile and Sheet Works have been specially equipped for the increasing demands of the home, colonial, and foreign trade.

For Poilite roofing tiles, many advantages over ordinary natural slate are claimed. The manufactured article does not change colour under exposure to the weather; it is absolutely fireproof; it does not crack or split when trampled on or when exposed to heat; it does not deteriorate under rapid and extreme variations of climatic conditions; it does not split or crack round the nail-hole; and the roof formed of these tiles is of superior appearance.

In the process of manufacture, the Poilite shingles are subjected to enormous pressure. When fresh, they absorb only about four or five per cent. of their weight in water; and the hydration and crystallisation which ensue on their exposure to the atmosphere render them absolutely waterproof, and of extreme durability. Superior economy, rendering any trifling increase of first cost over that of inferior roofing quite negligible, is consequent on the extreme lightness of weight of Poilite, enabling the use of smaller scantlings for the framework of the roof, as compared with those that are necessary for carrying slates; and the durability, ease of maintenance, fireproof quality, and other advantages, are all in favour of real economy.

In appearance and to the touch, the Poilite asbestos tiles resemble high-quality slates, but, as already noted, they are not nearly so heavy, while they are nevertheless of much greater tensile strength. The surface is uniform, smooth, and non-flaking, and the tiles can be cut, shaped, and drilled, with the utmost facility. From the smoothness of the surface and the accuracy with which the edges are cut, it would seem impossible for moisture, rain, wind, or snow to get between the laps. The Poilite tiles are made in grey, blue, and terra-cotta, and these tints are warranted to be unfading. The average weight is about 21lb. per square yard, allowing for 2¾in. lap, compared with 67lb. for Welsh slate, and 160lb. for red roof tiles. Poilite is on the authorised Admiralty and War Office lists. Its lightness, imperviousness, and immunity from the effects of climatic extremes. render it a most valuable material for use in tropical countries, where, as at home, it is in great demand not only for roofs, but also for walls, dadoes, and ceilings. It is largely employed in British India, where its quality as an absolute non-conductor of heat, its defiance of the ravages of the white ant, and its non-combustibility are among the qualities that have brought it into high favour.

FEDERATION NEWS.

Lancashire, Cheshire, and North Wales Federation.

The Finance Sub-Committee of this Federation met at the Boardroom, Blackfriars Street, Manchester, on Thursday, June 30th, when the president, Mr. Frank Woods, Bolton, occupied the chair.

The annual meetings of the Painters', Slaters', Stonemasons', Bricklayers' and Plumbers' Trade Committees have been held during the month, the special business before each being the election of the branch chairman for the ensuing year, who shall sit ex-officio on the Administrative Committee.

The following are the elections:—Painters, Mr. W. Croasdale, Preston; slaters, Mr. J. B. Johnson, Liverpool; stonemasons, Mr. Samuel Smith, Burnley; bricklayers, Mr. Ben Talbot, Bolton; plumbers, Mr. Thomas Rowbotham, Manchester.

The Painters' Trade Committee also had before them the question of demanding medical certificates from workmen before giving them employment, and the following resolution was adopted:—"That it be a recommendation from this committee to the master painters throughout the Federation to use their influence wherever possible for the substitution of other suitable materials for 'lead,' with a view to removing the serious risk of lead poisoning." It was agreed that this resolution should be sent on to the various local associations. Some discussion also took place at this meeting regarding the strike of painters in progress at Leigh, but no resolution was passed thereon.

The stonemasons held their meeting at Blackpool, and one very important matter under consideration was the question of deleting or amending the worked stone rule. After considerable discussion the following resolution was adopted:—"That this meeting recommend to the Administrative Committee of the Federation that the worked stone rule be deleted, and that the following be substituted in place thereof:—"That no worked stone shall come into this town except sawn stone, which shall be exempt from this rule."

It was agreed to hold the next meeting at Burnley.

Attention was also called to the charges made by railway companies for the use of hand cranes, and one of the members of the committee stated that he had had this matter recently before the various railway companies. It was agreed that the chairman should bring the same before the notice of the Administrative Committee, with a view to their taking the matter up.

At the Plumbers' Trade Committee meeting, the question of plumbers' discount on sanitary fittings was discussed at very considerable length, and complaints were laid against two firms of manufacturers and dealers on the methods adopted by them in quoting net prices to architects and proprietors. The secretary was instructed to write the two firms complained of calling their attention to the matter, and asking them in future to quote prices which would carry the usual trade discount to the master plumber.

The arrangements for entertaining the National Federation of Building Trade Employers at Chester for the summer meetings are now near completion, particulars of which it is expected will be circulated within the next few days.—John Tomlison, Secretary.

Yorkshire Federation.

The monthly meeting of the Executive Council of the Yorkshire Federation was held at Powolny's Grand Café, King Edward Street, Hull, on June 30th, when Councillor W. G. England, J.P. (president) occupied the chair, and 42 delegates were present from the Federated Associations.

Vote of Condolence—Mr. A. Mastin, Sheffield.—The President referred to the death of Mr. A. Mastin, of Sheffield. On his motion, seconded by Mr. A. J. Forsdike, the Federation resolved to tender to Mrs. Mastin and family their profound sympathy and sincere condolence in the great loss they have sustained, and warmly acknowledge the loyal and valuable services of Mr. Mastin in the interests of the Federation, and in furthering the welfare of building trade employers.

A letter was read from Mr. George Macfarlane, J.P., acknowledging receipt of the Federation's resolution of congratulation.

Malton Post Office.—A letter was read from the H.M. Office of Works stating that the accepted tender for alteration at Malton Post Office was based upon the same plans, specification, and bills of quantities as were the original tenders.

Post Office Contracts.—The President reported that the Finance and Emergency Committee had carefully considered the replies from contractors giving their observations and experience in connection with Post Office contracts. A draft letter had been prepared, and was laid before the Federation for their consideration. The draft letter was generally approved for transmission to H.M. Office of Works. The president, vice-presidents, and secretary were appointed a deputation to interview H.M. Office of Works, and place before the officials a digest of the experience and observations, in order to substantiate the statements contained in the letter.

Circular to Architects on Trade Matters.—It was reported that the National Administrative Committee had approved of the principle of the Federation's issuing, under their auspices, a circular letter to Yorkshire architects, but recommended that the preamble should be revised. The President reported that the Finance and Emergency Committee would bring forward a recommendation at the next meeting.

Register of Accidents.—The President reported that a Conference of Secretaries had been held on June 9th, when it was unanimously agreed, as an experiment, to ask members to fill up and return once a quarter particulars of the accidents which had arisen during the period, with a special note of all cases suspected of malingering. The information would then be duplicated, and a copy furnished to each local association secretary for the information of the Federated members.

National Federation Rules.—A proposal to alter the National rules so as to provide that ex-presidents of the Federation shall hold office ex-officio on the National Committee for at least two years after the expiration of their term of office, was considered. The Federation empowered their representatives to support the amendment when it comes forward for consideration at the National meeting.

West Riding County Council — Fair Wages Clause.—A report was presented of the action of the West Riding County Council in seeking to enforce on a contractor in the Bingley district the rates of wages and conditions of labour applicable to the Keighley district. The action of the West Riding Education Committee was largely due to the initiative of a local labour member, and a resolution of the Keighley Operative Joiners' Society that Bingley was within their district and subject to their jurisdiction. The secretary reported that he had, with the contractor, had an interview with Mr. W. Vibart Dixon, the Deputy Clerk of the County Council, and stated that the principle raised was of vital importance to all building trade employers. It was pointed out to Mr. Dixon that the Federation could not for one moment sanction the position taken up by the operatives' society, neither were the County Council justified in imposing what was known as trade union rate of wages and conditions, as distinct from the wages "generally accepted as current and actually in operation in the trade or respective trade for competent workmen in the district." Attention was also drawn to the fact that only a short time ago Bingley was claimed as within the district of the Bradford branch of the joiners' society, and that the change had obviously been made in order to bolster up a case against a contractor who was working in Bingley district. Mr. Dixon ultimately agreed that the Federation was right in contending that the contractor was complying with their fair wages clause if he was paying the rate of wages "accepted as current and actually in operation" in Bingley, but stated that he would obtain independent evidence on this point. The Federation Secretary requested that the claims of the operatives might be heard in the presence of the contractor, thus affording an opportunity for rebutting evidence being given. The contractor estimated, if the request of the County Council was enforced, that it would mean a difference in wages of about £130. It was resolved to inform the West Riding County Council that the Federation unanimously endorsed the action of their secretary as embodying the use and custom of the trade throughout the country; and to request, if further action is contemplated or explanations are necessary, that the Federation might be given an opportunity of expressing their views either at an official inquiry or by means of a deputation.

National Administrative Committee.—Mr. Sinclair reported upon a meeting of the National Administrative Committee, that had been held on June 21st.

National Conciliation Board.—A recommendation was considered from the National Conciliation Board "that members of the various Conciliation Boards who may be members of any Board having considered a case shall not sit personally on any subsequent hearing of the said case, but shall send a substitute." The consideration of the recommendation was deferred to a further meeting.

Leeds—Bricklayers' and Labourers' Winter Working Hours.—Mr. W. T. Ledgard, on behalf of the Leeds Association, reported that the bricklayers and labourers had not assented to the proposal for alteration of the winter working hours. The notice provided that, for a period of fifteen weeks, work should commence at 8 a.m., and that no breakfast time should be allowed. The proposed reduction in hours would make a difference of 28½ hours during the winter. Several members expressed the opinion that the Leeds Association should bring the proposals before the Local Government Board.

Hull and Plasterers' Joint Committee.—Mr. E. Quibell reported that the Hull Association had invited the Hull Operative Plasterers to appoint representatives on the Committee of Appeal provided for in the revised agreement with the plasterers. After the request, a question had been raised, and the operative plasterers were delaying the appointment of their representatives until the point in negotiation had been settled. The Hull Association are strongly of opinion that the operatives are taking undue advantage of the position. The Federation secretary reported that he had requested the National secretary to ask the National secretary of the N.A.O.P. to use his best services with the Hull branch to get the Committee appointed, in order that the matter which had been raised might be dealt with by such committee as soon as it is formally constituted.

July Meeting.—On the motion of Mr. A. J. Forsdike, seconded by Mr. J. Dawson, it was decided not to hold a meeting in July, unless necessity arises, but that the members be urged to attend the National half-yearly meetings at Chester, on Wednesday, July 27th.

August Meeting.—Mr. A. W. Sinclair, on behalf of the Scarborough Association, invited the Federation to hold the August meeting in that town. The invitation was cordially accepted, and the date fixed for Friday, August 19th.—J. Davidson, Secretary.

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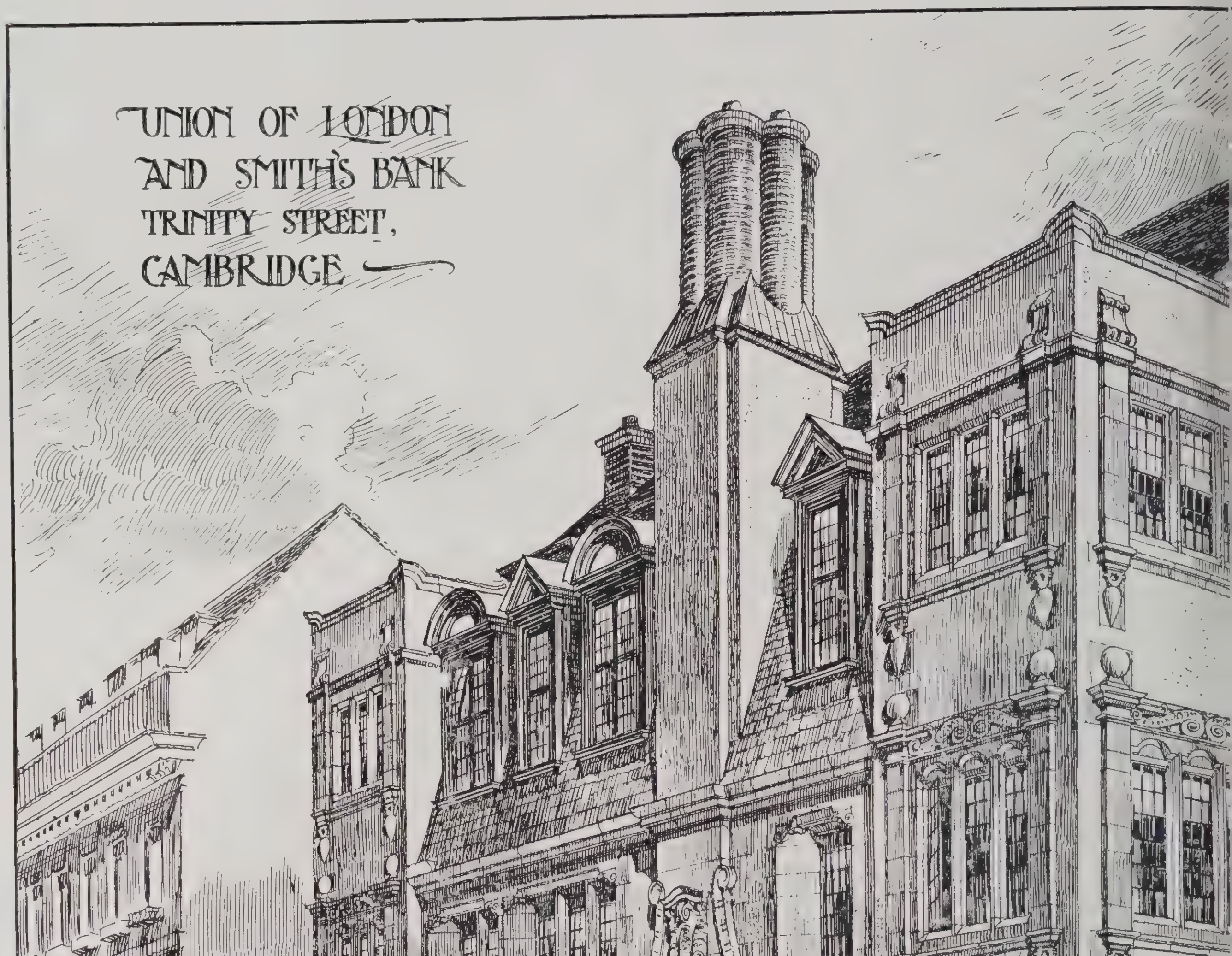
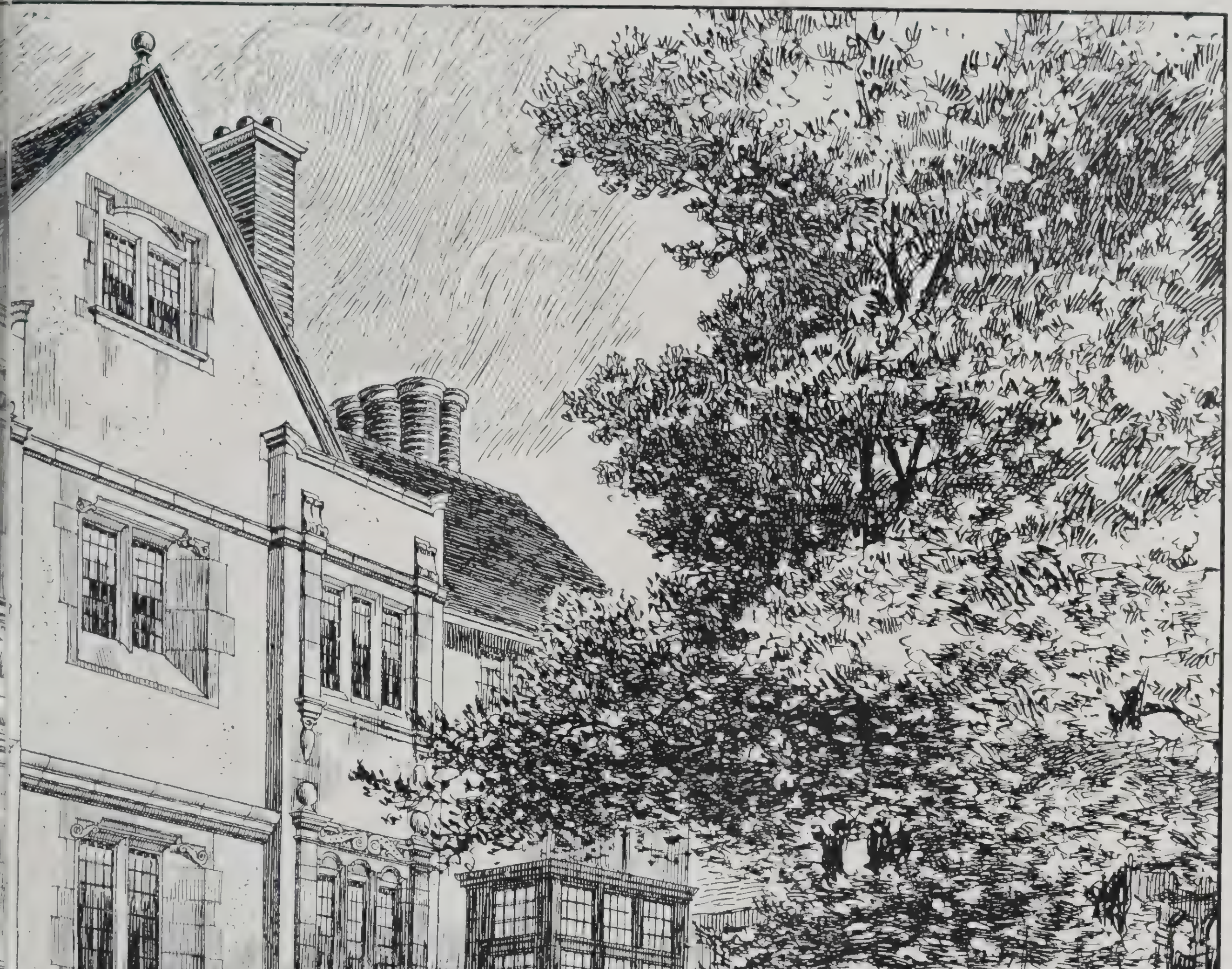


THE UNION OF LONDON AND SMITH'S BANK, TRINITY STRE



BRIDGE. W. D. CARÖE, M.A., F.S.A., F.R.I.B.A., ARCHITECT.

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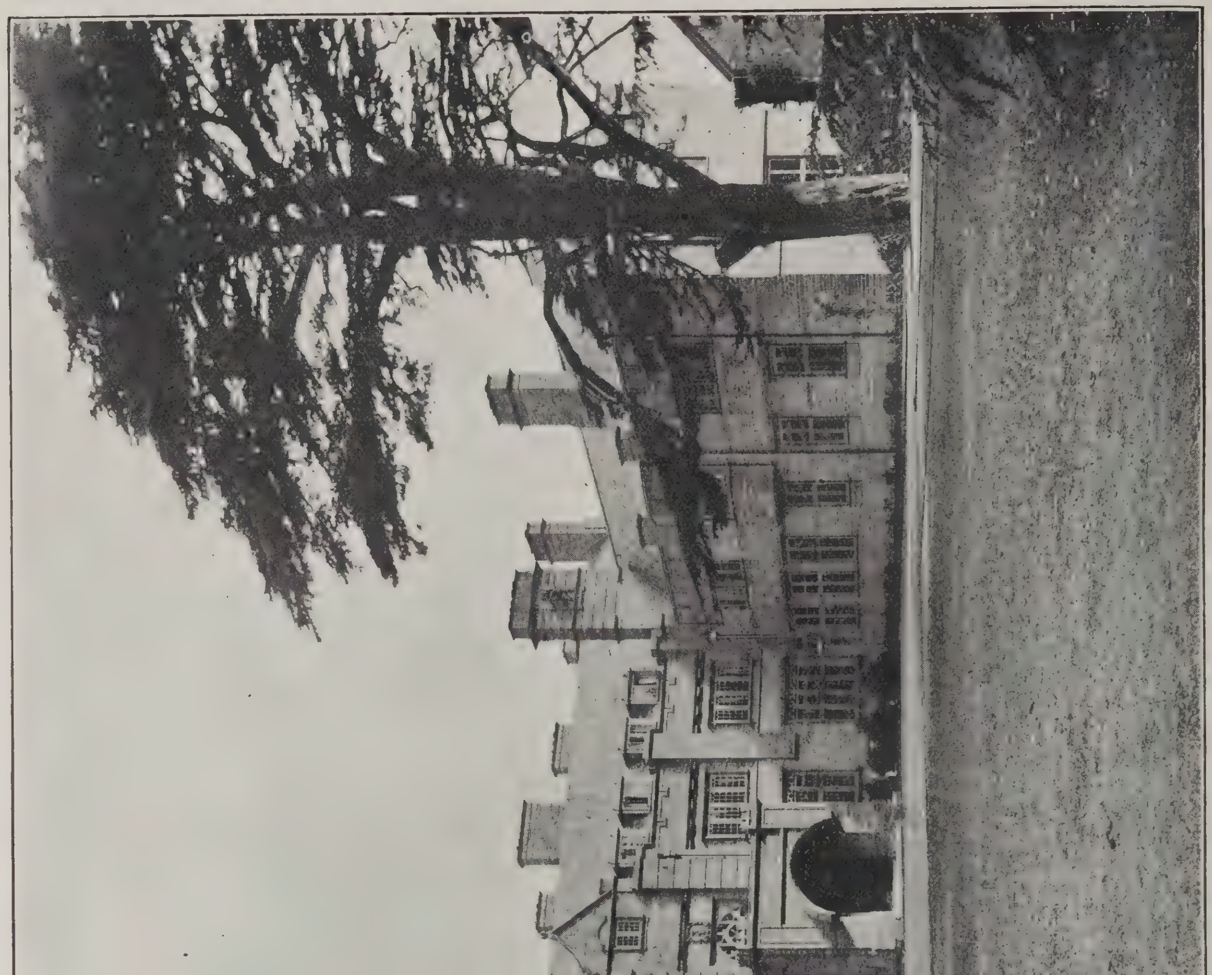
THE ARCHITECTS' & BUILDERS' JOURNAL

WEDNESDAY, JULY 27th, 1910.

Volume XXXII. No. 808.

This work comprises the conversion of an old malting and oasthouse into a residence, part of the old buildings being pulled down for a street-widening necessitating a new front. The oast-house has been converted into a library.

THE MALTING HOUSE, CAMBRIDGE. SMITH AND BREWER, ARCHITECTS.



MINTERNE, CERNE ABBAS, DORSET: ENTRANCE FRONT. LEONARD STOKES, P.R.I.B.A., ARCHITECT.

(See page 89.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

JULY 27th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 808.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

The Artillery War Memorial.

MR. SPEAIGHT is not always right in his suggestions about the arrangement of public places and monuments in London, but he is certainly right in his strictures in regard to the placing (or rather misplacing) of the Artillery South African War Memorial. The memorial faces the Duke of York's Column, on a site opposite the steps; the site relation between the two is emphasised by the line of pavement which stretches across from the foot of the steps axially with the column; and in spite of this the war memorial has been deliberately placed two or three feet out of axis with the column. It is a blunder that would seem almost incredible were it not unfortunately the fact that we are always making blunders of this kind in London. We presume this is the wisdom of the Office of Works. Imagine such a thing being done by any official architectural authority in Paris! They would never hear the last of it. The sole reason for doing this seems to have been to keep the end of the monument to the line of the park railings. Surely the railings are movable, and their line could have been altered for so important a purpose as the proper axial placing of the monument. In matters of this kind we seem in London to be really hopeless. For the monument itself, the group of the figure and the horse at the top is a fine and effective one; the horse seems to owe something to Watts's horse in the "Physical Energy" group; it is none the worse for that. But we should like to know whether Mr. Colton put the architectural details into the hands of any architect. We suspect not; we have not seen any architect's name mentioned, and we do not think the mouldings and the outline of the pedestal by any means good. Nor was it a very happy thought to place the bronze plates with the names of the men commemorated in the pavement. They are likely soon to be more or less obliterated in such a position. The sculpture group and the bas-reliefs are the only really satisfactory part of the monument.

The Addition to the Tate Gallery.

WHAT is called "the new Turner Wing" in the Tate Gallery is an excellent piece of work, both in regard to the architectural treatment of the rooms and the arrangement and exhibition of the pictures contained in it. The two larger of the new rooms, in which the Turner oil-paintings are hung, have curved ceilings, that in No. VI. semicircular in section, that in No. VII. segmental, the skylights following the curve of the ceiling and carrying through its lines. The lighting is through a single surface of glass, which always gives a better light than the practice, carried out in the older rooms at the National Gallery, of having a glazed flat ceiling and a raking skylight above it. On Monday last the lighting in Gallery VI. was, even so, hardly adequate, but this seemed to be owing to too many of the blinds being drawn. In Gallery VII. the light was quite satisfactory, as also in the three smaller ground floor rooms devoted to water-colours, which have been kept lower so as to be more in scale with the pictures. The verde-antique marble used for the architectural framing of the doorways and for the plinths of the rooms goes very well with the red silk brocade lining of the walls in the two large galleries; it does not go quite so well with the gold canvas of the smaller rooms. The seats in the rooms are of fine solid design, very well carried out in Italian walnut. We must praise also the arrangement by which the cords for working the blinds to the skylights are carried down in concealed tubes, so as to avoid an unsightly appearance in the rooms. In the basement rooms, where a number of minor works and studies by Turner are collected, a remarkable success in lighting has been achieved by admitting the light through large canted windows of rough plate glass, which, in spite of there being no top-light and only windows at the end, seem to fill the room with light.

A good many paintings of Turner's, formerly familiar favourites at the National Gallery, are now to be found here; on what principle they are transferred from the National Gallery we do not know, nor is it of very much consequence; it is a matter of administration merely, we presume; at all events, they are as well seen here as they were at Trafalgar Square. Among the many smaller works now first exhibited, there are some, of Turner's latest period, which have been much over-praised in the papers, and are more eccentric than satisfactory. "Interior at Petworth," for instance, in which a quantity of overturned articles from a table are dimly discerned amid a puzzle of prismatic colours, is really absurd; and the same might be said of some others. On the other hand, we come across hitherto unknown works of rare poetic beauty; none more remarkable in this sense, perhaps, than "The Evening Star," one of the finest pictures of a dark sea seen from the beach in twilight that have ever been painted. "Norham Castle, Sunrise," too, a late work, is a wonderful effect of sunlight. There are numberless things of interest among the sketches and studies.

The nation is much indebted to the late Sir J. Duveen for his liberality in thus providing adequate galleries for the exhibition of Turner's works, and to Mr. Duveen for having liberally carried out and added to his father's bequest. And we have every praise to give to the manner in which the work has been carried out by Mr. Romaine-Walker, the architect appointed by the donor. But without making any reflection on the present architect, we cannot quit the subject without expressing the opinion that Mr. Sydney Smith, the original architect, should have been allowed the opportunity of completing his own building. This was pointed out to the donor at the time, but he seems to have been possessed with the characteristically British idea that the gift of money carries with it the right to settle everything else in connection with art. It was in deference to this insular idea that Lord Grimthorpe, because he found the money, was allowed the claim to do what he pleased to St. Alban's Abbey (as it then was). We do not suggest that there is any other parallelism between the two cases. The addition has been as well done, architecturally, as it could have been done. But, nevertheless, we consider that the original architect has every right to claim a grievance at the completion of his building being put into the hands of another architect, and that the donor was distinctly wrong in thinking that his offer of money entitled him to do exactly as he pleased. The matter is an accomplished fact now, but we comment on it in view of future possibilities of the same kind. Donors of money for buildings or other artistic objects ought to understand that in such cases the gift of money does not purchase (or ought not to purchase) the right to dogmatise on questions of architectural and professional rights.

Road Maintenance.

AT a meeting of the Executive Committee of the County Councils Association, held at the Guildhall, Westminster, last week, Lord Belper presiding, the following resolution, brought forward by the East Sussex County Council, was considered: "That in the opinion of the County Council the time has arrived when a substantial grant should be made from the Imperial Exchequer towards the growing cost of maintenance of main roads, owing to the great increase in the motor traffic; and that a copy of the resolution be sent to the President of the Local Government Board, the Chancellor of the Exchequer, and the County Councils Association." After discussion at the Guildhall meeting, it was resolved: "That the committee sympathises with the grievance mentioned in the resolution of the East Sussex County Council, and recommends that the attention of the Parliamentary Committee be specially drawn to this matter in connection with their consideration of the future relations between Imperial and local taxation." The divided, and subdivided, responsibility for road maintenance, leading as it does to ludicrous anomalies, and occasionally imposing intolerable burdens on small communities that are not only unable but ought never to have been expected to bear them, is a public grievance that is over-ripe for attention. We have always regarded road maintenance as being logically and expediently a matter of national concern; as any change of policy on this question has a more or less direct bearing on street architecture and other building interests, the subject is one upon which architects and builders may appropriately keep a watchful eye.

The Importance of the Corporation Seal.

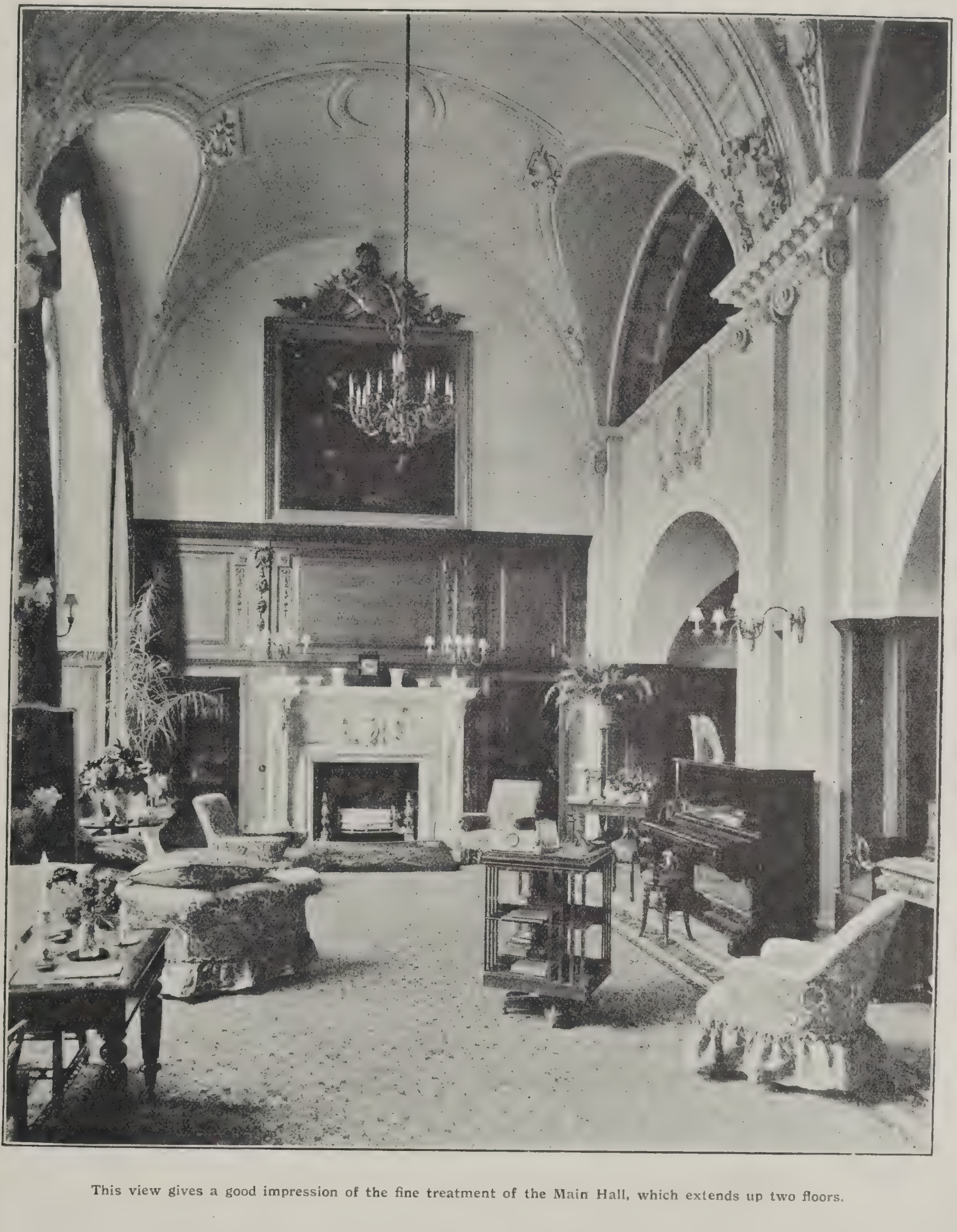
AN action last week in the King's Bench Division, in which an architect sued a corporation for wrongful dismissal, affords yet another example of the interminable struggle between technicality and common sense. The main defence set up was that the plaintiff could recover nothing under a contract which did not bear the council's seal. It was admitted that the work had been ordered; and the attempt to ride off on a mere technicality did not altogether prevail, either with the jury at the Derby Assizes, who had found that the plaintiff was entitled to £230, or with the judge to whom the point of law was referred, who gave judgment for that sum, with costs. It is most important to observe, however, that the judge expressly said "that as the resolution employing the plaintiff was not under seal, the plaintiff could not succeed in an action directly based on it for breach of contract or wrongful dismissal." The recovery was on *quantum meruit;* the ruling in "Lawford v. Billericay Rural District Council" (1903, 1 K.B., 772) applying to corporations the law applicable to other persons, "that they could not take the benefit of work, in an employment within the scope of their authority and for the purposes for which they were created, and refuse to pay for it." From this it seems apparent that it would probably be in vain to seek damages from a corporation for mere breach of contract where the contract does not bear the corporation seal; the award in this case being for services actually rendered. The plain moral is: Insist on the seal: it is an indispensable talisman, without which no corporation contract can be guaranteed to be genuine. (See p. 93.)

Architectural Association Students' Work.

THE drawings of the students in the Architectural Association schools, which have been on view at Tufton Street for some days, give evidence of the good work which is being done there. The work of the first year students in the evening classes is in the first place directed towards teaching them to draw, or obtaining practical evidence as to their powers of drawing, first in the shape of details drawn in outline; secondly in drawing from casts and shading the drawings. Much of the work done by these beginners is very good. In the second year work we have studies of the Doric order, and then of its application in designs for an Agora in the Doric style, to show the application of the order in an original study for a building. There were also some interesting designs for a village church to seat 200 persons. Among the third year work were designs for a sculpture gallery, and others for a park entrance—mostly classic, though a Gothic design appeared among them. The students were also encouraged to work out their ideas of the metal gateways for the park entrance to a larger scale, in order to give them some practice in the study of the treatment of metal. In the fourth year work one of the prominent subjects was a Valhalla, treated for the most part as classic designs with a dome. The objection to these dome designs was that in many—if not most—of them there was a lofty outer dome covering a great amount of useless empty space above the dome which could be actually seen from the interior. The tendency to this kind of treatment of the dome, as a useless feature for external appearance only, was very largely illustrated in the recent competition for the London County Hall, where there were domes of immense size to be seen, which were only exterior embellishments covering so much empty space, entirely separated from the actual internal architecture. It is very desirable that students should be taught to treat domes with reference both to their interior and exterior effect, instead of practically making two domes—one for internal and the other for external show. The reconciling of the interior and exterior design of a dome is no doubt a very difficult problem, but that is the more reason why it should be forced on the attention of students. Of all the designs of the more mature students, the most interesting were those for a brick Custom House, to be erected on the centre of a bridge. Some of the designs were very good, and the thorough manner in which the details of foundations and piling were worked out says much for the nature of the practical instruction in building given in the Association schools.

The Leaning Tower of Pisa.

IT appears that the celebrated leaning tower at Pisa is believed to have been leaning more during the last half-century. If this goes on it will soon, no doubt, lean over for good and all. The evidence as to its increased leaning depends a good deal on the acceptance of the accuracy of the measurements of its inclination made by Taylor and Cresy in 1829. They are said to have made it out to be 86.5 millimetres in every metre; it is to-day 92 millimetres. We should say that Taylor and Cresy were people who would probably make accurate measurements. It is rather amusing to find the "Times" correspondent at Rome forwarding a serious enquiry as to who these obscure Englishmen, Taylor and Cresy, were, and what were their attainments. Of course, a tower already built leaning is more likely to feel any movement of the foundations than one that has been built perpendicular. But the idea that because the foundations are settling now, therefore the original lean was due to a settlement, is illogical if not absurd. Bologna has two leaning towers, erected early in the twelfth century. Sixty years afterwards a town seventy miles off starts another leaning tower; and we are asked to believe that all this is the result of accidental coincidence. The idea is absurd; of course the experiments were intentional, and the towers at Bologna having no doubt attracted a great deal of attention, Pisa determined to rival them.



This view gives a good impression of the fine treatment of the Main Hall, which extends up two floors.

MINTERNE HOUSE, CERNE ABBAS, DORSET. LEONARD STOKES, P.R.I.B.A., ARCHITECT.

NOTES AND NEWS.

Windsor Castle as a Royal Residence.

In stating that before King George and Queen Mary take up their residence at Windsor Castle certain alterations and rearrangements of the apartments will be necessary, a correspondent remarks that, all things considered, the Castle is probably one of the best Royal residences in Europe. There are 17 State apartments, 48 rooms, comprising the spacious kitchen, pantry, confectionery, vegetable, and other store rooms, 79 bedrooms, 65 sitting rooms, and rooms containing 231 beds for servants. The length of passages is about 1,700 yards. The private apartments include the Queen's boudoir, the private audience chamber, the oak room, the tapestry room, the white, green, and crimson drawing rooms, the State dining room, the armoury, and the gold pantry, which contains a collection of gold plate valued at £1,800,000. It seems that very few structural alterations will be required.

A Proposed New Bridge at Twickenham.

A proposal is on foot to build another bridge across the Thames at Twickenham. The idea is set forth in "The Richmond and Twickenham Times," and, needless to say, the proposed bridge is to cross the river at Eel Pie Island. This would mean the destruction of much of the beauty of this reach, and it might be well to consider what this means in other ways. It would have a disastrous effect on both Richmond and Twickenham as residential places, since the majority of the inhabitants value the reach for its natural amenities; it would be disastrous for the boatmen at both places; and also, we imagine, for the Island Hotel. The famous Twickenham Ferry would doubtless be abolished. By the way, our contemporary ought to know that it is only necessary to pay a penny to cross the river, though if one crosses to the island, and again from the island to the further shore, the use of the two ferries will, of course, double the cost. The scheme is devised for the future welfare of Twickenham, we are told. On the Surrey side is a large tract of undeveloped land on the Dysart Estate. It is not by any means certain that the Earl of Dysart would welcome a new town in close proximity to Ham House. But supposing this land is developed, are the people of Twickenham so sure that it will benefit them? Twickenham has hundreds of houses and scores of shops empty. A row of the latter in the high road we have in mind which are being offered without much success at ridiculously low rents. We are informed on good authority that the major part of the more recent speculative property is in the hands of mortgagees and is not returning them even a fair interest. How the development of another district in another county is going to benefit Twickenham, therefore, is not made precisely clear. The bridge would cost a good deal of money, and the benefits would largely accrue to Ham. Also the rates in Twickenham work out now to 7-17ths—nearly half the rent—and there is very little to show for it.

The Advertisement Nuisance.

Travellers by the railway have long been annoyed by the system of placing quack advertisements of a huge size in the fields bordering the line of rail, often in an almost unbroken series for miles together, and it will be a long time before there is any chance of this kind of display being checked by the new Advertisement Regulation Act, which is directed more to securing the streets and suburbs of towns from disfigurement. But it is rather alarming to learn that in addition to the railway line advertisements, the growth of motoring is leading to a similar planting up of the ordinary high roads with advertisement boards, apparently chiefly directed to the supposed wants of the motorist, who does not wish to have his drives disfigured in this way. Some of the owners of motors are proposing to refuse to deal with any motor manufacturer who plants advertisements along the road-side; a policy which, if pursued, would no doubt soon put a stop to the practice.

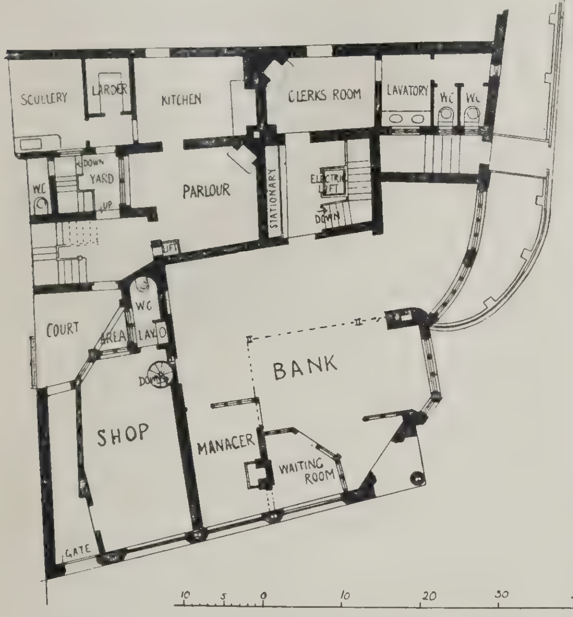
The Usher Hall Competition : Awards.

Sir Aston Webb, R.A., the assessor in the competition for the new City Hall for Edinburgh—the Usher Hall—has made the following awards: 1, Messrs. Stockdale, Harrison and Sons, and Howard H. Thomson, F.R.I.B.A., 7, St. Martin's East, Leicester (joint architects); 2 (with premium of £250), Frank Worthington Symon, F.R.I.B.A., Dorset House, East Grinstead, Sussex; 3 (with premium of £150), Henry Edward Clifford, 225, St. Vincent Street, Glasgow; 4 (with premium of £100), William Haywood, 245, Bristol Road, Birmingham. There were 133 competitors, and it was stipulated that the complete cost should not exceed £65,000.

The accepted design is that of a hall of moderate height seated for 3,500 people—area, grand tier, top gallery, and on the platform. A large circular dome surmounts the hall. The central entrance is from Cambridge Street, and there are other entrances in Grindlay Street, and in the lane to the rear of the buildings. Corridors, nine feet wide, run completely round the public portion of the hall on the ground and grand tier floors. The approach to the grand tier is by two marble staircases off the central floor marble crush hall, each staircase being 6ft. 6in. wide. They lead to a crush hall and two foyers. There are four staircases to the top gallery, each 4ft. 6in. wide, two from Grindlay Street and two from the Lane, all leading into commodious crush halls round the back of the gallery. Separate entrances and assembly rooms are provided for artistes. Ornament has been sparingly used externally, and the treatment is simple and dignified. The external walls are faced with stone, while the internal walls will be of brick, and the building will be fireproof throughout. The galleries are carried on steel cantilevers; there are no column supports. Heating and ventilating of the hall to be on the "Plenum" system; and the corridors, crush halls, foyers, and artistes' rooms will be warmed by radiators. The estimated cost is £61,784. Mr. Symon, who is a native of Edinburgh, has set his building, which is in the French Renaissance style, with the platform or orchestra end towards Lothian Road, in order to have the music between the noise of the traffic and the audience. His elevation has a dignified and monumental aspect. The other two premiated plans are of classic design. Among the other designs submitted were many of merit, but Sir Aston Webb stated that the estimated cost of some of these was quite inadequate for the building proposed.

The Decline of Technical Education.

What is wrong with technical education? The young artisans for whose benefit it is provided seem to be growing tired of it. At a recent meeting of Sedgley District Council, the report presented by the Education Committee contained an expression of regret that although a building construction class had been provided in a district where there were a large number of bricklayers and carpenters, the number of students attending was miserably small, and, the expenses incurred being heavy, it had been decided to discontinue it. In course of the discussion on the subject, the hope was expressed that employers would take the matter up, and urge the young people in their employment to attend the classes. It was stated that "in many districts in South Staffordshire difficulty was experienced in persuading the young people to acquire technical knowledge." This difficulty is presumably universal, but we are unaware whether elsewhere it has had the extreme effect of causing the classes to close down. At any rate, it is sufficiently obvious that technical education in this country is badly in need of popularising, and some systematic means of setting forth its advantages to employer and employed, and its vital importance to the welfare of the nation, should be instituted without delay, unless we are prepared to see a rapid decadence in craftsmanship, and consequent national degeneracy that may turn out to be absolutely disastrous to the country. It can hardly be said that employers are sufficiently exerting themselves for the prevention of this threatened calamity. They leave the matter too much in the hands of professional educationists, and manifest too little personal interest in the young men whom they employ as apprentices or improvers. Nor do they, as a rule, adequately reward or encourage those young craftsmen who study hard to make themselves proficient. To be frank, there is considerable shortsighted selfishness on both sides. The employer will not take the trouble to look beyond his own immediate interests, and the young workman cannot conceive that it is worth while to labour hard at self-improvement for what he believes to be the sole benefit of his employer. Hence we have arrived at an *impasse*, and the great need of the present moment seems to be a sounder conception and a larger and a more enlightened view of the whole subject of technical education—a judicious stirring of the embers of the enthusiasm for it which seems to have died down in sympathy with the depression of trade. We repeat the suggestion that we have made more than once before, that the National Federation of Building Trades Employers might accomplish a grand and truly patriotic work if they, as the chief employers of skilled labour in this country, took this matter seriously in hand, and set it on a rational and national basis.



The ground floor has accommodation for the bank and shop. Above are rooms for undergraduates.

UNION OF LONDON AND SMITH'S BANK, TRINITY STREET, CAMBRIDGE. W. D. CARÖE, M.A., F.R.I.B.A., F.S.A., ARCHITECT.

(See Centre Plate.)

St. Paul's Bridge.

We are glad to learn, on the authority of the "City Press," which is usually very well informed on such matters, that the statement to the effect that a hitch had occurred between the Corporation and the London County Council with regard to the building of St. Paul's Bridge is entirely devoid of foundation. "No hitch has occurred, and there is no abandonment of the scheme." It is nevertheless acknowledged that for the moment the Corporation has not accepted the contribution towards the cost of the bridge approaches that the Council has offered; but our city contemporary has no doubt that this question will be easily arranged, and we trust that this optimistic forecast may be justified. Also it is reassuring to learn that the Corporation certainly does not contemplate "driving a tunnel for tramway purposes, to the detriment of the cathedral or its foundations." All this is very comforting as far as it goes; but it does not relieve one's special anxiety as to whether St. Paul's Bridge is to be architecturally a glory or unarchitecturally a disgrace to London.

Payment for Unadopted Plans.

An interesting but by no means a novel point of law arose in an action brought at Perth last week by a Forfar firm of architects. They claimed £20 as a fee for preparing plans for a villa. The plans were not used, and the defence was that therefore there was no liability; but, "without prejudice," the sum of four guineas was tendered. Sheriff Sym held that the invitation to the architects imported that if he (defendant) built, and made them architects, "they would be paid by architects' usual commission; but if he did not make them architects, they would nevertheless be remunerated for their trouble." The Sheriff repelled the contention that the remuneration was to be a voluntary payment at the defendant's pleasure, and referred the matter to an independent architect to assess the value of the plans. The assessor thought that a fee of thirteen guineas would be fair remuneration, and the Sheriff allowed plaintiffs that sum, plus expenses of the legal proceedings. This case is typical rather than extraordinary. It is almost an everyday occurrence that architects are asked to prepare plans which the client wishes to regard tentatively; and if, on seeing them, he decides not to adopt them, he is apt to feel aggrieved at having to pay for them. In his view they are so much wastepaper, valuable only as affording the architect an agreeable opportunity for the exercise of his natural functions. A lawyer may charge for merely writing a short letter, and his client pays for it without a murmur; but an architect may spend days and weeks in the preparation of plans, and ought to rest satisfied with the enjoyment of the creative act! In such cases the architect owes it not only to himself, but to his profession to do what he can to disabuse the public mind of this curious fallacy.

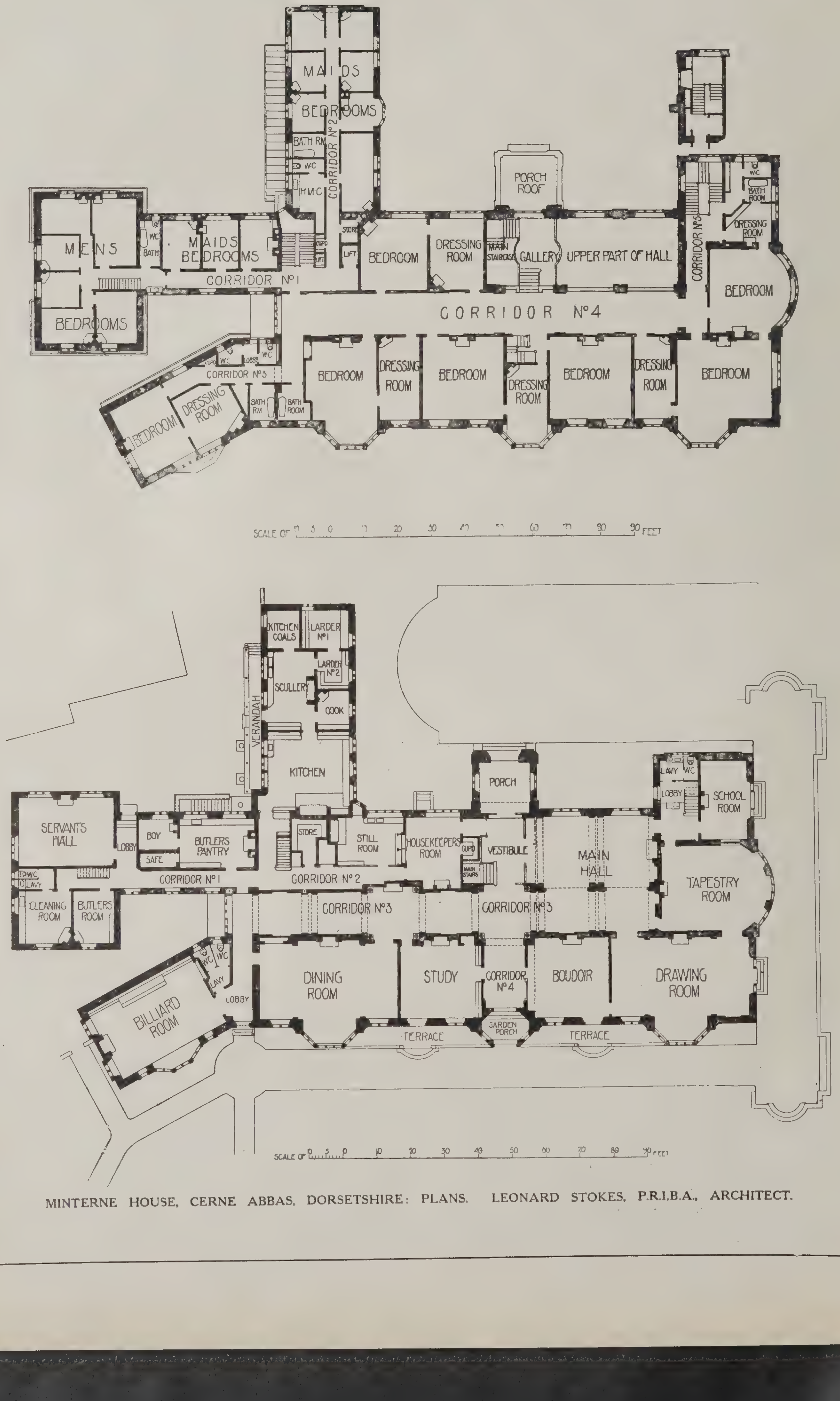
Minterne House, Cerne Abbas, Dorset.

(See pp. 84, 87.)

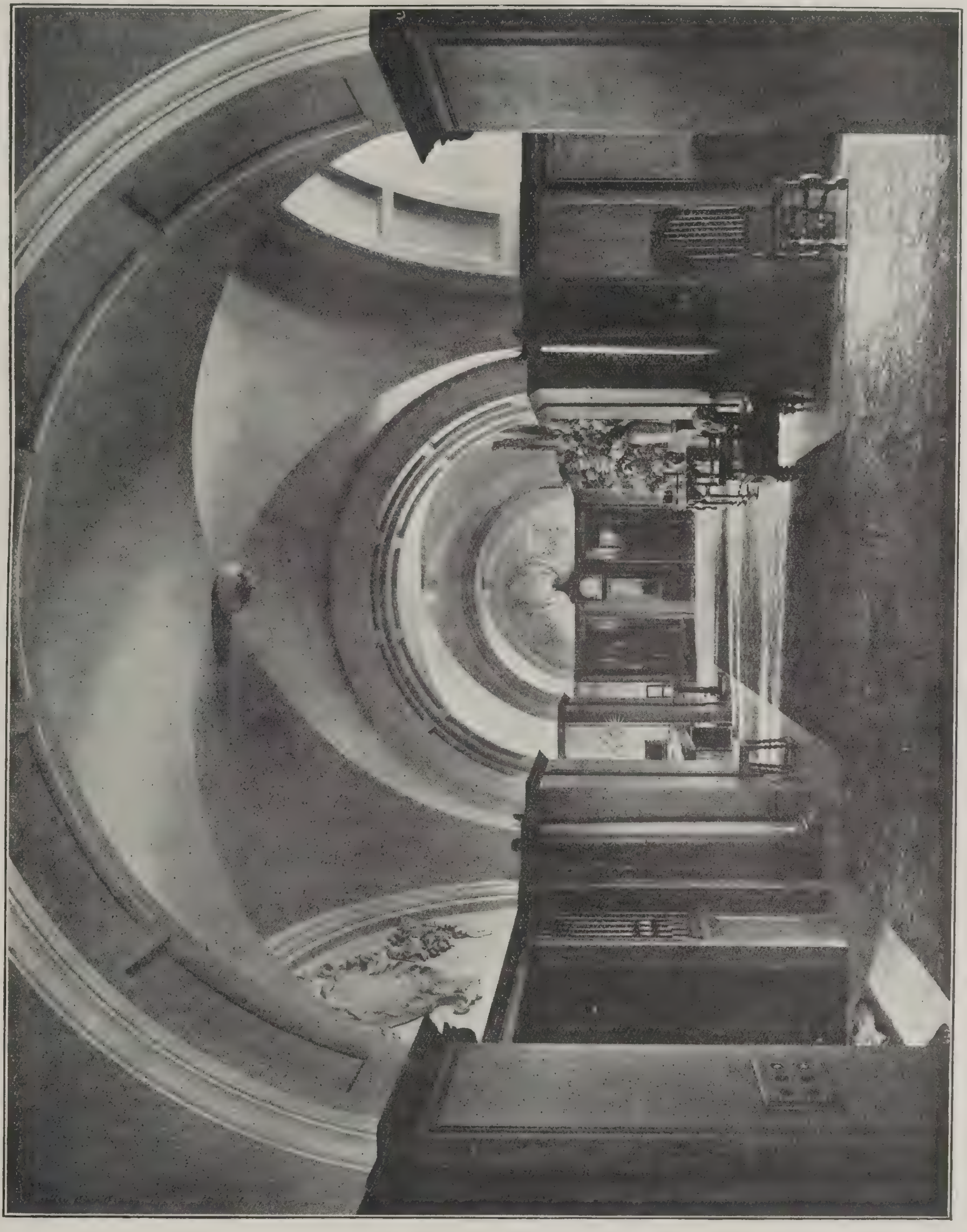
Minterne House, Cerne Abbas, near Dorchester, designed by Mr. Leonard Stokes, P.R.I.B.A., for Lord Digby, is situated on a level site at the end of a valley some 600ft. above the sea, with a south-east aspect, and is built of Ham Hill stone; the dressings to window and door openings, etc., as well as the mouldings, being finished with a dragged face. The bands are finished with a neat vertical tooled face, and the remaining stone, mainly consisting of ashlar, shows a hammer-dressed face, in courses about 3in. or 4in. high. The stone carving was executed by Mr. M. Murphy, of Chelsea. The internal walls are of brick, with occasional Mack partitions. Messrs. Davies's Precelly rustic random slates, from Gilfach Quarries, cover the roof. The chimney caps of terrace wall are of Doulting stone from the Chelynch bed. All the stonework, amounting to about 30,000 cubic feet, was prepared by the Ham Hill and Doulting Stone Company, Ltd., at their quarries, and was fixed and cleaned down by their men. The electric light installation was supplied by Drake and Gorham, Ltd., London, S.W.

The heating arrangements were carried out by Edward P. Milne, of the Strand, W.C. The system installed for the heating and hot-water services to the baths, lavatories, and sinks is Milne's duplex system of heating and hot-water supply. The water in the domestic service is heated by the water which supplies heat to the radiators, but the two waters are absolutely separate, and do not mix, and there is no incrustation from the hardness of the water in the district. The heating mains are under separate control, and can be shut off in the summer time. One boiler works both systems instead of two as in the ordinary arrangement, effecting economy in fuel and attention. The radiators in the corridors and the principal rooms are encased by wood panelling with metal grilles, most of them having fresh-air inlets.

The general contractors were John Mowlem and Co., of Westminster; and among the sub-contractors were the following: Fire-resisting construction, Potter and Co., Victoria Street, Westminster; casements and casement fittings, Henry Hope and Sons, Birmingham; stoves, grates, etc., Bratt Colbran and Co., London, W.; and Longden and Co., London, W.; plumbing and sanitary work and fittings, Dent and Hellyer, London, W.C.



MINTERNE HOUSE, CERNE ABBAS, DORSETSHIRE: PLANS. LEONARD STOKES, P.R.I.B.A., ARCHITECT.



MINTERNE HOUSE, CERNE ABBAS, DORSET: CORRIDOR ON THE GROUND FLOOR.

LEONARD STOKES, P.R.I.B.A., ARCHITECT.

NEWS IN BRIEF.

Among the names of the sculptors who are to be considered for the memorial statue of King Edward VII. at Aberdeen, are Sir G. J. Frampton, R.A., Mr. Thomas Brock, R.A., Mr. F. Derwent Wood, A.R.A., Mr. Hamo Thornycroft, R.A., and Mr. Wade.

* * *

The new front of the Guildhall, London, which has been for some months under erection, is now exposed to view on the completion of the work. The two sides of the entrance porch now correspond in height and design. The alterations have been carried out under the supervision of Mr. Sydney Perks, the City Surveyor.

* * *

Hurstmonceux Castle, Sussex, has been bought by Mr. Claude Lowther, and is therefore saved from the vandals. It is said to be the new owner's intention to leave the famous ruin to the nation.

* * *

It is suggested that the Chichester Memorial to the late King should take the form of a complete renovation of the West Sussex, East Hants, and Chichester Infirmary. The cost of the work is estimated at between £20,000 and £24,000.

* * *

Mr. Thomas Bartlett, of Pembroke Place, intends to present to the Liverpool Cathedral a peal of thirteen bells, one being the master bell. The sum of £7,500 has been set aside to meet the cost, but whether that figure will be reached exactly will depend on the price of metal at the time operations are commenced.

* * *

Mr. Romaine-Walker, A.R.I.B.A., the architect of the new Turner wing of the Gallery of British Art (the Tate Gallery) had the honour of being presented to the King on the occasion of his Majesty's private visit to the gallery.

* * *

The Corporation of Bradford and the newly formed National Portrait Society have opened the first portrait exhibition ever held in the English provinces. It comprises about a hundred works, and will be transferred to Oldham, and thence probably to the Walker Art Gallery at Liverpool.

* * *

Owing to a printer's error in the note on page 65 of our issue last week, concerning the removal of the offices of Messrs. Rickman and *Burr* from Montague Street, Russell Square, to 5, Queen Square, W.C., the name of the firm was given as Rickman and *Burn*.

* * *

Recent deaths include the names of M. Georges Berer, Member of the Institute, and a former president of the Central Union of Decorative Arts, and of Mr. J. E. Every, the mezzotint engraver, who was a regular exhibitor at the Royal Academy, and had engraved Millais's "Bubbles" and Gainsborough's "Mrs.

* * *

The new monument to Alfred de Musset, which was recently unveiled in the Avenue d'Antin, at the corner of the Cours la Reine, Paris, shows the poet seated between figures personating his creations of "May Night" and "December Night." M. Moncel is the author of the monument.

* * *

For the construction of a reinforced concrete bridge on the Kahn system at Ponteland (Messrs. Watson and Scott, architects, Newcastle-on-Tyne), the tender of the Reinforced Concrete Constructional Engineering and Contracting Co., Ltd., North Shields, has been accepted. The same firm have been successful in tendering for the work of constructing about 400 yards lineal of concrete retaining walls to the river at Woodend, Cumberland.

* * *

North-East Lincolnshire as "an industrial centre offering the most favourable opportunity for the establishment of successful enterprises" is described and illustrated in a pamphlet, of which copies can be had gratis from the Publicity Department of the Great Central Railway, 216, Marylebone Road, London, N.W. The district, which comprises Grimsby and Birmingham, has many natural advantages, including "building materials in ample quantity," and this pamphlet is well calculated to assist the anticipated developments.

* * *

Messrs. George and Edward Blum have prepared their plans for the reconstruction of the Law Courts, New York. The new building, which will be a skyscraper, is to be in Duane Street, and is estimated to cost £2,000,000, with a further £400,000 for foundation works.

* * *

A sum of £230 is being collected to re-erect the Old Market Cross at Grantham, which was taken down in 1886 owing to its unsafe condition. The original stones, excepting a few pieces, have been preserved in the yard of Messrs. Priests', contractors.

* * *

Mr. J. A. E. Toone, architect, of Manchester, has accepted an important architectural post at Ipswich, near Brisbane, and will shortly leave England. Mr. Toone is a well-known lacrosse player.

* * *

We have received from the British Fire Prevention Committee a copy of their report on some 450 fire tests with flannelette and other textile materials. The Committee's reason for undertaking these tests has been the serious increase in the loss of life among children due to burning fatalities caused directly or indirectly by highly inflammable wearing apparel. An effort has been made to obtain reliable data on the relative inflammability of various textiles, and to ascertain the efficiency of flannelette that has been treated with the view of reducing the risk of fire.

* * *

The foundation stone of the new building in Leeds for the Pearl Life Assurance Co., Ltd., was laid on the 14th inst., by the President and Founder of the Company. The total cost of the land and building will exceed £60,000. The work is being carried out from the design and under the superintendence of William Bakewell, F.R.I.B.A., architect.

* * *

Mr. A. H. Dykes, of 1, Victoria Street, Westminster, S.W., has been appointed honorary secretary of the newly formed Association of Consulting Engineers.

* * *

The summer meeting of the Royal Archæological Institute of Great Britain and Ireland was opened at Oxford last week. The members were welcomed by the Mayor, Mr. J. E. Salter, and the Corporation in the Municipal Buildings. Professor W. Boyd Dawkins, in the absence through illness of the President (Sir Henry H. Howorth), acknowledged the welcome, and mentioned that it was sixty years since the Institute's previous visit to Oxford. The number attending this year was unparalleled. At the Sheldonian Theatre the members were welcomed by Sir John Rhys, Principal of Jesus College, Pro-Vice-Chancellor, on behalf of the University. He remarked that the Welsh Monuments Commission had been the means of making him realise the unsatisfactory state of the law of this country as regarded the preservation of ancient monuments. It was practically a dead letter, and he suggested that the Royal Archæological Institute should appoint a committee to prepare a statement which should serve as the basis of a new law.

* * *

The funeral took place at Overstone Church recently of Mr. Josiah Mander, of Overstone Park, who died at Bournemouth, where he had gone to recruit his health. He was for a period of 44 years resident architect and surveyor for the estates of the late Lord Overstone and his daughter, the Baroness Wantage, in the Counties of Northants, Cambs., Bucks, Leicester, and Berks, in which counties many new buildings and improvements have been designed and carried out by him, including restorations of Sywell, Overstone, and other churches, and new schools at Overstone and elsewhere. In addition to the work on the above estates, he has designed and carried out numerous buildings, principally in the County of Northants, for other noblemen and gentlemen, including the Rt. Hon. Earl Spencer, Rt. Hon. Earl Carysfort, Viscount Melville, Lady Dorothy Fitzwilliam, Sir A. de Capel Brook, Mr. D. C. Guthrie, Rev. J. White, and Mr. A. R. Steele, etc., etc.

* * *

A gruesome variant on the many legends of the divining rod is going the rounds. The story is to the effect that among the visitors to Bangor Cathedral a few days ago there was a clergyman who asked the verger whether there were many interments within the building, and produced a simple-looking brass instrument composed of wires which converged into a point and were held by two handles. This instrument, he explained, would indicate the presence of graves. He walked about the Cathedral with it in his hands, and every time he crossed a gravestone the instrument made a downward movement. Prodigious!

* * *

"The Development of the College Plan" was the subject of a paper read by Mr. Aymer Vallance at the Ashmolean Museum, Oxford, on the occasion of the visit of the Royal Archæological Institute.

* * *

Messrs. Robt. Ingham Clark and Co., Ltd., 6, St. Helen's Place, E.C., and West Ham Abbey, E., have been awarded a Diploma of Grand Prix for their exhibit of varnishes and enamels at the Japan-British Exhibition.

* * *

The following paragraph appeared in the "Daily Telegraph" of last Friday: "A correspondent writes: I notice in your report of a boating accident at Twickenham, when several people were thrown into the river, that although the name of the boat and owner are given, the name of the pedestrians who went to the assistance of the party is not mentioned, nor that of a gentleman who dived from the motor-launch 'Alsatia.' It may interest some of your readers to know that the 'pedestrian' is Mr. Frank Regan, son of the Mr. James Regan, of Victoria Park, who has himself rescued more than 100 persons from drowning." It may interest some of *our* readers to know that the Mr. F. Regan who performed this gallant act is a member of the advertising department of this journal.

AGREEMENTS FOR BUILDING CONTRACTS.

Under the above title a paper was read in February last before the American Society of Civil Engineers by one of its associate members, Mr. Wm. B. Bamford, and was followed by a full and interesting discussion, in which engineers, architects, lawyers, and contractors joined.

The lecturer said his paper had been limited to agreements for the construction of buildings, because he had given this type special study, and because he felt that the principles underlying such agreements are readily adaptable to those for other construction, and that many of the vital questions at issue can be brought out more effectively by taking a concrete case rather than by dealing in generalities. After pointing out that, from the practical standpoint of the building agreement, it matters little whether the person who planned the building and will have charge of it until completion is called an engineer or an architect, he goes on to say that his paper is not a defence of the contractor as against the engineer or architect, but is simply one advocating justice and equity to all parties to a contract. Then follows an historical summary, from which it appears that the American Institute of Architects, in co-operation with the National Association of Builders, adopted, a number of years ago, the "Uniform Contract" which, without material changes, remains in force up to the present time, but is admittedly defective. The lecturer having heard of the contract issued by the R.I.B.A. in agreement with the Institute of Builders and the National Federation of Building Trades Employers, and finding it almost unknown in America, carefully examined the British form, and remarks: "The more closely the writer analysed his own work and ideas and compared them with those of the R.I.B.A., the more firmly convinced he became of the excellence of the latter's work." Consequently he decided "to sink personal consideration and frankly undertake to revise a most excellent document to meet American conditions."

Systems of Contracting.

"At present the systems of contracting used in building work may be divided into two general classes, the lump-sum system and the various percentage systems. They are often designated by the manner in which the work is paid for, as (1) Lump sum; (2) cost, plus a percentage; (3) cost, plus a percentage where the general contractor takes estimates for sub-branches of work, and makes lump-sum contracts, with the engineer's approval; (4) cost, plus a percentage, with guaranteed limit; (5) cost, plus a fixed sum; (6) cost, plus a fixed sum, with a bonus if cost is less than a fixed sum, and a penalty if it exceeds such sum."

Of these the lump-sum system is the most usual, and is, the author considers, the best, as more truly fostering fair and open competition, and, as experience has demonstrated, it is more economical. Nevertheless, the author considers the other systems will eventually supersede the lump-sum system, unless more care is taken to make contracts complete and accurate in all details forming the basis of the contracts.

Quantities too Cumbersome.

It is curious to note that "The English method of quantity surveying is another excellent attempt to overcome the worst objections to the lump-sum system of estimating, but, as at present in use, it would be too cumbersome for American practice." The above statement will provoke a smile over here, for what can be more cumbersome than a system by which any contractor has to take out his own quantities?

Practical and Equitable Contracts.

Some of the admissions are very frank when coming from an engineer. For example, the lecturer remarks: "Many contracts appear to be drawn by the engineer solely on the assumption that the owner's interests must be most carefully guarded against failure by the contractor to fulfil his agreements properly." And, again, "An owner may become very exacting, and may insist on 'strict and literal' compliance with the letter of the specifications and contract, and may place an engineer in a very embarrassing position by referring to and insisting on the literal fulfilment of certain ambiguous conditions, or the 'taking of every pound of flesh' against the engineer's better judgment." Mr. Bamford concludes that: "The value of a just contract to the owner and the engineer is as great as its value to the contractor. A just contract, provided it is accurate and free from ambiguity, cheapens the cost of work by eliminating the necessity for sums to cover possible contingencies; it broadens real competition, and encourages lower estimates. It ensures more rapid erection and also acts as a powerful regulator of the mutual understanding and confidence in the fairness of all parties."

Specification Writing.

Referring to specification writing, Mr. Bamford says it requires "broad knowledge, practical experience, and careful study of the various materials and methods of construction and their costs." Inexperienced writers, he says, are apt to write at unnecessary length on matters with which they are familiar, and cover ignorance of equally important matters by the brief and ambiguous direction that "the work shall be done to the entire satisfaction of the engineer, whose decision is to be final and binding on all parties."

Contractual Referees.

Coming to the question of arbitrators, the lecturer remarks that "Engineers have always claimed to be arbitrators between owner and contractor, and not the representative solely of one party. This position is a proper one [?], but to-day it is more of a myth than a fact." He says this is because the contracts generally used "make it extremely hard, if not almost impossible, for engineers to be fair if they try to conform to the agreement provisions."

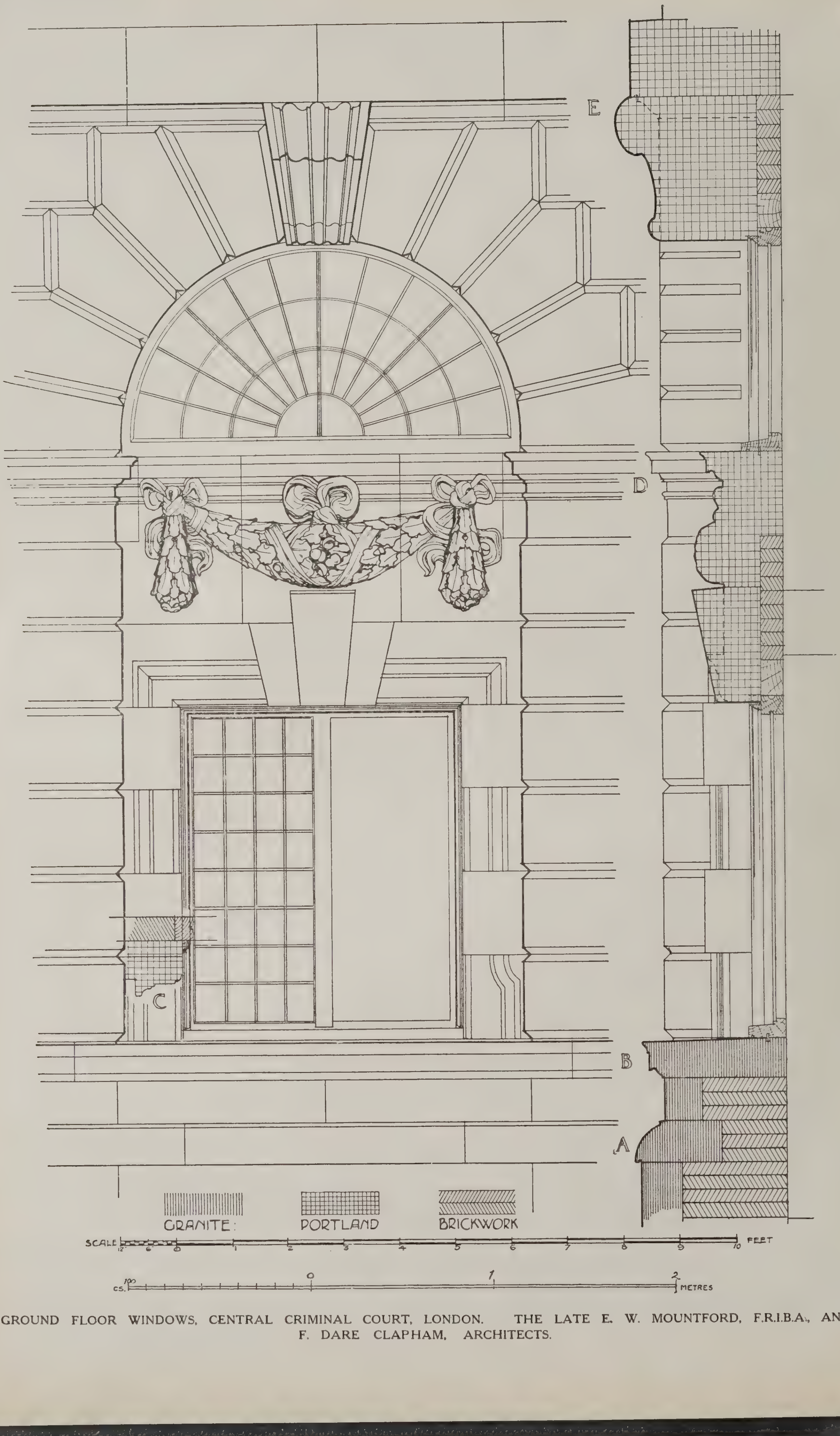
Having shown the real need there is in America for an equitable form of contract, Mr. Bamford proceeded to submit a proposed Agreement and Schedule of Conditions of Contract modified from those adopted by the R.I.B.A. retaining the language of the original wherever possible. In commenting upon the arbitration clause, he says: "Around it centre the much discussed authority of the engineer or architect to settle all matters of every kind and description. Everyone who has exercised such powers must realise that while they are theoretically desirable, their proper curtailment would unravel a very difficult situation, and would permit questions being considered in a more equitable light by all parties."

Points from the Discussion.

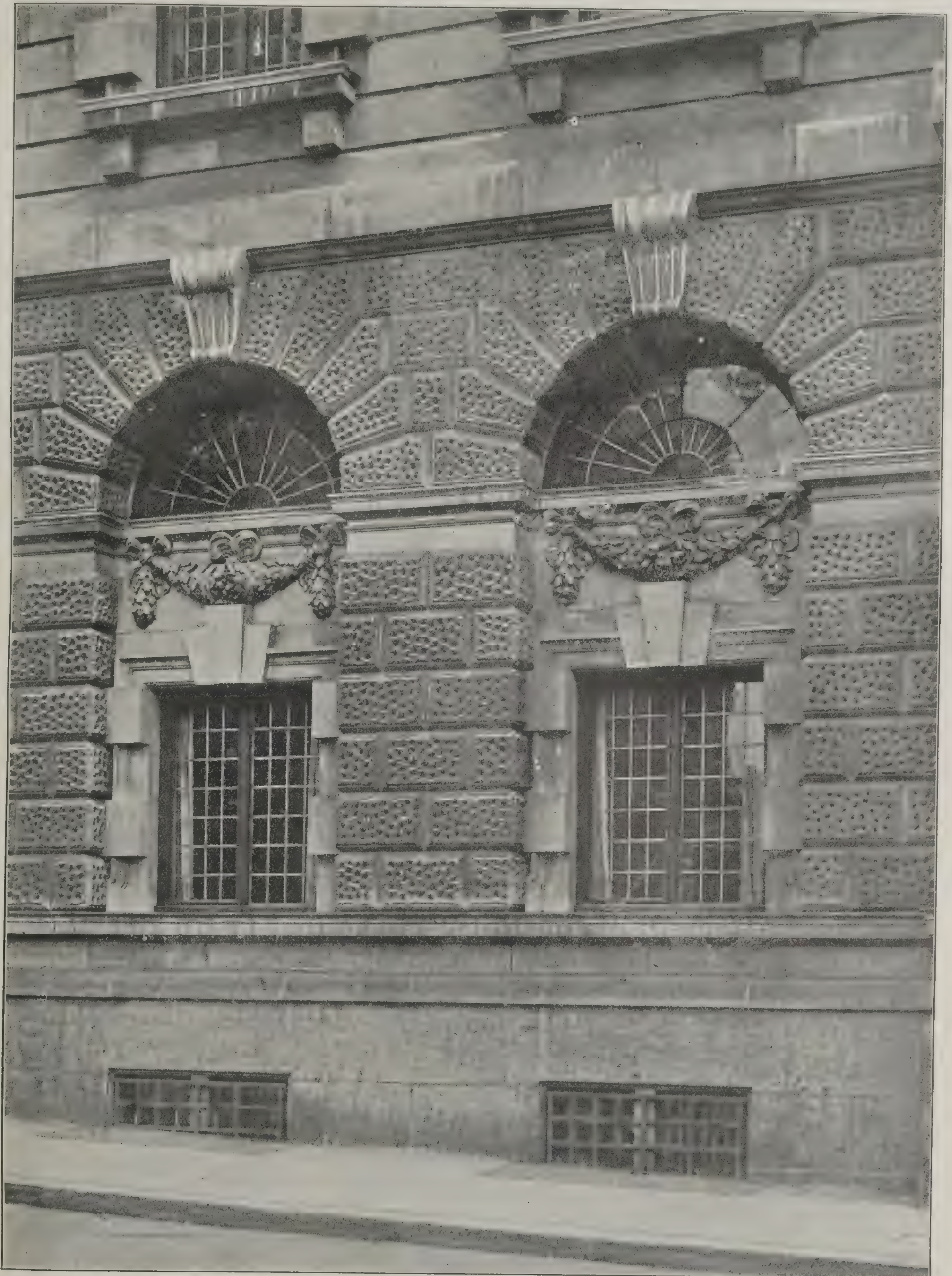
In the course of the discussion which followed, much favour was shown to the "cost plus" contract, on the ground that it unites the clashing interests of owner and contractor, and secures to the former the fullest advantages of the technical skill of the contractor. It was also remarked "It may be accepted as axiomatic that 'unfair conditions breed unfair contractors,' a case of the survival of the fittest." And, again, "It is the duty of engineers to work for all things which make for a more definite and fair relation between the owner, represented by his engineer, and the contractor." Apropos of the type of contractor it is desirable to employ, an architect remarked: "Too often a client makes the mistake of thinking that perfect specifications make a perfect building. He engages his architect, and thinks it does not make much difference who the contractor is, for as long as he has a good plan and specifications, the contract is bound to produce a building as described. The erection of a building is a question between men; on the part of the contractor as to ability and integrity, and on the part of the architect to describe clearly what he intends the building to be." One of the points clearly brought out in the discussion is that owing to there not being in the States any General Arbitration Act, similar to what obtains here, all arbitrations are subject to appeal to the Courts if either party is dissatisfied with the award, and much complaint is made of the consequent expense.

CONTRACT NOT UNDER SEAL.

In the King's Bench Division last week, Mr. Justice A. T. Lawrence heard the case of Hodge v. Urban District Council of Matlock Bath and Scarthin Nick and Nuttall, which was an action by an architect for wrongful dismissal. It appeared that the defendant council passed a verbal resolution that the plaintiff and Mr. Nuttall should be employed as joint architects for the erection of a kursaal, and that the plaintiff prepared plans and for some time did work in pursuance of the resolution. Before the work was finished the plaintiff was dismissed. He brought an action, which was heard at Derby Assizes and in which the jury found a verdict in his favour. The principal defence raised in that action was that the plaintiff could recover nothing, as the contract under which he had been employed had not borne the Council's seal; and the case now came on in London for further consideration of the point of law. For the plaintiff, Mr. Shearman, K.C., submitted that as the work done had been necessary and had been accepted, the council must pay under "Lawford v. Billericay Rural District Council" (1903, 1 K.B., 772), although there had been no seal. Mr. Hugo Young, for the defendants, submitted that this was a contract which required to be under seal. The work was not for the purpose of doing something the council was obliged to do, for the private Act merely said they might, not that they must, erect a kursaal, and if a seal was required, nothing could be recovered on a *quantum meruit.* Mr. Justice Lawrence said that as the resolution employing the plaintiff was not under seal the plaintiff could not succeed in an action directly based on it for breach of contract or wrongful dismissal; but as the defendants had had the benefit of his work he could recover on a *quantum meruit* the sum of £230, which the jury had found he would be entitled to. There must be judgment for the plaintiff for £230, and costs except as to the issue whether the contract was under seal.



GROUND FLOOR WINDOWS, CENTRAL CRIMINAL COURT, LONDON. THE LATE E. W. MOUNTFORD, F.R.I.B.A., AND F. DARE CLAPHAM, ARCHITECTS.



There is a range of these windows on the Old Bailey front, the two here shown being at the Newgate Street end. Up to the level of the main string course the stone of Old Newgate Prison, redressed, has been used, the remainder being in new Portland stone. The plinth up to the window sills is of grey unpolished Cornish granite.

GROUND FLOOR WINDOWS, CENTRAL CRIMINAL COURT, LONDON.
THE LATE E. W. MOUNTFORD, F.R.I.B.A., AND F. DARE CLAPHAM, F.R.I.B.A., ARCHITECTS.

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ITALIAN SCAFFOLDING.

FIRST ARTICLE.

BY A. G. H. THATCHER.

Italian scaffolding is mediæval in type, with many details engrafted into its methods due to modern improvements. Its characteristics are worthy of study. It varies from a substantiality which would suit all purposes, to a fragility which is almost ludicrous. Square timbers are used which favour the view that they are permanently erected: in other instances, poles are found, a comparison with which any self-respecting clothes prop would shy at.

Italian engineers are reputedly skilful in dealing with scaffolding, and instances were recently given in this paper of the invention of new types in connection with the Campanile in Venice. Other instances might be mentioned, but although skilful in conceiving, no hesitation is made in adapting forms known and found of merit. It is mentioned that Fontano employed square timbers for the erection of the obelisk in front of S. Peter's Rome, about 1586, A.D., but earlier instances are known of the use of such material, notably during the building of Cologne Cathedral during the thirteenth century

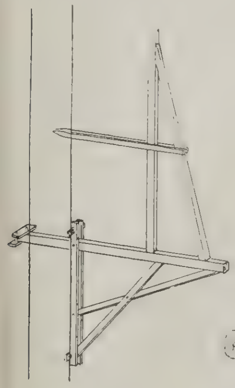


Fig. 1.

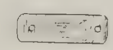


Fig 2.

Fig 3.

Pole scaffolding must also have been used by Italian builders from early times. In the atrio of S. Mark's Cathedral, Venice, there are some mosaics, commenced in the thirteenth century, which illustrate the artist's conception of the building of the Tower of Babel. It is probable that the designer showed pictorially the earliest kind of scaffolding of which he had knowledge, perhaps that of a century or so earlier. The details given of the mortar mixing, the head-carried "hod," the iron frame to hold it while being filled, create a curiosity in a subject about which there is no written history.

The mosaic referred to also shows very clearly the run used to form a way and transport material to the heights of the building, a method which the labourer of this country, with electric, gas, and steam powers and many simple machines at his disposal, would find somewhat wearisome, although it still obtains in Italy.

The statement that Italian scaffolding is mediæval in type requires, perhaps, some elucidation. No written history of scaffolding exists, but enquiries made from time to time—for instance those made by the eminent French architect the late M. Viollet-le-Duc—show that flying or needle scaffolding formed a principal means of building from the earliest known ages, and reached, perhaps, its greatest development during the building of the great Continental cathedrals. Needle scaffolding is used to a small extent in this country, but only for repairs where the carcase of the building is *in situ*. The mediæval builders, with greater daring or skill, freely used the needle in new erections. The openings where the needles were fixed can be seen to this day in some important structures.

M. le Duc was of opinion that the usual method of so conducting the works could be illustrated by a sketch, Fig. 1. The ground was used as a base in the lower portions, but the platforms higher were made self-supporting so that the lower timbers could be moved and re-used higher. Such a principle is common in Italy to-day. There is a somewhat weird effect in seeing a scaffold clinging close to the higher portions of a building and the standards hanging pendant wise from the lowest platform, but quite clear of the ground.

The scaffolding of two buildings under erection and repair in Naples, recently seen by the writer, possessed some points of interest. In neither was cordage used in its connection. In fact, throughout Italy the hempen or wire rope is a rarity as a means of construction. The Neapolitan method, and the vogue obtains throughout Central and

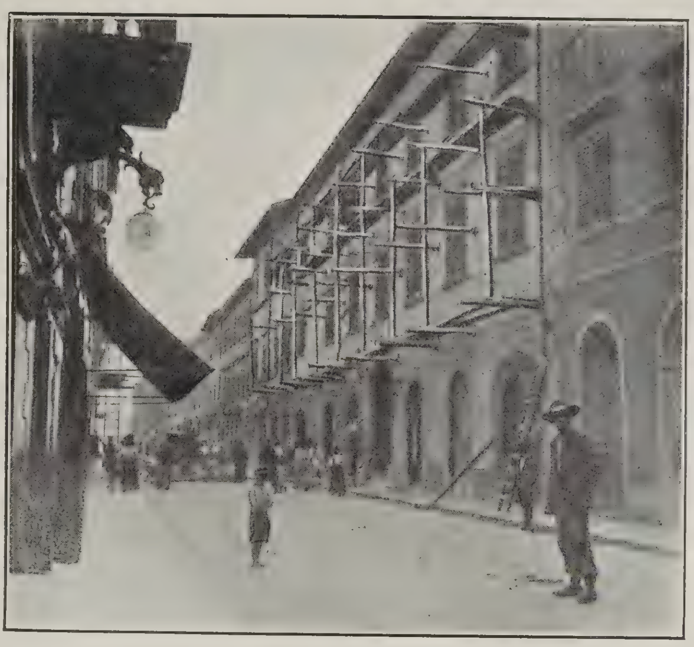


FIG. 9.—A LIGHT TYPE OF SCAFFOLDING SEEN IN PISA, NO LEDGERS BEING USED.

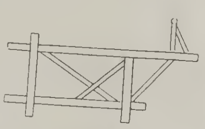


Fig. 8.

Fig. 4.

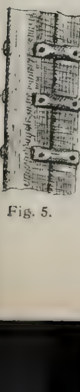


Fig. 5.

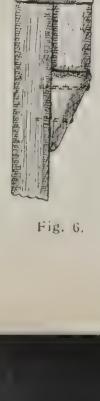


Fig. 6.

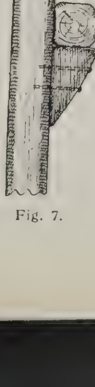


Fig. 7.

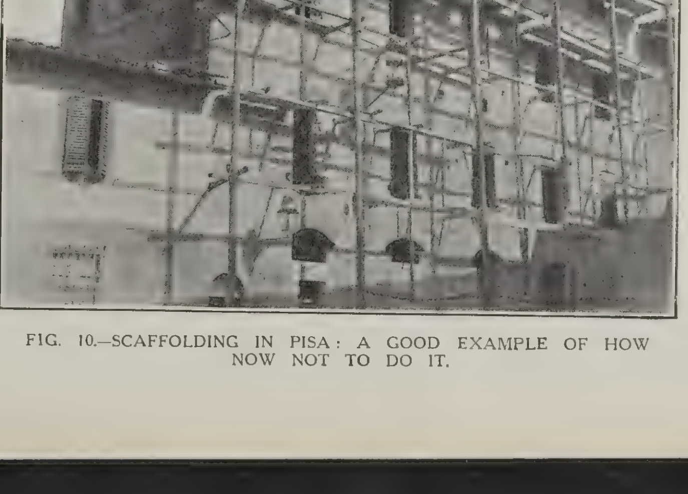


FIG. 10.—SCAFFOLDING IN PISA: A GOOD EXAMPLE OF HOW NOW NOT TO DO IT.

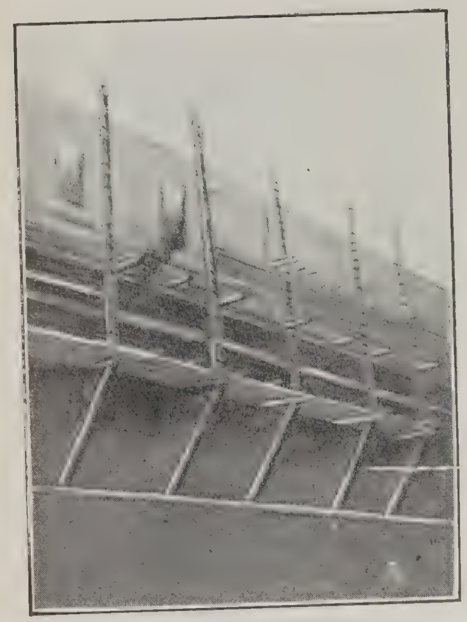


Fig. 11.—Needle scaffolding taken in Rome. The struts to the needles rise from a wall-plate.

Southern Italy, is simplicity itself. Short pieces of wood shaped as Figs. 2 and 3, according to the number of timbers the piece is to cover, are used as connections between the standards, being simply spiked thereto. They are placed comparatively close together, on an average about 18ins. apart, vertically, and both back and front of the poles. They act in like manner as a "dog," and have, of course, the same evil effect upon the timbers. To afford a closer fitting the poles need some preparation. Instead of being barked only, they are squared roughly to the section shown by Fig. 4. Fig. 5 gives a detailed appearance of a short length of double standards so tied. If single standards are used, the rising pole is supported on a cleat, (see Fig. 6). It will be seen from this how necessary are the slightly squared poles which are in general use. The ledgers also rest upon cleats arranged as Fig. 7. The ledgers generally are somewhat promiscuously arranged: continuity and evenness are not considered entirely imperative. This is partly due to the method of fixing and partly to the fact that the scaffolder uses the first timber to his hand. In consequence, he is constantly creating minor difficulties which he overcomes by the exercise of considerable ingenuity. This gives an unpleasing effect to the finished scaffold when examined in detail. A run way is used by the workmen as a means of ascent, and for the transport of material. Ladders are, of course, in use for these purposes, but not more than can be avoided. The slope is erected wherever possible. In common with this scaffolding generally the method is an old one. M. le Duc, in his "Dictionnaire de l'Architecture Française," remarks: "The construction of the Donjon de Coucy, which represents a cylinder of about 196 feet in height, only required a very simple system of scaffolding, and yet one which obviated the slow raising of the building material by machines. One may observe on the exterior of the cylinder a number of small square holes in the masonry, arranged spirally, and, from the magnitude of the diameter of the edifice, forming a helix, which has a very slow or gradual twist. These holes are square and in a double series. By means of horizontal timbers fixed in these holes and supported by struts (Fig. 8 is an illustration of the truss) a spiral roadway was formed along which the workmen could travel or move material."

Long timber shoots fixed down the front of the scaffolding are found useful, as the loose rubbish can be shot from the top of the building. In a country where, owing to the extreme dryness of the climate, dust is particularly light, such a proceeding is no doubt advisable.

There is a great similarity existing in the present-day methods to those of the middle ages. In a case at Naples the scaffolding was erected to modernise an old building. The truss at the second floor level is taking the weight of the whole structure, the standards having been removed from below the balcony to the ground. The putlogs are much more substantial than as used with us. In many cases they are carried into the building to form a tie. So far as is possible they are laid close to the standards, and are therefore rather far apart. This procedure seems somewhat inadequate from the point of strength, especially as the boards are of a common type with no additional carrying power. The ledgers to a great extent serve as connections between the standards only, the putlogs resting on cleats, and instances were seen where they were entirely dispensed with (see Fig. 9). Of course, this is particularly light work, the needles doing all the actual carrying.

Fig. 10 is another scaffold seen in Pisa. Ledgers are here used, but of light timbers. In consequence, the standards being far apart, puncheons were used between the bays. The dangers arising can be seen by the curve described by the bottom ledgers. In this instance also the rising standards are butted to those first erected, and they are kept in place by a short length which is lapped for about 3ft. over each. This is really a good example of how not to do it. More care is apparently taken of the street lamp, over which a basket is seen upturned. The putlogs being few in number, the boards are necessarily lapped, butted boards being unknown.

Fig 11 is a sketch taken from a building in Rome. It exemplifies the details of needle construction on a wall where few openings occur, the struts to the lower needles being carried on a plate spiked to the wall.

In the case of overhanging eaves, the platforms are supported by putlogs until the eaves level is reached. Then needles are used projecting beyond the face of the scaffold as far as is necessary. The method saves an extreme width of platform from the ground upwards, a consideration in narrow streets and pavements. Where more room is available, the standards are laid to a slope, standing well out into the road and leaning against the eaves above. The first platform in this is about 8ft. in width, that close to the eaves being extremely narrow, but to increase the width the putlogs projected sufficiently to carry an extra board. This cannot by any means be considered good construction.

(*To be continued.*)

CORRESPONDENCE.

Art and Building.

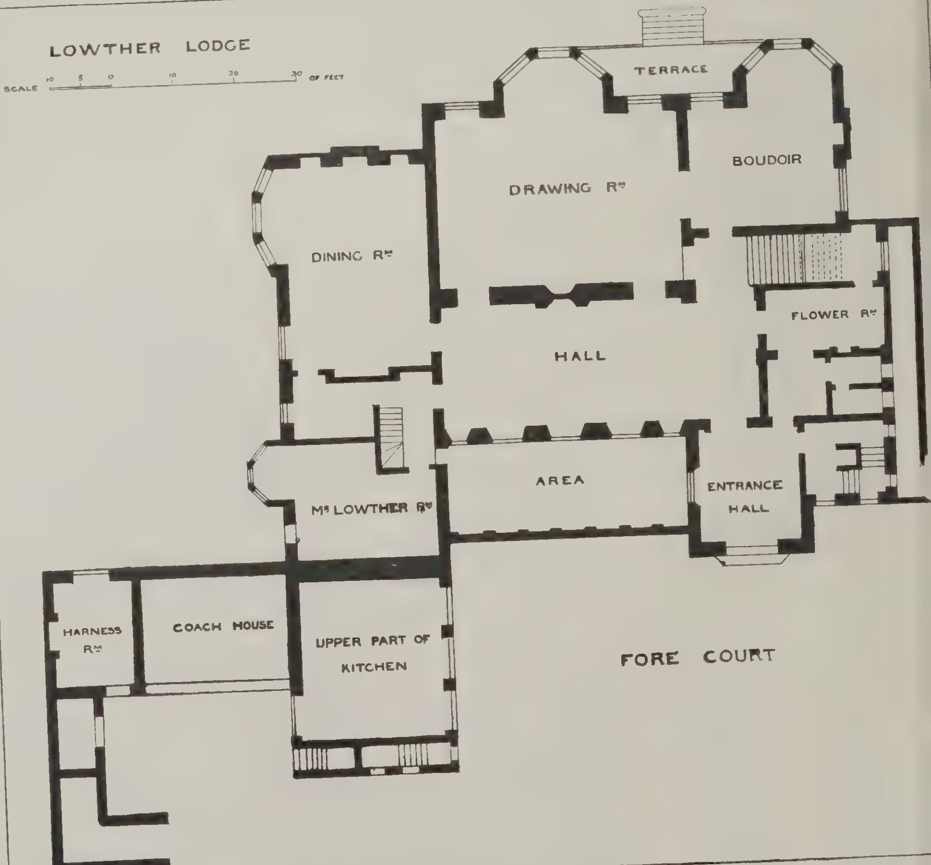
To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—With reference to the note in a recent issue on "Art and Building," I think your paper could be of service in this matter if you invited and published letters from your readers who are interested in the subject. There is no doubt that the purely art side of building is sadly neglected in our technical institutions. For instance, in building construction we have four stages of instruction, with annual examinations, and with subsequent certificate awards for each. Architectural design is confined to one stage, and even this is but little heard of. In fact, I believe there is no syllabus issued in connection with it, so that the subject for design comes to some who are wholly unprepared for it, while others, who have perhaps been executing similar work in the office just previous to the examination, have a distinct and unfair advantage. True, luck plays a part in all exams., but in this case it is quite beyond reason, and such an examination offers but little attraction for students.

D. J. MOSS.

London, S.E.

[We shall be quite happy to receive opinions and suggestions on the subject.—EDITOR].



In point of date Lowther Lodge is one of Mr. Norman Shaw's earlier plans. This well-known fine house at the corner of the Exhibition and Kensington Roads was built in the 'seventies.

GROUND PLAN, LOWTHER LODGE, KENSINGTON. R. NORMAN SHAW R.A., ARCHITECT.

THE DEVELOPMENT OF MODERN ARCHITECTURE.

Abstract of a paper read before the Birmingham Architectural Association by Gerald C. Horsley, F.R.I.B.A. (Concluded from page 19, No. 805.)

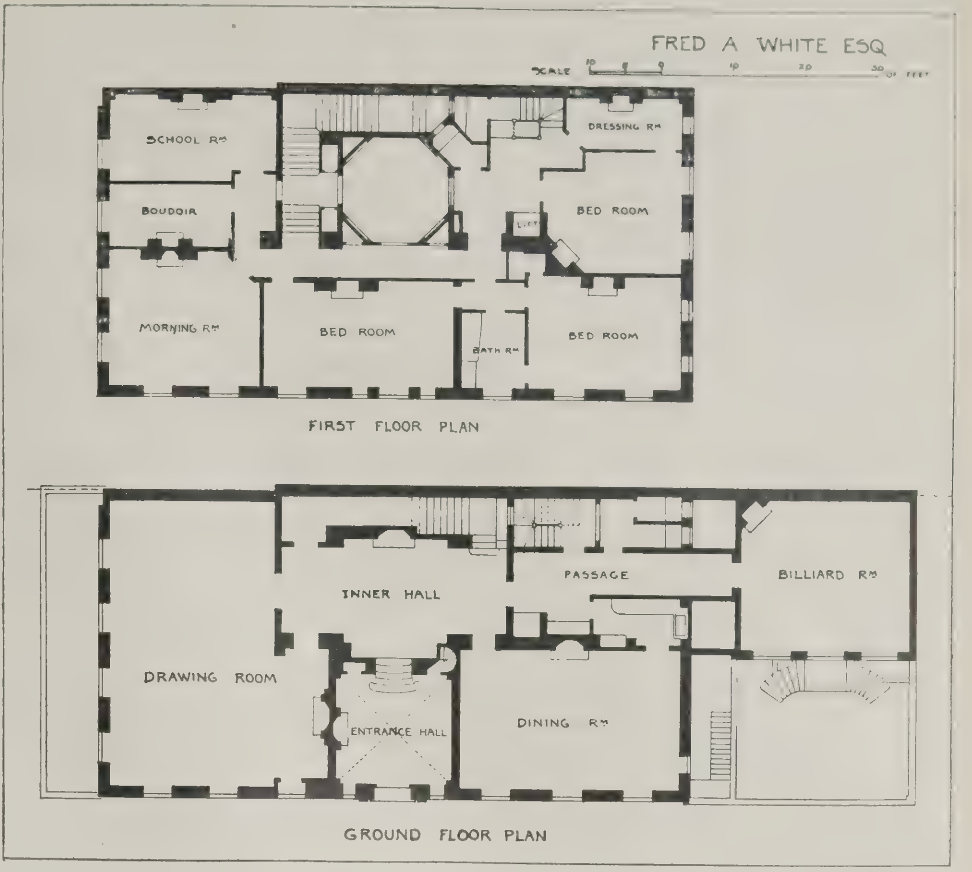
Note.—The author has made one or two quotations in this paper from a paper read by him at the Architectural Association in London in February, 1907, entitled "Some Aspects of Training and Design."

Some of the other modern house work shown on the walls was done by the late W. E. Nesfield, who was a contemporary of Mr. Shaw's early days. There was also recent work by Mr. Ernest Newton, Mr. Reginald Blomfield, Mr. E. J. May, and others, all showing the development of the qualities I have mentioned, and which speak for themselves.

Methods of Education.

The slight sketch I have given you of the development of modern English architecture to the present day will, I hope, make clear the necessity for a thorough strengthening of our existing methods of education. In that lies the best hope of the development of our architecture on right lines, and the ultimate achievement of a real national architecture.

We have in us the same spirit which animated the excellent and wise old Ambassador Sir Henry Wotton, who, in his "Elements of Architecture," published in the year 1624, lays down the dictum that "In Architecture as in all other operative Arts, the end must direct the operation. The end is to build well. Well building hath three Conditions—'Commodite,' Firmnes, and Delight." We shall have no architecture if we do not foster our artistic spirit.



This house was built in the 'eighties. Attention may be called to the able way in which Mr. Shaw has secured a roomy "Inner Hall" lit by a fine domed light.

PLANS, HOUSE FOR MR. F. A. WHITE, QUEEN'S GATE, LONDON, R. NORMAN SHAW, R.A., ARCHITECT.

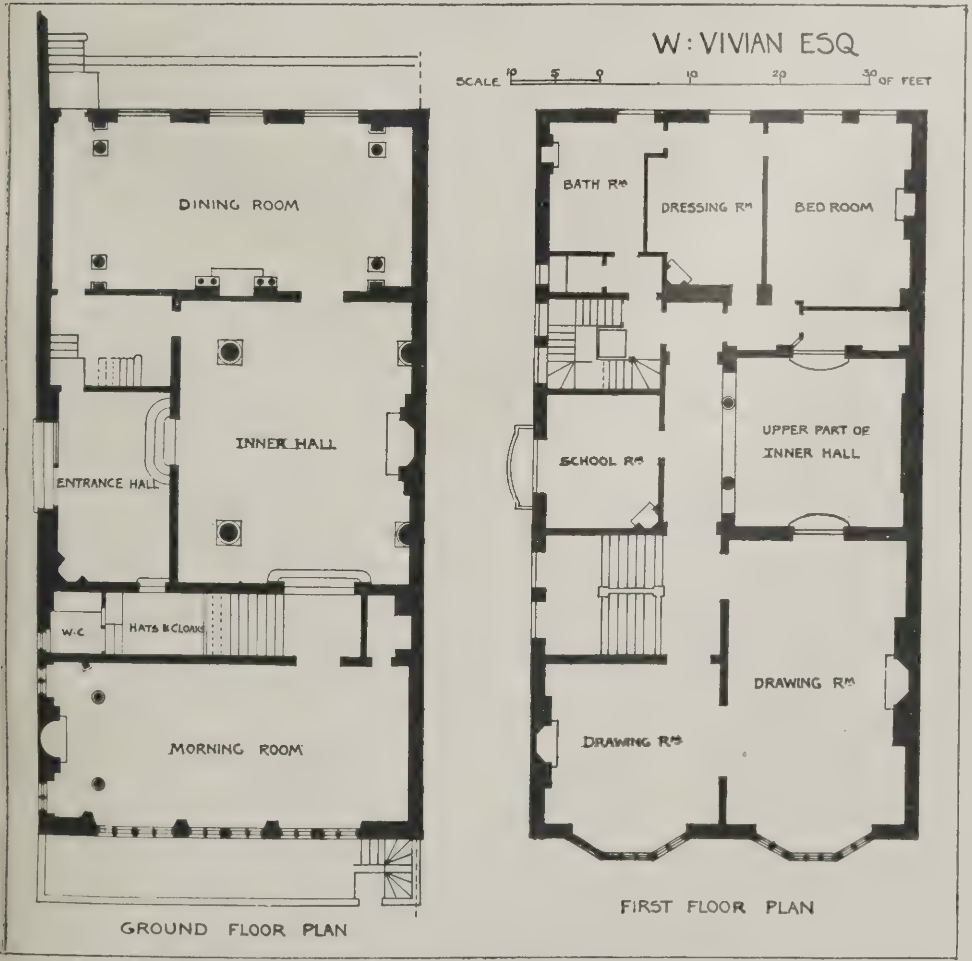
To attain this we need an extension of the training we give our students in our offices and our schools. The Board of Architectural Education, which has done so great a work during the last four or five years, is shortly to be reconstituted. Up till now it has dealt with architectural education on the basis of a four years' studentship, i.e., two years' preliminary work in the school, and two years' work as an articled pupil in an office with school training in the evenings. Very few men can do with only four years' training before practice, most of us by serving as improvers and assistants after pupilage have spent a good ten years in preliminary training.

However, the Board has not in its syllabus prescribed for the full training of architects. It says in that document "The Board desires to point out that its object is to lay a sound foundation on which the student can continue his training in later years. The Board cannot contemplate the complete equipment of an architect as possible in a four years' course. Its object is to start the student on those lines of study which will best enable him to attain to some proficiency in the art and practice of architecture."

The proposals of the Board are therefore incomplete. It makes no suggestion or provision for the training of the student after the four years. It is to be hoped this important matter will be considered, and some suggestion made in a future syllabus issued by the Board.

The Work of the Schools.

In a speech lately made by Sir Aston Webb at the opening meeting of the session at the Architectural Association in London, speaking warmly of the good work done by the schools of the Association, and of other schools in the country, such as that at Liverpool and in your own city, he said he hoped there would be in the future a closer connection between these schools of architecture which have been recognised by the Board of Architectural Education and the architectural school of the Royal Academy of Arts.



This house was also built in the 'eighties, and the same remark as to the planning of the "Inner Hall" applies here as in the case of Mr. White's house.

PLANS, HOUSE FOR MR. W. VIVIAN, QUEEN'S GATE, LONDON. R. NORMAN SHAW, R.A., ARCHITECT.

To my mind the suggestion is a most pregnant one; as it has always appeared to me that, given an extension of the admirable teaching already existing in the Royal Academy, which is the Senior Institution of Artists in this country, and full of artistic associations and of a fine tradition, we should have in it our University of the Fine Arts, our equivalent to the French Ecole des Beaux Arts, without which I do not think we are likely to progress satisfactorily.

I think our architectural schools generally ought to progress more on what I may call Ecole des Beaux-Arts lines. We want more opportunity for our senior students to practise as the French students constantly practise in design. "Projets" and "concours" are some of the chief means in France by which the young architect is trained. We want more of this here; without it, we may secure plenty of that "Commoditie" and "Firmnes" thought so necessary by Sir Henry Wotton, but we shall have but little "Delight."

There are some amongst us who, because all great architecture has been the result of experiment in building, hold the view that we should not trammel the "young idea" with definite instruction in the "orders," or in principles of proportion, but concentrate all our efforts on educating our youth in methods of building, and on so familiarising them with the nature of materials, and with their proper handling and use in accordance with that nature, that they should never be employed in a way unsuitable or unnatural to them. The question of design in each case is left largely to follow on the proper use of the materials employed. This view ignores any systematic training in design, which, in the face of the evidence we have, is a pity.

Experiment in Architecture

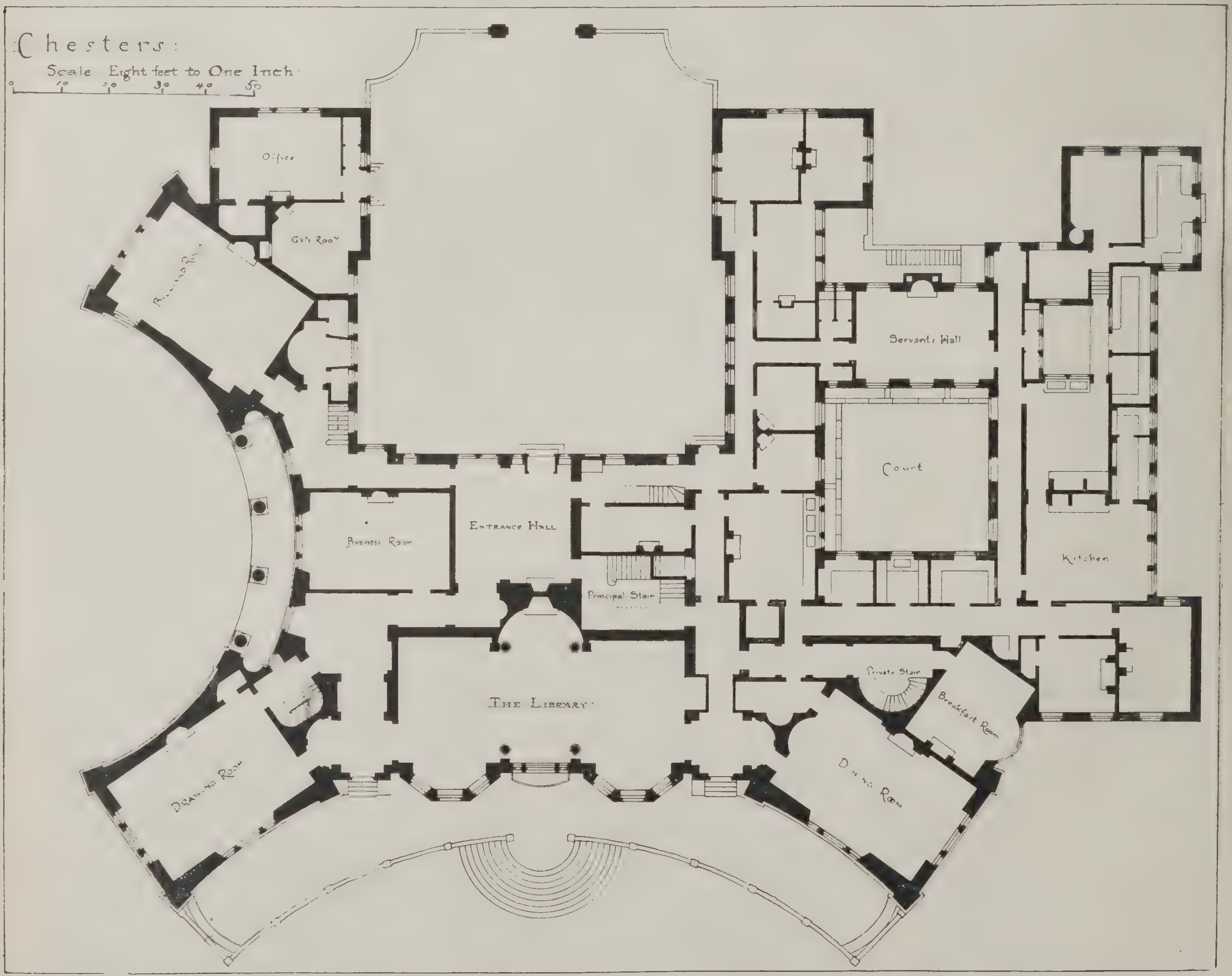
is but another word for the materialisation of ideas in building, and may be a manifestation of genius; on the other hand, it may be something very different, which might have been prevented by fuller training. A French architect has said: "The object of the French training is to render the student receptive, to make him fruitful in design, and imaginative. By making the training very general in character, it hopes to foster that gift with which all artists should be born, namely, the gift of having ideas." Surely, this is what all training ought to do!

We are sometimes told that the great difference between the architecture of the past and the architecture of the present is that the former was the work of people who were naturally all artists, whereas at present work is done by people who are not artistic; that, indeed, frequently the only person engaged upon a building who is an artist is the architect, and that more frequently than not he is not an artist at all.

Canons of Taste.

According to our canons of taste and judgment the artistic gift in the past varied in quantity very considerably. But the fact remains that at the present day we suffer, generally speaking, from living in an inartistic age; and the artists among us have consequently filled the role of prophets, and have had to fight in the execution of their work, for freedom to express their artistic convictions. But this condition of things is becoming better. Our writers and speakers on art have begged for the education of the public as well as for the education of artists, and a great deal is being done. But, as has been truly said, the best instructor of the public is the work of the artist.

[Our readers, we are sure, will share our indebtedness to Mr. Gerald C. Horsley, for the plans by Mr. Norman Shaw, which, by the courtesy of Mr. Horsley, we are enabled to show on pages 98, 99, and 100. The elevations of Mr. Norman Shaw's work are everywhere to be seen and studied and criticised; but his plans are less easy to come by. Yet they are at least equally worthy of attention; for it is not alone on his attractive and individual elevations that Mr. Norman Shaw became the most potently influential designer of modern domestic work. He is consummate master of the rarer art of convenient planning. In particular he seems to revel in the solution of the difficult problems. The more awkward his site, the greater his triumph in the plan evolved. Problems which would daunt and depress most men seem merely to have stimulated and inspired him; and his buildings derive perhaps most of their distinction from the fact that in every case that we can recall the elevation is as it were an organic development of the plan. It is safe to say that all Mr. Norman Shaw's success is based on his fidelity to this fundamental principle. Hence the plans we show are of unusual value and interest.—Ed.]



This, though apparently a complete plan, is an addition to an eighteenth-century small square house, and is quite one of Mr. Shaw's most stately and finest plans. This building was carried out in the 'nineties.

GROUND PLAN, CHESTERS, NORTHUMBERLAND. R. NORMAN SHAW, R.A., ARCHITECT.

SOCIETIES' REPORTS.

Guild of Architects' Assistants.

By kind permission of the architects, Messrs. Lanchester and Rickards, a visit to the Wesleyan Centenary Hall at Westminster took place on Saturday, July 9th, which was greatly appreciated by all who attended. Mr. E. C. Howell, the clerk of works, kindly conducted the party over the works, and gave much interesting and detailed information concerning the reinforced concrete and the general construction of the building. The stonework, its mouldings and carvings, were much admired. The probable omission of the fine towers on the main front, due to a question of light with the Westminster Hospital, was greatly deplored. The great hall, with its balconies and seating tiers in reinforced concrete and hollow brick, caused much interest on account of its novel and ingenious planning. An instructive visit to this fine addition to the monumental structures of modern London concluded with a hearty vote of thanks to Mr. E. C. Howell and Mr. Elliott, who represented Messrs. Dove Bros., the contractors. Mr. E. C. Howell, in reply, said he had always taken a great pleasure in explaining and giving information to all students of architecture, and that the pleasure his visitors had derived was equally shared by himself, and he would be glad to conduct a second visit at a later stage of the work.

Society of Architects.

By invitation of Messrs. Robt. Ingham Clark and Co., a party of members of the Society of Architects visited the works at West Ham on July 7th. The party assembled at Stratford, where they were met by Mr. Clark, and were driven to the works in brakes. Here they were joined by Mr. Wood, and the manager, Mr. Bamford, and were divided into two parties, in charge of the directors and manager, who took the greatest trouble to explain in detail the various processes. After the tour of inspection, the party were invited to take refreshments in a marquee, where Mr. Percy B. Tubbs, F.R.I.B.A., Vice-President, expressed to the directors the thanks of the members for a most interesting and profitable visit. The proceedings concluded with an inspection of the fine staircase and other interior work in the offices.

Society of Engineers.

On Tuesday, July 12th, a party of members of the Society and their friends, by kind permission of Mr. Maurice Fitzmaurice, C.M.G., M.Inst.C.E., Hon.F.S.E., inspected, under the guidance of Mr. J. E. Worth, District Engineer, the works now in progress in connection with the Northern Low Level Sewer No. 2. With the great increase in the population of London, it became clear that Sir Joseph Bazalgette's scheme of intercepting sewers would require extension, therefore the London County Council in 1899 decided to enlarge the main drainage system. The works of extension, which have been completed or are now being carried out under the direction of Mr. Maurice Fitzmaurice, C.M.G., M.Inst.C.E., the Chief Engineer to the Council, include on the north side of the Thames two new outfall sewers, each 9ft. by 9ft., which have been added to the existing lines (three) of outfall sewer, and are now in use; a new Middle Level sewer, No. 2, from Willesden to Old Ford, some 9 miles in length, which is also being used, and a sewer known as the Northern Low Level No. 2, which extends from Hammersmith to Bow, a distance of 12½ miles, parts of which are now under construction. This latter sewer between Hammersmith and Pembroke Gardens, Kensington, is constructed in brickwork, and commencing with a 5ft. barrel, increases in size to 6ft. 6in. diameter at this latter point, from which it is constructed in iron segments as far as Eastfield Street, Stepney. The diameter of the sewer in this section varies from 6ft. 6in. to 8ft. 6in. From Eastfield Street to the pumping station at Abbey Mills the construction is in brick and iron, the diameter increasing from 8ft. 9in. to 10ft. 6in. at the latter place, where the sewage will be lifted about 42ft. into the outfall sewers, along which it will flow to Barking Outfall Works. The depth of this sewer from the surface of the road varies from 20ft. to 70ft., and it lies chiefly in the blue London clay, although here and there water-bearing ballast is encountered. In these water-bearing sections it has been necessary to work with compressed air up to about 8lb. on the square inch. With respect to the construction of the portion of this sewer in iron, the segments are tapered on curves to the correct form, all the faces are machined, and liquid grout is employed under pressure to form a solid backing. The ironwork is lined throughout with 3 to 1 concrete, and the invert from springing to springing with 4½in. blue brick. The work is carried on night and day, and in twenty-four hours the tunnel advances by about eight rings, each ring amounting to 1ft. 9in. of distance. At the Pont Street shaft, where the visit was made, the whole of the work is being carried out under compressed air with a shield.

Builders' Benevolent Institution.

The sixty-third annual general meeting of the Builders' Benevolent Institution was held at 31 and 32, Bedford Street, Strand, W.C., when the president (Mr. Howell J. Williams, J.P., L.C.C.) presided.

In the sixty-third annual report, the Committee of Management deeply regrets the continued depression in the building trade generally, which is reflected in the diminution of contributions to the funds of the Institution. Every effort has been made to meet the emergency, but an additional sum of £500 worth of stock has had to be sold in order to meet the calls upon the Institution funds. Some modifications of pensions have been made in consequence of the introduction of State pensions. The Committee earnestly appeals for a continuance of the generous support upon which depends the entire or partial subsistence of the beneficiaries. The funds are administered with every necessary economy, and all needless expense is avoided. During the past twelve months, four additional pensions have been given, two being granted to the widows of deceased male pensioners. There are now on the list of pensioners thirty men and twenty-three women. One male and six female pensioners died during last year. The Committee thanks, most heartily, Mr. Howell J. Williams for his past valuable services as president and for his generous support; also the trustees (Mr. F. J. Dove, Sir Arthur C. Lucas, Bart., Mr. T. F. Rider, Mr. J. Howard Colls, Mr. T. Stirling and Mr. John T. Bolding, the hon. auditors (Mr. John T. Bolding and Mr. R. J. Ward, F.C.A.): and the dinner stewards. Mr. Wm. Willett has accepted the presidency for the coming year.

The audited accounts for the last twelve months were received and adopted, and the following elections were made: president, Mr. William Willett; treasurer, Mr. J. Howard Colls; hon. auditors, Mr. John T. Bolding and Mr. R. J. Ward, F.C.A. Committee of Management, Mr. J. T. Bolding, Mr. H. Northcroft, Mr. A. Ritchie, Mr. James F. Parker, and Mr. J. W. Chessum were re-elected; and Mr. Howell J. Williams, Mr. Edward Allen, Mr. A. H. Adamson, and Mr. Ben Carter were elected.

London Master Builders' Association: Annual Report.

A Council meeting of this association was held at 31 and 32, Bedford Street, Strand, W.C., at 3 p.m., on Thursday, July 14th, when the president (Mr. Leonard Horner) occupied the chair.

Reports from the Office Premises Committee and the Organisation Committee were received and considered, besides the report of a committee which met the President and Council of the Royal Institute of British Architects in conference.

Arrangements were made for the furnishing of the new offices in Kingsway, which will be entered in September, and new ordinary and associate members were elected.

Several trade matters of interest were discussed—*inter alia*, the Newport Dock strike, an application for a Working Rule Agreement from the Electrical Trade Union, overtime, provincial builders working in London, etc.—T. COSTIGAN, Secretary.

COMPETITIONS.

Police Buildings, Inverness.

For the proposed new police buildings in Inverness, the designs by Mr. R. J. Macbeth have been accepted. The cost of the work is estimated at £4,000.

Northwood Garden City Scheme.

With a view to securing the best possible plan for the proposed new garden city at Northwood and Ruislip, which is being promoted by Garden Estates, Ltd., they are instituting, in co-operation with the Provost and Fellows of King's College, Cambridge, the present owners of the land, a town-planning competition, in which the drawings will be arbitrated upon by Sir Aston Webb and Mr. Raymond Unwin. The plan of the successful competitor will be handed over to the company, and he will be invited to act as consulting architect.

Infectious Diseases Hospital, Dalkeith.

The design of Mr. A. Murray Hardie has been selected for the above building, which is estimated to cost about £4,000.

LIST OF COMPETITIONS OPEN.

AUG. 3. PEMBROKE (COUNTY DUBLIN). Tenders are invited by the Pembroke U.D. Council from competent persons for the execution of certain works in connection with the laying-out of Herbert Park, Ballsbridge, Pembroke, Co. Dublin. (J. C. Manly, Clerk to the Council, Town Hall, Ballsbridge, Pembroke, Co., Dublin.)

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglican Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. The competition will be confined to architects having an office or residing in the areas of the following education authorities: Cambridgeshire, Isle of Ely, Lowestoft, Norfolk, Norwich, East Suffolk. and Great Yarmouth. D. O. Holme, clerk of the Governors, Castle Chambers, Norwich.

SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—The U.D. Council of Kingstown offer premiums of £50 and £2 respectively for the two best designs for the above to be erected at Lower George's Street. Particulars from Mr. J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, together with a plan of site and sections at ground level, may be obtained from the engineer and surveyor, Mr. Samuel J. Harpur, Town Hall, Maesteg. Designs must be deposited at my office by noon on Monday next, September 19th. Two premiums are offered, namely, 25 guineas and 10 guineas, as first and second respectively.

NO DATE. ASHTON-ON-MERSEY. WESLEYAN SUNDAY SCHOOL. Limited to architects practising within ten miles of Sale. Inquiries to Mr. J. O. Barrow, Barker's Lane, Ashton-on-Mersey.

NEW BUILDINGS.

PROPOSED.

Airdrie.—At a recent meeting of Airdrie Town Council, the resolution passed a month ago in favour of proceeding with the erection of a Town Hall for the burgh was unanimously confirmed. A central site has been adopted in Stirling Street at a cost of £1,600. The scheme is for a Town Hall costing, inclusive of site, about £10,000.

Barnet.—The Urban District Council has approved the following plans:—Two semi-detached houses, Ashurst-road; additions to Alpha House; additions to first and sixth houses east side of Bramber Road; motor shed, first house east side of Bramber Road; additions to No. 8, Chandos Avenue; amended plan for portion of Hilton Avenue; alteration to houses, Sutton Road.

Batley.—The Corporation has approved the following plans:—New drying rooms at Healey Lane Mills; house in Byron Street; new streets at Carlton Estate, off Thorncliffe Road; warehouse and offices at Victoria Mills; ten houses in Healey Lane and Upper Croft Road.

Blackpool.—A Local Government Board inquiry has been held at the Blackpool Town Hall, into the Corporation's application for sanction to borrow £3,560 for private street works.

Brighouse.—Plans which have been prepared by Mr. A. E. Kirk, of Leeds, have been received for the erection of a new drill hall at Brighouse, which is to be erected in Wakefield Road, adjacent to the drill field. It is to be a single storey building, 60ft. by 30ft., and besides the large parade hall there will be several smaller rooms, while in the basement will be a rifle range running the whole length of the building.

Cardiff.—It has been decided to rebuild the Windsor Place Presbyterian church, Cardiff, on the exact lines of the fabric destroyed by fire in February last. A cheque for £9,300 has been received from the insurance company.

Derbyshire. — The Derbyshire County Council at a recent quarterly meeting considered plans for the proposed new county offices, which were ultimately approved.

Gillingham (Kent).—The Works Committee of the Gillingham Council has approved the following plans:—Alterations to 88, High Street; five houses, Barnsole Road; sixteen houses, Granville Road; house, Nelson Road; two villas, Barnsole Road; two houses, Shakespeare Road; alterations to Cleveland House; house, Gillingham Road; house, Gordon Road, off Twydale Lane, at Rainham Mark.

Goole.—It has been decided to carry out the scheme for the proposed alterations at Goole Workhouse, which will involve an expenditure of nearly £4,000.

Heaton Moor (Stockport).—Plans and estimates have now been prepared for the decoration and improvement of St. Paul's Church, Heaton Moor, the total cost of which will be about £600, including electricity installation and improved heating apparatus. A reredos has been designed by Mr. R. B. Preston, diocesan architect, and is to be of marble and alabaster, at a cost of £176. The scheme of decoration of the church has been postponed, pending the erection of the reredos. It is hoped to complete the whole of the work by the autumn.

King's Norton (Birmingham).—The King's Norton Urban Council has decided, on the recommendation of the Baths Committee, to build a set of baths at King's Heath, consisting of a large and a small swimming bath, slipper baths, and Russian baths, at a cost of £12,000. The site is in Institute Road.

Liverpool.—The Liverpool City Council has approved a recommendation of the Health Committee that steps be taken for the closing or partial closing of certain highways. The thoroughfare to be entirely stopped is Tobin Street, which extends between Copperas Hill and Brownlow Hill, and the one to be partially closed is Warren Street, running from Tobin Street to Hawke Street. The recommendation is the outcome of proposals which have been embodied in agreements between the Midland Railway Company and the Corporation with respect to Corporation property in the neighbourhood of the Adelphi Hotel, to enable the Midland Railway Company to proceed forthwith with their great scheme of hotel extension.

Liverpool. — The Mersey Docks and Harbour Board scheme for the construction of a new dock at Liverpool, to accommodate vessels of 1,000ft. in length, s approved. The Works Committee, which has had the scheme under consideration, recommended the construction of works estimated to cost £500,000. This recommendation was unanimously adopted. The scheme includes a dock about 1,020ft. long, an entrance 120ft. wide, and a sill laid at a level of 25ft. below the old dock sill and so constructed as to be available, when specially required, as a graving dock. The floor will be laid in concrete at a level of 29ft. below the old dock sill.

London, N.—The following plans have been approved by the Plans Committee of the Hornsey Borough Council:—Alterations and additions to No. 18 Turnpike Lane, North Harringay; conservatory at the rear of "Pinner Cottage," Colney Hatch Lane, Muswell Hill; nine dwelling-houses in Chestnut Avenue, Hornsey; conservatory at the rear of No. 3, Quernmore Road, Stroud Green; alterations in and additions to No. 57, North Hill, Highgate; thirteen domestic buildings, each containing two separate dwelling-houses, in St. James's Lane, Crouch End; alterations in and additions to All Saints' Church House, Highgate; motor garage in Dashwood Road at the rear of No. 67, Ferme Park Road, Stroud Green; dwelling-house in Woodside Avenue, Muswell Hill; schoolroom at the Baptist Church, Archway Road, Highgate; two dwelling-houses in Southwood Lawn Road, Highgate.

London, N.—Mr. T. Harold Gibbons, A.R.I.B.A., has prepared plans for the completion of St. Augustine's Church, Highgate, which will involve an estimated expenditure, including new vestries, of about £8,000. The present portion of the church was erected in the year 1896.

London, S.E.—The London County Council has passed the amended scheme for the building of the new bridge over the railway at Catford, and it is expected that an early start will be made on the structure.

Lostwithiel (Cornwall).—It was decided at a recent meeting of the Town Council to erect a new Town Hall and municipal buildings on the Grammar School site, and to let the present Guildhall.

Lowestoft.—The following plans have been approved by the Rural District Council:—Public-house, Corton Road, Pakefield; two cottages, London Road, Pakefield; house, Grand Avenue, Pakefield; three cottages, Gorleston Lane, Bradwell; dwelling house, Hall Lane, Oulton.

St. Germans (Cornwall).—At a recent meeting of the Town Council the Chairman was authorised to sign plans for a new Town Hall, to be built at St. Germans by Lord St. Germans. The architect is Mr. J. Sansom, of Liskeard, and the contractors are Messrs. Runnalls and Sons, also of Liskeard. The old Town Hall will be demolished, and the site will form part of the site of the new hall. The new building will include a large hall 51ft. by 21ft., and will accommodate 200 people; also a billiard room 18ft. by 24ft., a reading room 14ft. by 21ft., a lobby and retiring room. The building will be of stone and ornamental bricks, and will be heated by hot water.

Rhyl.—Designs have been prepared and a faculty has been obtained for the conversion of the south transept of St. Thomas's Church, Rhyl, into a side chapel. There are also to be built, apart from the church, but connected with it by a cloister, clergy and choir vestries. The proposed buildings have been designed by Mr. Oldrid Scott.

IN PROGRESS AND COMPLETED.

Beverley.—The new Baptist Church, situate in Lord Roberts Road, has been opened on completion, and was erected at an estimated cost of £4,000. The building is of Gothic design, Messrs. Potts and Foley, of Beverley, being the contractors, and Messrs. Garside and Pennington, of Pontefract and Castleford, the architects.

Birmingham.—The City Council have accepted the tender of Messrs. John Dallow and Sons, for the erection of the fire station in Moseley Road at a cost of £10,789, and the work will be proceeded with immediately.

Burton-on-Trent.—The new church of St. Chad, the gift of the late Lord Burton, has been consecrated by the Bishop of Lichfield. The church is of fourteenth-century Gothic architecture, and the general scheme of construction was the erection of a building of red Hollington stone, both inside and out, with carved English oak ceilings, floors, screens, and stalls. The nave is 84ft. long and 48ft. wide, the chancel 46ft. by 22ft., and the morning chapel 56ft. by 15ft. The main entrance is beneath the tower, the nave aisles being of Hopton wood and Portland stone. The total cost of the building, which will seat 700 persons, is between £50,000 and £60,000, and the erection of the superstructure has been in progress some three years. The architects were the late Mr. G. F. Bodley, R.A., and Mr. Cecil G. Hare, the building contractors being Messrs. Willcock and Co., Wolverhampton. The carved woodwork was executed by Messrs. Rattee and Kett, Cambridge, and the carved stonework by Messrs. R. Bridgeman and Co., Lichfield.

Caversham (Reading).—The foundation-stone has been laid of the new church at Caversham, situate on a site at the junction of Harrogate and Albert Roads. The church will consist of chancel, vestries, nave, north and south aisles, and will provide accommodation for about 300, and it has been so proportioned that it can be extended to the west to accommodate another 200. Space has also been left on the south aisle of the chancel for a Lady Chapel. The general design is Perpendicular Gothic. The exterior is to be faced with Bargate stone built in random rubble with Bath stone dressings, the roofs being covered with Westmorland green slates laid in diminishing courses. The interior will have Bath stone arcading and dressings, the remainder of the walls being plastered and finished with a rough surface. The nave arcade, which will consist of octagonal columns with four centred moulded arches, will be carried up to form a clerestorey, and will be finished with a low-pitched ceiling, with roof trusses. Mr. James Haslam, M.S.A., and Mr. Ernest Ravenscroft are the joint architects, and the builders are Messrs. Wheeler Bros., of Caversham Road. It is estimated that the cost of erecting the church will be £5,000.

Lavenham.—For the past twelve months the parish church of St. Peter and St. Paul has been undergoing restoration and repair, under the supervision of Mr. W. D. Caröe, F.R.I.B.A., at a cost of £2,250. The work of restoration has included general repairs to the tower, the relaying and renewing, where necessary, of the lead in the roof, repairs to the carved Oxford parclose, the installation of a heating system, and the erection of a new choir vestry. The heating apparatus was installed by Messrs. Wippell, Bros., and Row, of Exeter, and the other work had been carried out by Messrs. Collins and Godfrey, of Tewkesbury. Extra expense had, however, to be unexpectedly incurred, owing to the discovery of dry-rot in the flooring of the church, and this necessitated, to prevent the dry-rot spreading to other and more important parts of the building, the reflooring of the entire building, at a cost of a further £150.

Lenzie.—The new Academy erected jointly by the School Boards of Kirkintilloch and Cadder at Lenzie, at a cost of about £6,500, has been opened by Dr. Andrew, Chief Inspector of Schools. Only the north wing of the old building has been retained, the rest of the structure being new. The Academy faces Kirkintilloch Road and Fern Avenue, and in it ample provision has been made in accommodation and equipment for an elementary school, higher grade department, and junior student training centre, recognition as such having just been granted by the Department. Mr. Baird, of Glasgow, is the architect.

Liverpool.—A beginning has been made with the building of the Lathom Memorial Chapter House of Liverpool Cathedral, which is to be erected by the West Lancashire Province of Freemasons in memory of the first Earl of Lathom, Grand Master of the Province. The estimated cost is £10,000.

London, N.W.—The foundation-stone of the new Presbyterian Church now in course of erection at Golders Green, has been laid by Lady Shaw, of Dunfermline. The design of the church is in the Perpendicular Gothic style, and provides accommodation for nearly 600 persons, but the two transepts, organ chamber, and various lecture halls, are not included in the portion now building, which consists of the nave, chancel, entrance porches, vestry, and heating chamber. The nave and chancel will be 88ft. long by 38ft. wide between piers. The walls both externally and internally will be faced with the best Suffolk red bricks, with Monks Park stone dressings to the windows and arches of the arcades. The roof will be of steel with a plaster vault, panelled with moulded ribs, and covered externally with sand-faced red tiles. Messrs. Fryer and Co., of Paddington, are the contractors, Mr. T. P. Figgis, F.R.I.B.A., being the architect.

London, S.W.—The new Westminster disinfecting station, which was erected by the City Council at a cost of £9,921, has been opened by the Mayoress of Westminster, and is situated at Grosvenor Canal, close to Chelsea Bridge. Mr. J. Murray, F.R.I.B.A., was the architect, the contractor being Mr. C. F. Kearley, of Great Marlborough Street, W.

London, W.—The foundation-stone of the Ealing Hospital, which is in course of erection in the centre of the district, at a cost of £25,000, was laid by Lord Rothschild on Wednesday, July 6th, 1910. The architects are Messrs. Hall-Jones and Cummings, Parliament Mansions, Victoria Street, S.W. Messrs. Dolby and Williamson, of 8, Princes Street, Westminster, are the consulting engineers for the engineering works. The contract for the heating and hot-water service has been entrusted to Messrs. R. H. and J. Pearson, Ltd., of 145, High Street, Notting Hill Gate, W., and the work is now well in hand. The heating is being carried out by hot water with reinforced circulation, and the hard water supply from the mains will be softened before use.

London E.—Sir George Reid, the High Commissioner for the Australian Commonwealth, has laid the foundation-stone of a new hospital at Dr. Barnardo's Village Homes for Girls at Barkingside, which is in course of erection at a cost of £18,000.

London, E.C.—The first portion of the Embankment tramway shelter is now in position. When complete the cover will be 180ft. long, and will consist of a central portion of 80ft. in length, with a covered queue 50ft. long at each end to regulate the access of the public to the cars. The queue at either end of the refuge will have four divisions, the two queues together providing for eight different car services. This arrangement will provide a length of 180ft. under cover, and will enable three cars to take up passengers opposite the shelter at the same time. The total cost will, it is estimated, be £1,200. The part of the shelter now erected only extends for a distance of 20ft. It is designed as an experiment, and upon its success or failure depends the completion of the work.

London, S.E.—Steady progress is being made in the erection of the new King's College Hospital buildings at Camberwell. The out-patient, casualty, and bathing departments have been finished, except for the interior work now in hand, and the administration block has reached the ground-floor level. Three contracts, therefore, have nearly been fulfilled. The first was for the sum of £65,658, in respect of the out-patient and casualty sections; the second, for the sum of £10,301, was signed for digging the foundations of the whole of the administration block, the chapel, and the central heating station; the third, for the sum of £14,540, was for the work now being effected on the adminstration block. Building operations were started in March, 1908, and it is hoped the new hospital will be ready for completion in about three years from now. Two wards at the rear of the administration block will next be undertaken, and the chief sections then remaining to be dealt with will be seven medical and surgical wards, two special wards, the isolation block, the medical school and pathological department, and the mortuary. Of the £300,000 appealed for to carry out the scheme of removing this hospital from Portugal Street to South London £65,000 is still required.

London, W.C.—The plans for the Palace of French Industries in Aldwych and the Strand have at length been passed by the L.C.C., practically as submitted, and the building work is to be begun next October. It is hoped the palace will be completed early in 1913. The building will cost £800,000 to erect, and its style will be French Renaissance. The palace and the outer buildings connected with the general scheme will occupy 3¼ acres; the main front in Aldwych, with a central dome—will be 450ft. long; on the Strand side it will be 430ft. long; and the average depth will be 300ft. Just under the dome there will be a tympanum, with a bas relief, symbolising the entente cordiale, and showing the historic meeting between King Edward VII. and President Loubet. The palace itself will consist of a central hall, to be used as a permanent exhibition of French arts and industries. This hall will also be used for conferences, banquets, and other public gatherings. The palace building will include, on the west side, a bijou theatre, to seat 800, while on the east side will be a cafe restaurant, to which will be attached a winter garden. Gardens will surround the central building, and in the gardens a patisserie, tea rooms, and open-air café after the Parisian style are to be established. These gardens will separate the palace buildings from the outer structure, in which there will be 800 suites of offices, and all the ground floor will be divided into a hundred shops.

London, N.W.—The Bishop of London has consecrated the new church of St. Michael, Cricklewood, which is in the Decorated Gothic style, and has seating accommodation for 750 persons. It is built of stone, and it is intended to erect a tower and spire rising to a height of 160ft., on the north-west corner of the nave. The total cost is estimated at £11,000.

London, S.W.—The directors of the Anglo-American Oil Co., Ltd., have secured a site at the Corner of Birdcage Walk and Queen Anne's Gate, for their new offices. The building, which is now on a fair way towards completion, is in the style of the English Renaissance, and is eight storeys high in all. The total number of offices and rooms, many of which are extremely large, is well over one hundred. Mr. Ernest Runtz is the architect, Messrs. Holloway Bros., Ltd., are the principal contractors, Messrs. Redpath, Brown, and Co., are carrying out the constructional steelwork, and Messrs. Dent and Hellyer are supplying the sanitary fittings.

Lynton. — The new Wesleyan Church, situate on a site adjoining the Town Hall, has been opened on completion, and was erected at a total cost of £3,300. The church which will seat 300, is of local stone, dressed with Bath stone, the style of architecture being Late Gothic, with traceried windows and an open timbered roof. Messrs. La Trobe and Weston, Bristol, were the architects, and Messrs. Bovey and Sons, Torquay, the contractors.

Lythe.—The work in connection with the restoration of St. Oswald's, the Parish Church at Lythe, is now in progress, and the structure is completely in the hands of the contractors, Messrs. Rudd and Son, Limited, of Grantham, whose contract price is £7,300. The work comprises the pulling down of the well facing the road, and the wall at the west end. The tower, which is situated at the west end of the building, is to be taken down and rebuilt, and a new south aisle is also to be provided. Mr. Walter J. Tapper, London, is the architect.

Mumbles (Glam.) — The new Baptist Church, erected at a cost of £2,000 from the designs of Mr. H. A. Ellis, M.S.A., has been opened Messrs. J. and D. Jones, of Swansea, being the contractors.

Newcastle.—The foundation-stone has been laid of new parochial buildings in connection with St. Mark's, Byker, which are to take the place of the old buildings adjoining the church on Byker Hill. Mr. A. B. Plummer, F.R.I.B.A., architect and diocesan surveyor, has designed the buildings.

Newport.—The new Technical Institute, situate within a short distance of Newport Bridge, is approaching completion, and will probably be opened in September next. The buildings were designed by Mr. Chas. F. Ward, A.R.I.B.A., Newport borough architect, and are being erected by Mr. W. E. Blake, Plymouth, at a cost of £36,130.

Pencader (Carmarthen).—The new chapel which was recently opened, accommodates 450 people, and cost £1,500 inclusive of the site. The building is in the Gothic style of architecture, and was erected by Mr. John Evans, contractor, Llanybyther, from the designs of Mr. A. I. Jones, architect, Carmarthen. It is of local stone, with Bath stone dressings

Pontefract.—The new High School for Girls, which is in course of erection at an estimated cost of £11,000, will provide accommodation for 200 pupils, and the foundation-stones were recently laid. Messrs. Tennant and Collins, Pontefract, are the architects, and the contractors Messrs. Stephen and Thos. Kelsey, Goole.

Ribbleton (Preston).—St. Mary Magdalene's Church Sunday School is in course of erection at a cost of £1,000, Mr. H. D. Hartley being the architect. The contractors are:—Messrs. Croft and Sons, builders; Mr. R. N. Hall, joiner; Messrs. W. Cook and Son, plasterers; and Mr. R. Hodgson, plumber.

Sheffield.—The new Post Office situate in Fitzalan Square has been completed, after three and a half years' work, and is built in the Renaissance style, of stone from the Stancliffe quarries, Darley Dale. Mr. Walter Pott, of H.M. Office of Works, designed the building, which has been erected under the superintendence of Mr. W. T. Bowman. Apart from the cost of the site, the building and furnishing involved an expenditure of £60,000, and the electrical equipment has cost an additional £10,000.

Sunderland.—Lord Barnard has laid the foundation-stone of the new St. Gabriel's Parish Church, which is in course of erection from the designs of Mr. C. A. Clayton Greene. The church is being built in four sections. The first section to be erected consists of chancel and schoolroom to hold 300 underneath the chancel, vestries, transepts—including a morning chapel—two-thirds of the nave with a temporary brick gable at the west end of the church, to hold 650 people, together with seating accommodation, at a cost of £9,800. The completion of the nave and the provision of seating room for 850 people, which constitutes the second section, will entail a cost of £1,600. The third and fourth sections comprise the addition of the narthex and cloakrooms, which will mean a further expenditure of £780, and the erection of the tower to cost about £900. The total cost of the scheme is about £13,000. Mr. W. D. Allison, contractor, Whitburn, is carrying out the present portion of the scheme.

Walton-on-Thames. — The new pumping station of the Metropolitan Water Board at Walton-on-Thames, a short distance below Sunbury Lock, the construction of which was started about two years ago, is now practically completed, and it is expected that it will be in running order at the beginning of September. The station is erected on a site in the Hurst Road, with a frontage of 230ft., and a depth to the river of about 1,800ft. The main building, which has been constructed of red brick and Portland stone, measures 120ft. by 22oft., and comprises engine house, boiler house, and fitting shop. It is 30ft. high to the eaves, and is surmounted by a three-span roof, one span being over the engine house, and two over the boiler house and coal bunkers. The scheme has been executed to designs prepared by Mr. J. W. Restler, the deputy engineer-in-chief to the Metropolitan Water Board, and has involved a total cost of about £140,000. The Thames Ironworks Shipbuilding and Engineering Company (Limited) were the main contractors for the machinery, boilers, etc., and supplied the steam engines from their Greenwich works. The building, chimney, and culvert were constructed by Messrs. Dick, Kerr, and Co. (Limited), the intake and sluices were built by Messrs. John Aird and Sons, the boilers, coaling crane, etc., were provided by Messrs. Babcock and Wilcox, the ropeway by Ropeways (Limited), and the hydraulic turbines by Messrs. Gilbert Gilkes and Co. (Limited).

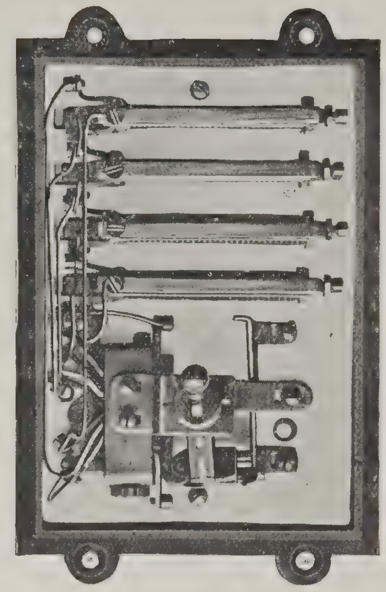
Yaxley (Hunts).—The Bishop of Peterborough has reopened Yaxley Parish Church, Hunts. which has been restored at a cost of nearly £8,000, under the supervision of Mr. Temple Moore, F.R.I.B.A. The restoration included the underpinning of the foundations, the re-roofing of chancel and nave, the repair of tower and spire, and the reglazing of the windows throughout.

Ynyshir (Glam.).—The Moriah Chapel, Ynyshir, which was recently opened is built of local stone with grey Forest of Dean stone dressings, at a cost of £4,000, and is situate on the main road at Ynyshir. It is elevated and set back from the roadway and provides seating accommodation for 750, with a vestry providing seating accommodation for 320. The architect was Mr. R. S. Griffiths, M.S.A., of Tonypandy, and the builder, Mr. David Richards, of Ynyshir.

TRADE AND CRAFT.

A Current-Controlling Switch.

Regulation of the supply of electric current so that it can be as completely under control as that of gas has been for years past a baffling problem, which, however, has now been solved, a switch performing the controlling and current-saving function having been patented, and being now on the market. The Watkin switch, as the instrument is called (it is manufactured by the Adams Watkin Co., Ltd., 36, Victoria Street, London, S.W.), economises electric current used for any purpose, according to the amount of energy required. No less than seven variations in the current-saving capacity of this switch can be obtained; and further variations of energy can be had if specified. Any number of electric lights can be regulated by means of one switch, in precisely the same way that gas is controlled. Electric fans, irons, radiators, cooking utensils, surgical appliances, motors, etc., all are capable of this reduction of current consumption and consequent decrease in the cost of power supply. A Faraday House report upon the switch by the Electrical Standardising and Testing Institution, states that "The switch was connected in series with a bank of lamps on a 210-volt direct-current circuit, the current taken by the lamps being 0.62 ampere. The total watts absorbed by the circuit with the switch on each of the seven stops were measured, and the following table gives the results :—



THE WATKIN SWITCH.

Stop.	Tot. Watts.	Stop.	Tot. Watts
1 ...	27.3	5 ...	92.4
2 ...	40.9	6 ...	114.4
3 ...	60.9	7 ...	130.2
4 ...	77.6		

"An alternating pressure of 1,000 volts was applied between the switch and the frame. This was maintained for 15 minutes without the insulation breaking down."

Carbon filament lamps were used in this test, and the firm claims that the results to be obtained from metallic filament lamps are even more satisfactory. This latter type of lamp has considerably reduced the cost of light; but lamps of a low candle power cannot be made for high voltage. The Watkin switch should prove invaluable as an economiser of current. The full power of a lamp is frequently required for but short periods, and it is impossible to restrict its consumption of current when a more subdued light is desired. It is in this respect, therefore, that the switch will perform admirable service, and effect a saving in current of from 12½ to 80 per cent. The use of the switch considerably prolongs the life of electric lamps. The accompanying illustration shows the switch-box with its construction revealed.

Messrs. Smith, Major, and Stevens, Ltd.

We are informed that Messrs. Smith, Major, and Stevens, Ltd., owing to the rapid increase in their business as lift manufacturers, have for some time past found their Battersea premises very inadequate for their growing needs, and have been compelled to provide new works, which are now in course of erection at Northampton. A spacious plot of land has been secured, affording ample opportunity for farther expansion, and it is intended that the new premises shall embody not only the most modern manufacturing improvements, but shall provide also for the greater comfort and health of the workmen and staff. It is hoped that all will be ready for occupation in the autumn. A portion of the staff and a considerable number of workmen will be retained in London in the interests of the extensive connection possessed by the company in the metropolitan district, where they and their predecessors have been established for 140 years.

Builders' Bookkeeping Standardised.

There is probably no class of business in which constant watchfulness over and close touch with all the details of profit and loss are more imperatively necessary than in that of the builder, who, however, as a rule, has, to his own considerable loss and inconvenience, refrained from availing himself to the full of modern business methods. There can be no doubt that a well-devised standardised system of bookkeeping would be of great advantage to the entire trade. We understand that the Builders' Office Organisation Co., of 15, Seething Lane, E.C., have devised and perfected a scheme which affords the builder an easy and expeditious means of setting his counting-house in order. The system has been exhibited and explained to us by its originator, and it appears to be quite simple and practical, securing clearness and certitude by dispensing with a great deal of clerical work that, in the light of this system, seems to be not only unnecessary, but confusing. The company provide a full working and detailed prospectus, which shows very simply and clearly exactly how entries should be made, so as to show how the business stands at any given moment with regard to labour, expenses, day-work, extras, omissions, merchantages, etc. The company not only supply the materials for carrying out the system, but, for an inclusive fee, give all the help that the subscriber may require in order to become fully competent in its use. Some of the points of value claimed for the standard system are: All totals of Dr. and Cr. are brought to a bulk sum at the end of any financial year without continually having to transfer from one book to another for summary, simplicity, effectiveness, and economy, there being only one posting from the setting-out book; the saving of twenty-five per cent. of clerical labour; several books necessary under other methods are dispensed with, the detail prospectus setting out the key to every item of outlay and income, so that at a glance every penny can be accounted for with the utmost accuracy, the clerk having no fewer than three direct checks in the working of the setting-out key; from this setting-out key there is but one posting first and last, and each week's posting goes to form a part of the grand total required for any financial year-ending. We are informed that the system has been examined by a builder of high standing in the Federation, and approved for adoption in his very extensive business. This gentleman writes: "If your system of bookkeeping were in general use, a very large proportion of builders would find it of immense value to them, both financially and otherwise. For smaller concerns we think it admirable, giving results that everyone ought to keep before him."

COMING EVENTS.

Wednesday, July 27.

Institution of Mechanical Engineers.—Summer meeting at Birmingham continues till Friday, July 29. London meeting at Institution of Civil Engineers, July 29th, 10 a.m.

Manchester Society of Architects.—Visit to the Oaks, Fallowfield. (Messrs. T. Worthington and Son, architects) 5.30 p.m.

Cambridge University Local Lectures.—Summer meeting at York. Revd. W. Marshall on "English Ecclesiastical Architecture. First lecture. 10.30 a.m. Dr. Hodgkin on "The Roman Wall from Tyne to Solway." 12. The Provost of King's College on "Stained Glass." 8.30 p.m.

Royal Sanitary Institute and Parkes Museum.—British Medical Association meeting visit to the New Premises of the Institute, 90, Buckingham Palace Road, S.W. 3-6 p.m.

Thursday, July 28.

Cambridge University Local Lectures.—Summer meeting at York. Revd. W. Marshall on "English Ecclesiastical Architecture." Second lecture. 10.30 a.m.

Friday, July 29.

Cambridge University Local Lectures.—Summer meeting at York. Revd. W. Marshall, on "English Ecclesiastical Architecture." Third lecture. 10.30 a.m.

Junior Institution of Engineers.—Visit to the New Pumping Station of London Hydraulic Power Company, Grosvenor Road, S.W. 6.30 p.m.

Saturday, July 30.

Cambridge University Local Lectures.—Summer meeting at York. Revd. W. Marshall, on "English Ecclesiastical Architecture. Fourth lecture. 10.30 a.m.

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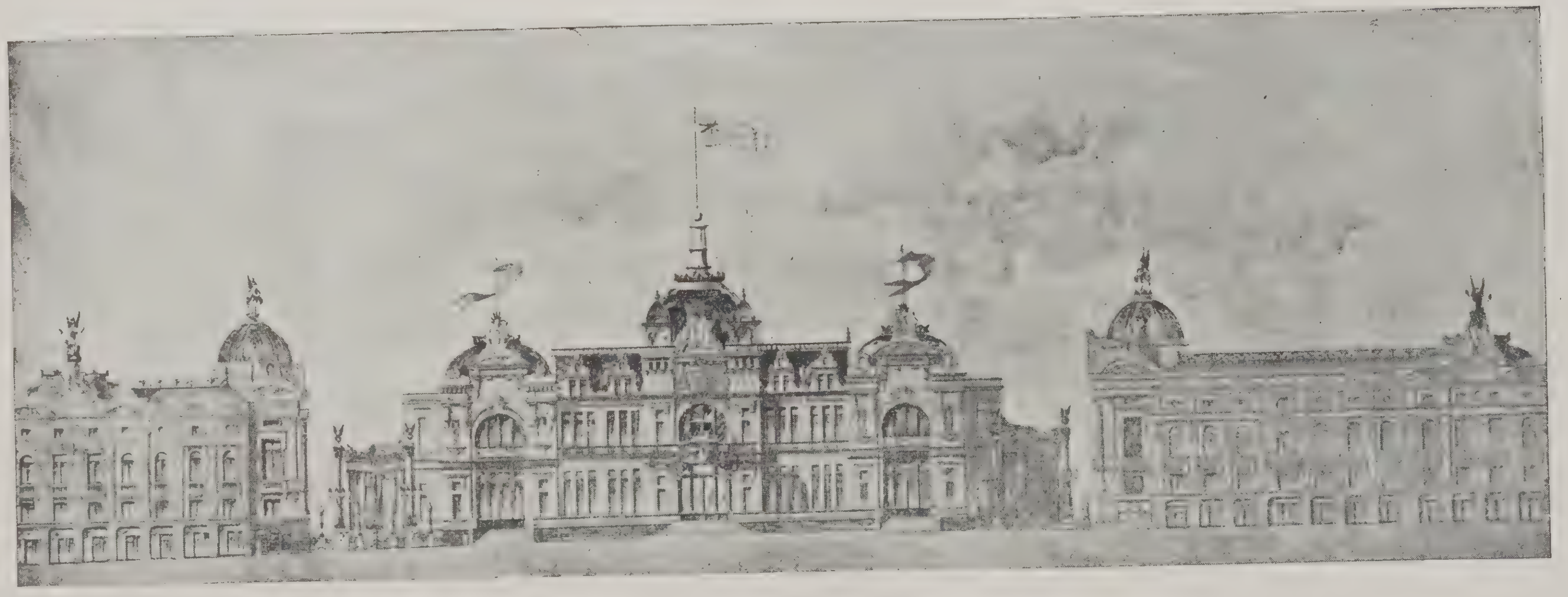
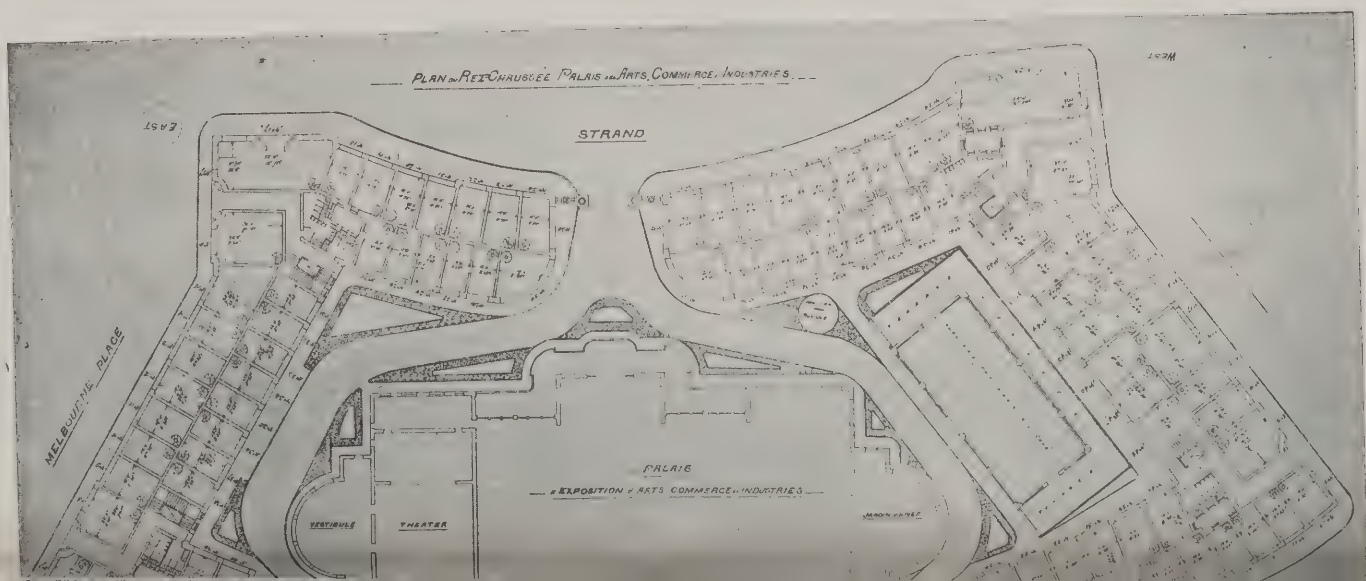
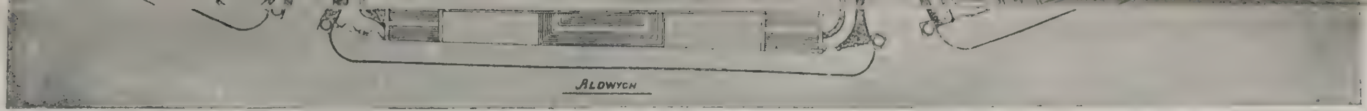
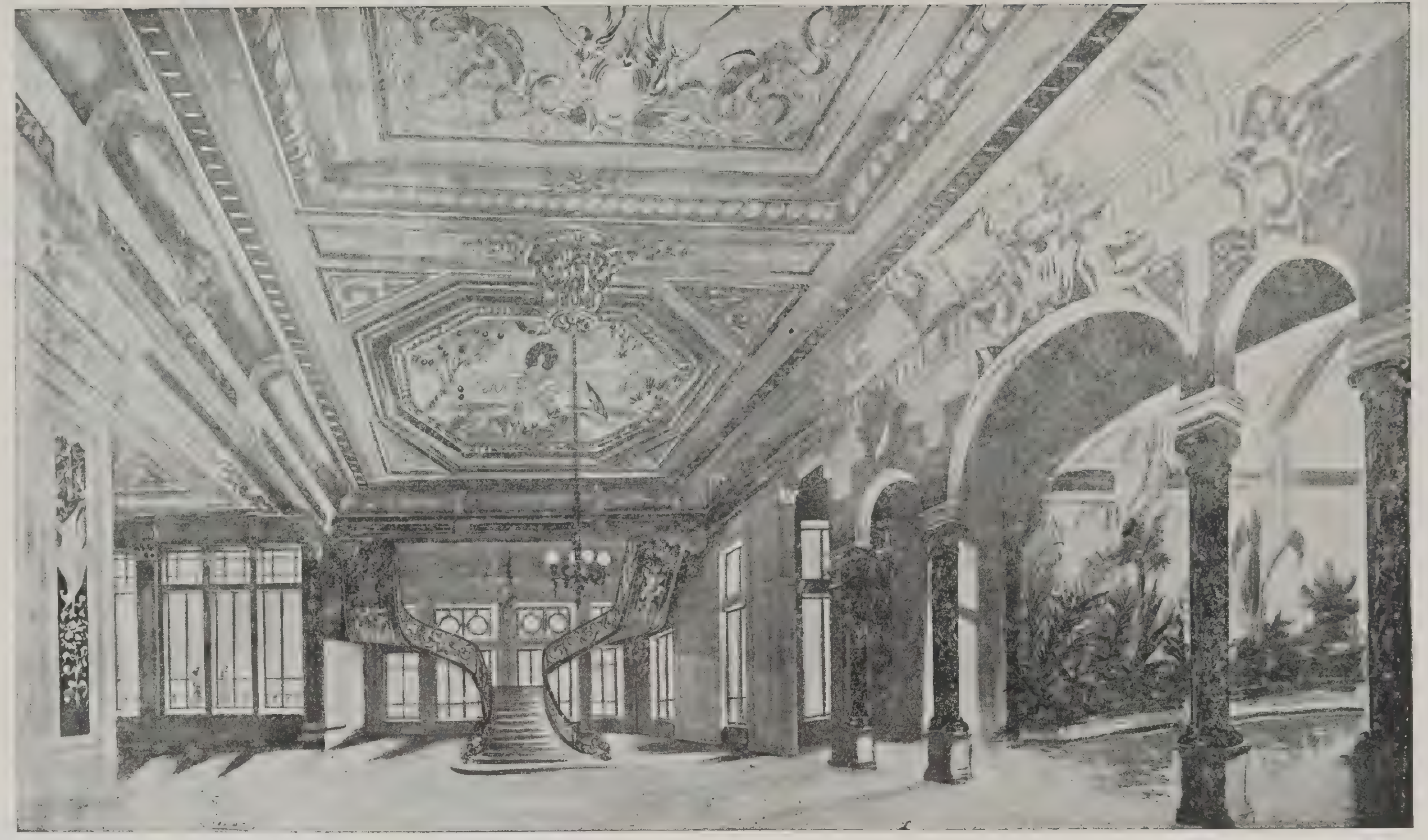


ELEVATION TO ALDWYCH.


PLAN DU REZ-CHAUSSÉE PALAIS DES ARTS, COMMERCE, INDUSTRIES.
STRAND
EAST
WEST
MELBOURNE PLACE
PALAIS
D'EXPOSITION D'ARTS COMMERCE ET INDUSTRIES
VESTIBULE
THEATER
JARDIN D'HIVER



GROUND PLAN.



A VIEW IN THE PRINCIPAL HALL.

THE PALACE OF FRENCH ARTS AND INDUSTRIES. TO BE ERECTED ON THE ALDWYCH-STRAND SITE, LONDON.

ERNEST GÉRARD, ARCHITECT.

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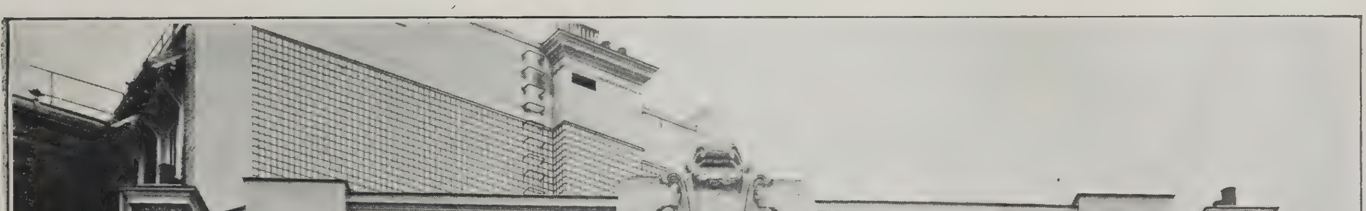
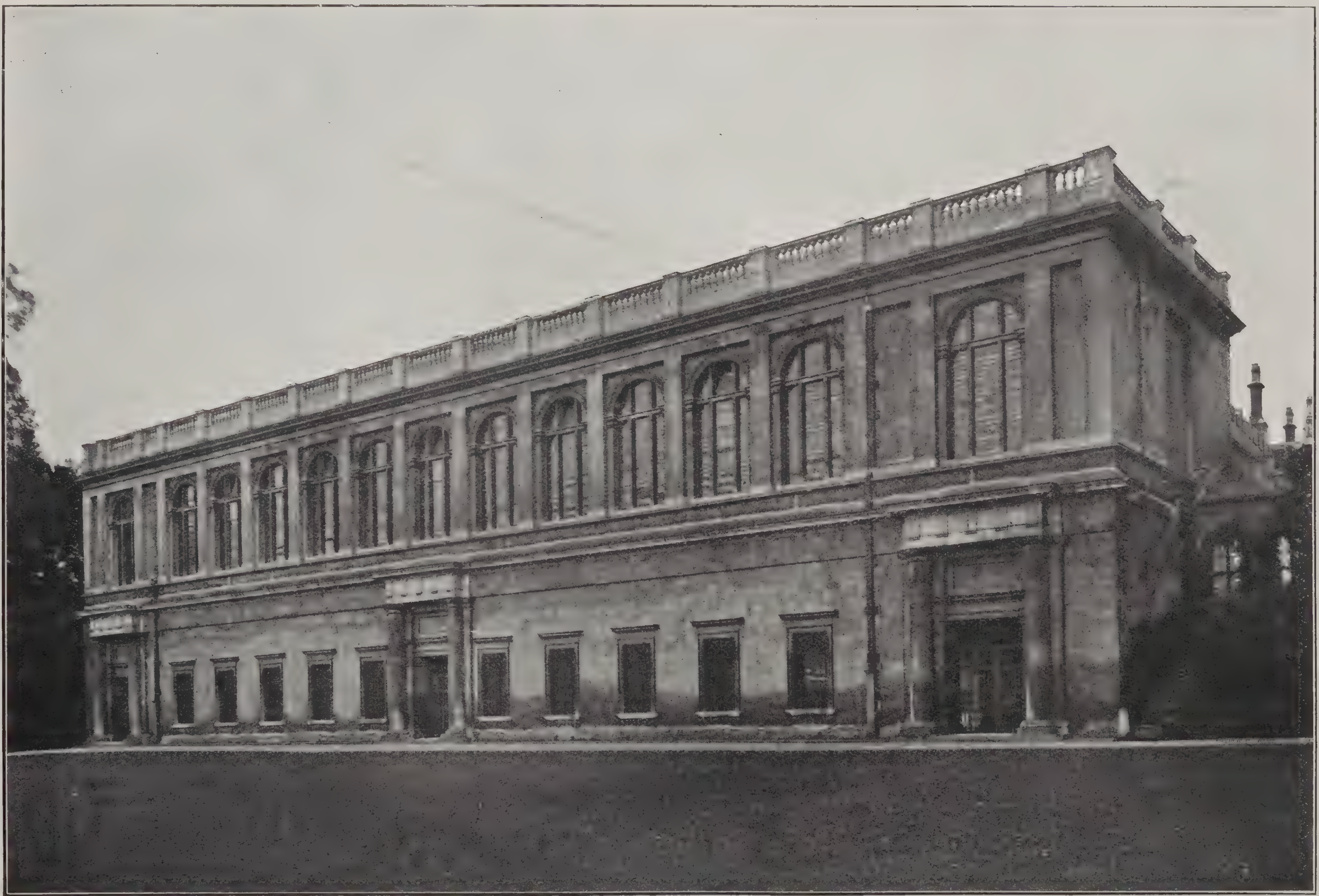


Readers who have seen illustrations in our pages of the work of Messrs. Mewès and Davis, architects of the Ritz Hotel, "Morning Post" Office, Royal Automobile Club, and other prominent London buildings, will be interested in this view of a refined and scholarly piece of work at the house of the famous French actor in Paris.

DETAIL OF THE RESIDENCE OF M. LUCIEN GUITRY, PARIS. CHARLES F. MEWÈS, ARCHITECT.



This is quite an early work of Sir Christopher Wren, and is much superior in the logical qualities of design to the more showy front of Nevile's Court. The exterior here exactly expresses the interior, with the low loggia beneath, the blank space for bookcases, and the great row of windows over the bookcases. The library is built of Ketton stone, which is yellow, with stains of pink, but the crowning balustrade and the entablature to the ground-floor doorways are, for some reason, which it is not easy to perceive, in Portland stone. A view and detail of the wrought-iron gates by Partridge appear on pages 118 and 119.

THE RIVER FRONT OF TRINITY COLLEGE LIBRARY, CAMBRIDGE. SIR CHRISTOPHER WREN, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 3rd, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 809.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Hints on the Planning of Town Halls.

THE erection of a new town hall is usually considered an opportunity for adding to the architectural beauty and dignity of a city; an end which should always be kept in mind, but which is sometimes too exclusively prominent in the consideration both of the architects and of the townspeople. When there is an exhibition of competitive designs for a town hall, it will generally be found that the spectators who are natives of the town are most attracted by the designs which have the largest towers or domes and the most ornate architectural treatment. Such designs are very often not even the best in architectural appearance; but supposing that they are, there remains the important question whether the building is planned in the manner most convenient for the carrying on of the city business. That is a question which the town councillor or ratepaying spectator seldom puts, because he often cannot realise the practical effect of a plan from the drawing, and it is only after the architecturally effective building has been erected and brought into use that those who use it may discover that they have committee-rooms very inconveniently placed, or a council chamber in which their speeches can only be indistinctly heard.

The departments of a town hall may be classed as (1) those which are for the private conduct of municipal business only; (2) those business departments with which the outside public are concerned; and (3) those which have more or less of a show character, as rooms for public receptions or entertainments.

The first class consists mainly, of course, of the council chamber and the committee rooms, and for all these one great desideratum is quiet. Different sites present different problems, but in almost all cases it will be found that the best place for the council chamber is in the middle of the building. Being necessarily a large and somewhat lofty room, it can be lighted from the top, unless there are lighting courts or areas provided; and in a central position it is both away from noise and may be equally within reach of all the offices with which it may be necessary for the council from time to time to communicate. For the committee rooms quiet is perhaps even more essential than for the council chamber, as they must have side windows; and nothing is more exasperating than to conduct business conversation against the continual noise of traffic outside. If the committee rooms cannot be kept in an inner position, which might be difficult, they must, at all events, face the least noisy side of the site. In regard to the plan of the council chamber itself, there is rather a tendency at present to favour a semicircular plan; there seems a certain practical symmetry in the arrangement of seats so that every member of the council faces the chair, and the distance from the chair is more nearly equalised than in a parallelogram room. But a semicircular room is nearly always bad for speaking in; it promotes echo. Perhaps the best arrangement is a room in which the chairman sits in the centre of one of the longer sides, and the seats are arranged in a segment of a circle, the back wall following the same line. Whether straight or curved, the back wall should be broken on plan, by pilasters or otherwise, to prevent it causing return echoes. A council chamber lighted from the roof or from windows in central areas will always require artificial mechanical ventilation.

The town clerk's public office is one of the most important points in the plan, because it is the principal medium of relation between the outside public and the municipal authorities. It is to that office that the public come to bring communications, or to obtain information. Probably in nineteen out of twenty town halls in this country a stranger to the building, wanting the town clerk's office, has to ask where it is, and will perhaps be sent upstairs, or told it is the third door round the corner of the next corridor. He ought to have no occasion to ask; the town clerk's public office ought to be the first thing he sees on entering the principal public entrance; so far from having to ask his way to it, it ought to be impossible for him to miss it. In how many town halls is this the case? As to the position of the town clerk's private office, that, as we shall see, is a little complicated by other considerations.

The place for the show suite of rooms for receptions should always be the front to the principal street or square adjoining the site; quiet is not so essential here, and the large windows and more sumptuous architectural treatment proper to these rooms are a means of giving external dignity to the principal façade. The mayor's private room should be *en suite* with the entertaining rooms, or at least be connected with one of them by a private lobby. These rooms must, of course, be on the first floor of the building. Now comes one of the little difficulties of arrangement. The town clerk's public office, as we said, must be in a central and conspicuous position on the ground floor. The town clerk must have ready communication with his subordinates, but he must also have easy access to the mayor. The dilemma lies between giving him a ground floor office, and a private staircase to the mayor's room, or an upstairs office (with another room for his confidential clerk), and let the clerks in the public office communicate with him by telephone and by a lift. The former is the best arrangement; the mayor and town clerk could share a private door, lobby, and staircase, using the staircase when they wanted to see each other personally (which might not be very often), and the town clerk would be habitually on the ground floor, near to his public office clerks, and also to any visitors who might have a claim to see him personally.

Every first-class town hall which has a grand suite of entertaining rooms should also have a grand staircase which is not used for the ordinary business of the building, but only for ceremonial occasions. If it is worthy of the ceremonial occasions, it will be too good for the ordinary business traffic, and if used for the latter purpose, it will never be kept in its best condition. In connection with this grand staircase must be ample cloak-room accommodation for ladies and gentlemen, and this must be on the ground floor, and not on the upper floor, so that the company may ascend the staircase in their festive array, and not with their cloaks and hats. And it is essential that the entrance doors to the retiring-rooms for ladies and gentlemen should be well separate from, and if possible out of sight of each other. We have seen many plans for town halls in which this consideration was entirely overlooked, and the rooms placed in a conspicuous proximity which is rather undignified.

The town councillors should have their own entrance and staircase, separate from the public entrances, and their own set of retiring rooms in connection with the council room. It should be provided also that the mayor should have convenient access from his private room to the chair in the council room. The public gallery in the council chamber is better placed at the side than at one end; the public are not so much *en evidence* then, while they can hear the speaking better. There should be a separate staircase to it from the street, as it is often attended by persons who have no business in the other part of the building, and are better out of it.

In regard to some special requirements for special officers of the corporation, their solicitor or legal adviser, if included on the staff, should have his office in contiguity to that of the town clerk, who may often have to confer with him. The borough engineer or borough surveyor, by whichever title he is called, requires a drawing office with a north light (a point often overlooked); and if there is a city conveyancer, or other such official, specially occupied with the sale or purchase of building sites, his office should be near that of the borough surveyor.

Besides the general relation with the public which is maintained through the town clerk's office, there are other offices which have special business with the public of a kind liable to periodical inflation, viz., the rates, gas, and water offices. In a large city there would be a separate office for each of these departments, and at the quarterly periods when the payments become due there is likely for some days to be a considerable influx of ratepayers, many of them of the poorer class. These offices, therefore, should have easy access on the street level, not on the most important side (architecturally) of the building, and should be planned so that the public portion forms in some sort a passage, with one door for entrance and another for egress, so as to avoid crowding and confusion at the doors.

In addition to the placing of the various departments in the most convenient positions in relation to each other and to the public, there is the question of planning the interior lines of communication of the building. These should always be planned so as to combine convenience and directness of route, with some opportunity, if possible, for architectural effect at the main points of meeting or crossing. The corridor plan of a large town hall is a matter of some importance in the convenient use of the building. The following points in regard to it, may, we think, be taken as axioms:

1. Corridor communication should be continuous all round the building. A corridor plan of which a small portion is blocked, say by a room to which it leads up, is both inconvenient and, to visitors who do not know the building, puzzling.

2. Corridors should follow straight lines as far as possible; and if there is a deviation from the straight line, it should be on the basis of an axial and symmetrical arrangement. An unsymmetrical corridor plan is a puzzle-ground to the visitor.

3. Nothing has a more gloomy effect in the interior of a building than corridors lighted by borrowed light through the doors of rooms. The ideal arrangement is to keep the greater part of the corridors along the sides of an open court or lighting area. If that is impossible, there should at least be a sufficient recurrence of spaces for direct lighting; in some cases these can be arranged in connection with staircases.

4. A large window at one end of a long corridor will not really light it efficiently, however it may be assumed to do so on paper.

The British Pavilion at Rome.

FOR the International Exhibition of Fine Arts, to be held in Rome next year, in the grounds of the Villa Borghese, the design for the British Pavilion has already been made, and a rough engraving of it was published in the "Times" of Tuesday last. It is rather a surprise. The idea seems to have been that we should exhibit some reproduction of a masterpiece of English architecture instead of a new English design specially made for the occasion. There is something to be said for the idea, but the result seems to be that not a masterpiece, but a piece of a masterpiece, has been chosen, and that the façade of the English Pavilion is to represent the upper part of the front of St. Paul's Cathedral, except that the columns of the centre portion have become pilasters, with no recess behind them. Mr. Lutyens is named as the architect for the pavilion; we should regret to be in opposition to him, but we must say that we do not think this idea a very happy one, more especially as the merit of St. Paul's façade consists much more in the general effect of the whole than in the details. It seems to be argued also that a piece of English Renaissance like this would be peculiarly in place in Rome, surrounded by so much work of the Italian Renaissance. Perhaps it may only serve to show how timid and restricted was Wren's Renaissance architecture in face of that of some of the great Italians. Altogether, we think the idea is rather unfortunate, and that Mr. Lutyens would in fact have been quite able to produce something as good and more suitable off his own drawing-board.

Ironmongery Specifications.

A SOMEWHAT spirited controversy in recent issues of "The Ironmonger" has turned upon the question of legitimate profits to the builders' merchant and the builder on goods specified by the architect. It is not in the ironmongery trade alone that the question of "prime cost" is rousing aggrieved feelings. We have touched upon this subject in regard to other trades more than once in the last few months. One correspondent states the case very fairly by saying "that the architect, to maintain his reputation, is anxious to secure for his client the best that a fixed sum can purchase, and it is clear that the choice of goods in the way of inside fittings is practically impossible until the client is consulted." Still he maintains it is a fair question whether the architect, "from a legitimate trading point of view, has the right to obtain discounts to the advantage of his client at the expense of the builder or tradesman who justly claims his provided profit. I am aware of the stipulation 'add profit, carriage, and fixing,' but apart from the clause, trade preference must be considered, and the trade discounts should not be made public, as, under the present system, is done. List prices are useless; net trade terms are wanted, and the builder's profit becomes limited to his customer's consideration." No doubt this constitutes a real grievance, though the practical omission of profit on prime cost or provided sums might be remedied by builders agreeing among themselves to charge a certain percentage of profit. Unfortunately it does not seem possible to do this; but it affords an illustration of the benefit which all builders would obtain by joining the organisation of the National Federation. No architect desires to deprive the builder of his legitimate profits; but in the stress of present-day competition it is practically impossible for the builder to take his profit if he wishes to secure a contract. The correspondent already referred to suggests that if list prices were taken, the builder "would take care to ascertain the discount, and if it were, say, 50 per cent., he would deduct accordingly. If he wanted too much profit, the result would be inevitable failure to secure any contracts." There is something to be said for this view. Another correspondent, replying to this letter, retorts somewhat savagely: "The majority of builders are men of the worst possible class, and their capacity for buying the worst and cheapest kind of material is well known. If 'Kynance' had been 'had,' as I and many others have, by trusting to the honesty of builders, then he would buy everything used on the job (as I shall do in future), and simply let the builder quote for erecting the house. Only by this method can one get what is specified." This is, of course, an extreme view, and the writer has evidently been somewhat unfortunate in his choice of builders. But this discussion raises a question whether, even in the metal trades, the discounts are not extraordinarily large, much larger than they need be to allow for fluctuations in the price of raw material. Contractors on the ordinary list prices would get, say, an ordinary discount of $33\frac{1}{3}$ per cent. upwards, plus $2\frac{1}{2}$ per cent. for cash, less the cost for carriage and packing, from which must, however, be deducted the credit on empties returned. The architect very naturally desires to secure a price approximating the actual worth of the goods, and he also frequently specifies goods of a special make, of which he has knowledge, or which possess advantages over the ordinary, and possibly cheaper, pattern or type which the builder would buy on his own initiative. If the procedure which obtains among many architects of allowing a percentage on the prime cost sum, based on the actual invoices produced by the builder, were generally adopted, we do not think anyone concerned would have reason to complain.

A Railway on the Malvern Hills.

THE proposal to run a funicular railway up the Malvern Hills is likely to arouse considerable opposition. The Malvern Hills seem to be exceedingly unlucky in attracting the attention of the business speculator. It is but a short time since the operations of the quarry owners were attracting public attention and disapproval, mainly owing to the unsightliness of their waste heaps; and if memory serves us it was finally arranged that quarrying operations were to be confined and the waste heaps removed. Compared with a funicular railway these waste heaps would be artistic adornments. The people of Malvern appear to be indifferent to the destruction of the very beauties that attract people to the town, and therefore seem in no small danger of killing, or allowing to be killed, the goose that lays their golden eggs. Some seaside towns, appealing to a certain crude taste, have no doubt found it financially profitable to cultivate these areas on the lines of Coney Island and other pleasure cities of the United States. But natural surroundings are by no means a necessary factor in the attraction of people of crude feelings; indeed, they would probably pass unnoticed. It is to the quieter and more cultivated minds that such districts as Malvern must appeal if they are to maintain their reputation as watering-places.

Building in Haste.

ONE of the most delightful of the southern counties was formerly known as "sleepy" or "soporific Sussex." Hustling Horsham is going to win for it a very different reputation. "Already some forty years of haphazard consideration have been devoted to the subject" of "the much-needed baths" for Horsham; and now, according to the "Sussex Daily News," "once again the spirit of revolt is out against these slow methods. 'What we want we'll have!' seemed to be the sentiment of the representatives of the athletic clubs and kindred organisations, who devoted an evening to preliminary discussions. . . The only fear is that there may be those who desire gradual development to be the policy, whereas a bold effort would in all probability be far more profitable in the long run." The writer seems to be perfectly serious in these daring observations. There is not the slightest indication that he is afflicted with an abnormal sense of humour; which is rather a pity, for its absence may lead him to encourage the rash but determined athletes of Horsham to plunge with headlong precipitancy into the baths scheme. Already, in the course of a single evening, they have arrived, as at a bound, at the "preliminary discussions," and their headlong haste in thus forcing to immature fruition the sturdy growth of forty years of "consideration" is little short of scandalous. Why, if such indecent haste is allowed to go on unchecked, those baths may actually come into being before this hurrying century's clattering close! If it takes forty years to arrive at the "preliminary discussions," how long should it take to complete the building? Anyhow, we may be very sure that the time-penalty in the contract will be enforced with the utmost strictness.

NOTES AND NEWS.

The Shrine of Aphrodite-Astarte.

Dr. Max Ohnefalsch Richter contributes to the "Times" a long account of his discovery (in conjunction with Dr. K. Koritzky, a German archæologist) of the ancient Shrine of Aphrodite-Astarte in Cyprus. He refers to the abortive excavations at Kouklia, carried out by English scholars in 1887-8, where nothing prior to the fourth century B.C. was discovered, thus establishing the fact that the more ancient sanctuaries and altars, such as the shrine mentioned by Homer, must be situated elsewhere. He claims to have discovered the locality at Rantidi, stated as Randi on Kitchener's map. The position is indicated as follows:—"The new like the old road to Papho runs through Rantidi. After leaving the Kha Potami river farm, we mounted to the Rantidi plateau and followed the road eastward until we reached the 86th milestone, which is exactly 86 miles distant from Nicosia, the capital of the island. There we left the road, going to the right southward in the direction of the sea, and entered the State forest. Many wild olive and carub trees, together with other wild trees, shrubs, and thorns, cover the ground at this point. After walking for about ten minutes we lighted on the first field of ancient remains. A thicket more or less dense partially surrounds them, and bushes grow between the stones and over them." The explorers had little time to spare and "after the inspection of the ground we were very anxious to be the first to inform the Government of the island and the authorities of the museum, as well as our friends at home, of the discovery; and to preserve the place to the Prussian and Saxon academies and the editor of the "Corpus Inscriptionum Cypriacarum" for the purpose of excavation."

This has been done, and Dr. Zahn, one of the Assistant Keepers of the Royal Berlin Museum, has been instructed to meet Dr. Richter on the site and make a surface examination and topographical survey of the district, upon which the plans for excavation will be founded. Dr. Richter bases his discovery on the visible remains being of entirely early date and the inscriptions being exclusively Cyprian-Greek syllabaric. The fields of remains are very extensive, and are said to extend over several English miles.

The A.A. at Bath.

The members of the Architectural Association, on the occasion of their visit to Bath, were entertained to lunch at Monk's Park on Saturday, July 23rd, by Sir John Goldney. Sir John presided over a large company, which included no less than six nationalities—American, Russian, Indian, Japanese, Swede and English. Baron Frederics was also present. The chairman extended a hearty welcome to the members of the Association, expressing the great pleasure it gave him to have the privilege of presiding at the luncheon. He also paid a very high compliment to the Bath Stone Firms, his tenants. The President of the Association (Mr. Arthur Keen) responded briefly, and other speeches were delivered by Baron Frederics and Mr. Matsuoto Maeda, the representative of the Japanese Government. The toast of the Bath Stone Firms was proposed by the President, to which Mr. T. Sturge Cotterell responded on behalf of the company. Afterwards the company continued their drive from Corsham to South Wraxhall Manor, at the invitation of Mr. Richard Cox, J.P., who conducted the company through the interior of this beautiful old Elizabethan building, which was for some years unoccupied. Upon the return journey up to Bath being completed, an inspection of the Baths was made, the company being received by the Mayor (Alderman Major C. H. Simpson), Alderman C. B. Oliver (Chairman of the Baths Committee) and Mr. A. J. Taylor. Tea was partaken of at the Roman Promenade. A vote of thanks to the Mayor for his hospitable reception was moved by Mr. Keen, who paid a high compliment to the architectural beauties of the city of Bath, which they, as architects, appreciated so much. In replying, the Mayor expressed the pleasure it gave him to be able to receive them, particularly as they were architects from whom they could learn so much. Afterwards Mr. A. J. Taylor conducted the party round the building, and gave the members a most interesting description of the Roman antiquities. On Sunday a private visit was paid to Prior Park and Lodge Style, Combe Down, where the party was entertained to tea by Mr. Cotterell. They afterwards proceeded to Conkwell Manor, the residence of Mr. J. Thornton, who showed them round the interesting building.

The Restoration of the Propylæa.

In the August issue of "The Architectural Review" is published the concluding part of Mr. Budden's series of articles on recent reconstruction work on the Acropolis at Athens, of which two illustrations appear in this issue. The author deals in this article with the reconstruction of the Propylæa, now in progress, a work which may be regarded as the culminating achievement of a study extending over seventy-five years. The approach to the Acropolis was cumbered with rubbish arising from the mediæval and Turkish fortifications, and the task of clearing this away has been one of considerable difficulty. Beulé's excavations in 1852 revealed certain data with regard to the great Roman stairway which was constructed in the first century A.D., but after his investigations were concluded, nothing further was done till 1875, when Schliemann engineered the removal of the mediæval tower built over the west wing, and so prepared the way for a realisation of the original intention of the design. The work of excavation, begun under M. Carradias in 1885, contributed little more information about the Propylæa, and it has been left to Professor Dörpfeld (under whose direction the present reconstruction is being effected) to solve the problems of the site. It is interesting to note that reinforced concrete is being employed to some extent in the restoration, in preference to the steelwork adopted in the case of the Erechtheion, where rolled joists were inserted under the marble beams of the north portico and in other places.

The September issue of the "Review" also contains a number of photographs of Mr. John Murray's very successful new building for H.M. Office of Works and Forests in Whitehall. Garden design is represented by some delightful examples of the work of Mr. Thomas Mawson, and a fountain by Mr. Alfred Gilbert. The Deanery of St. Paul's is the subject of the "Historical Town Houses" article: the "Exemplar" comprises some details of the ceiling at the Guildhall, Rochester, the fine example of brickwork from a house at Enfield which is now in South Kensington Museum, and a simple piece of wrought-iron balustrading: a number of illustrations are given of English, French and German furniture of the sixteenth and seventeenth centuries; and, in the "Town Planning and Housing Supplement" is a profusely illustrated article on Berlin by Mr. Raymond Unwin, in which the author deals not only with the city as it is, but also with the schemes projected for Greater Berlin. It is noteworthy that, although town-planning powers have been exercised for many years by the different municipalities around Berlin, for want of common action and a central body co-ordinating their work, many parts of the city, though well planned as isolated portions, have grown up with little more proper relation to the whole plan of Berlin than we find in the different areas of London. It was with the idea of finding some solution to this difficulty that a huge competition was held recently, for the promotion of which no less a sum than £8,000 was voted by the authorities.

MR. BURNS ON TOWN PLANNING.

Mr. John Burns, President of the Local Government Board, inaugurated the new garden suburb at Romford on Thursday last, by laying the foundation stone of the first house. After the luncheon, which followed a tour or inspection of the estate, Mr. Burns delivered a speech from the steps of Gidea Hall. They were inaugurating that day, he observed, another link in the garlanded chain of garden suburbs surrounding London. It followed the lines of the garden city at Ealing, the garden city of Hampstead, and schemes of housing approaching the dimensions of garden suburbs that in recent years had been springing up—as, for instance, those at Tooting and at Tottenham. The object of this movement was to bring the town into the country, the garden into the town; and, by judicious amalgamation of both, to secure, irrespective of class, something more tolerable, more decent, and more human than the houses that had been dumped in and around London during the last hundred years. They were inaugurating a new community—a new hope. He hoped that the Romford suburb should serve as a model and example to be followed throughout Essex. The spot had been alternately British, Roman, and Elizabethan. He welcomed the grafting of democratic communities upon the sites of the houses of the old nobility. They had been well advised in preserving the ancient amenities of the Elizabethan property. Age alone could give fine trees and good gardens; and these created one of the most pleasant environments that he had been associated with during his twenty-five years' experience of housing and town planning. The prospects of the suburb entitled him to say that the name of Mr. Raphael fully deserved the gratitude which posterity would undoubtedly accord. The name of Mr. Raphael would rank with those of Mr. Cadbury, Mr. Lever, Mr. Rowntree, Mr. Vivian, and scores of others intimately associated with town planning. This movement was not confined to Romford, to Britain, nor to the continent of Europe. Every community of civilised people wished to become more civilised, and were actively engaged in planning out the futures of towns, villages, and cities. This garden suburb was an attempt to make a community consciously to order its present habitation, and so arrange its civic expansion on lines healthy, wealthy, beautiful, and wise. It was an attempt to arrange that ugliness, meanness, and squalor be avoided in the near future, and in years to come. He was emphatically for the homestead against the tenement, the house versus the flat, the home against the barrack—peace to the cottage and death to the institution. He liked the detached house, the separate garden; the private home with the collective playground. They had nothing to gain, but, on the contrary, all to lose, by imitating the example of Germany and America. The British was the domestic ideal of a home, and the best in the world. They had miserable croakers, living in a fog of pessimism quite foreign to us as a nation, who said that we ought to go abroad in order to see what to do. He would rather be found dead in England than alive anywhere else. In Berlin 75 per cent. of the population were living in three rooms or less. There was no Arcadia, Utopia, or earthly paradise. London, against this figure, had 52 per cent. In Berlin 539 houses in every thousand were five storeys, and 99 per thousand six or seven storeys. The average in London was from two to three storeys. Berlin had 46 persons per house, London had 8 per house. In Berlin 80 per cent. of the houses faced courtyards, and 20 per cent. faced the open street. London led by 20 to 50 per cent. all capitals in the world.

And yet they were advised by miserable Jeremiahs to imitate countries inferior in the matter of housing. Battersea had something less than 200,000 people; yet it had more separate buildings and houses than Berlin with over ten times the population. In forty years the population had increased nearly four times; yet infant mortality had dropped. When the Romford estate was completed, care should be taken that there were not too many houses to the acre. It would be the envy of Bournemouth, and an example to the seaside and pleasure towns.

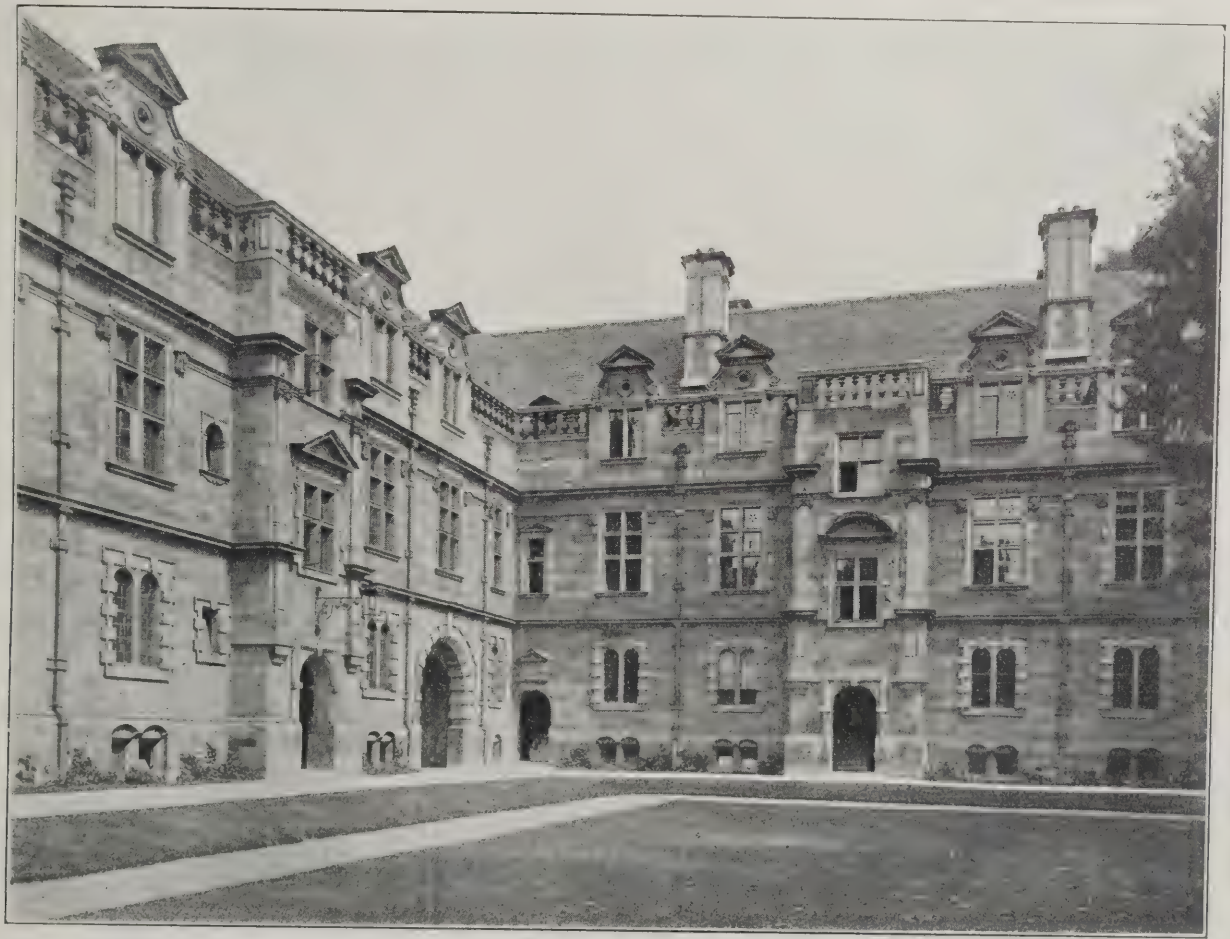
In London during the past twenty-five years 500,000 houses had been built, 7,500 streets made, and 23 squares created. It would be a reproach and a scandal if efforts were not made to arrest any attempt to deprive London of its 400 gardens and squares. In the same time 600 street improvements had been carried out.

Our municipal forefathers were entirely lacking in foresight, and in civic imagination. Were this not so, all waste would have been avoided. From 13 to 16 families per thousand were leaving the inner ring of London every year. Twelve of the central parishes were either stationary or declining. To the men of Romford, therefore, he would say that the future was all on their side. From the purely agricultural land were being abstracted 500,000 acres to be converted into roads, railways, factories, houses, and workshops. This absorption pointed emphatically to the necessity of so ordering the growth of the transfer that drawbacks and obstacles as those to which he had referred be avoided entirely. A town plan was needed for almost every growing village. There were now less than 25 per cent. of the people in the country and the village. He wanted to see every town with its park and garden arrangements, and its proper sanitary equipment. In the past, all law and regulation had been to prevent the expansion of towns. They had only to refer to Elizabethan or Cromwellian times to see that it was customary to prevent houses from being built at a greater distance than one mile from Westminster, or half a mile from Charing Cross. Who knew but what London might extend in the future from Windsor to Gravesend, and from Hayward's Heath to Northampton. The greatest architect we had produced, Sir Christopher Wren, notwithstanding that he built 55 churches, Greenwich Palace, and Hampton Court, had made a curious mistake in his plan for the reconstruction of London. This was so arranged within walls that there should be "no cemeteries, parks, or gardens, and other unnecessary vacuities" within its confines. Expansion was inevitable. Hitherto towns had grown up in a sporadic, squalid, and shapeless way. They had been defined by narrow laws and narrower men. They were confronted by the architectural defects of their forefathers. The economical ratepayer would say: "Will these improvements pay?" He would answer: "The more you spend on the architect, the less you will spend on governors of gaols. The more you spend on drainage, the less you will spend on the policeman. The more you develop, the more healthy and sober the community than could possibly be reared in the large towns and cities."

In 1899, before town planning was introduced, and before the Notification of Births Act existed, England and Wales had a death rate of 18 per cent. In 1904 this was reduced to 16 per cent. To-day it is 14 per cent., a wonderful diminution. In 1899 infant mortality was 163 per thousand; in 1900, 145; and in 1909, 109—as against 163 in 1899. It was, therefore, a sound and wise investment to encourage by all the means in their power such schemes as meant the improvement of the race. They had got to recognise that education was abroad. There were 50,000 empty houses in London. The L.C.C. was not to blame. The people who were to blame were the architects who advised basement dwelling. There were 500,000 empty houses in England and Wales. This was due to the fact that forty or fifty years ago things were not arranged to meet the needs of the future.

He advised them not to have more shops than necessary in the garden suburb. There were 30 to 40 per cent. too many shops. The shameless vulgarity of advertisements displayed on the side walls of shops quite naturally drove people elsewhere, and sometimes out of their minds.

In his concluding remarks, Mr. Burns admonished the residents to avoid street noises in Romford—to get rid of the smoke nuisance before it began.



This Court, built in 1883, is a good example of the work of the architect. But though he caught the spirit and detail of old work he has spoilt the feeling of repose by making the staircases far too obtrusive, with the windows at a different level from those of the actual "keeping" rooms, and so cutting through the lines of these other windows.

NEW COURT, PEMBROKE COLLEGE, CAMBRIDGE. GILBERT SCOTT (THE YOUNGER), ARCHITECT.

LEGAL.

By OUR LEGAL EDITOR.

Accidents During Building Operations.

The question Who is liable for an accident happening and causing personal injuries during building operations? is one which may be approached from many different points of view. It raises a number of other questions. Who was injured? If he was a workman, was he employed by the builder or a sub-contractor? Did the accident happen owing to a defect in the ways, works, machinery, or plant in the building, or did it arise out of and in the course of the employment? If the injured person was a stranger, was he invited on to the premises, or was he there in defiance of a notice—" No admission except on business"? If the injured workman was employed by a sub-contractor, and the accident took place in circumstances which gave him a right to make a claim under the Workmen's Compensation Act, the law is as follows. The workman may sue the contractor in the first instance, and then, if the sub-contractor is liable under his contract with the head contractor to take responsibility for accidents, the head contractor may be indemnified. All disputes of this kind must be settled by arbitration under the Act. Again, suppose the accident was due to the wrongful and negligent act of a stranger; as where, for instance, a builder's workman on a ladder is knocked down by a person carelessly knocking against the ladder in the street, in that case the employer, while having to pay compensation in the first instance, would have a remedy over against the stranger.

The question whether an accident happened owing to a defect in the ways, works, and machinery or plant only arises in cases where compensation is claimed under the Employers' Liability Act. That measure, while it is not nearly so wide as the Compensation Act, makes the employer liable for accidents arising (*inter alia*) through the defects above mentioned. Although this method of procedure is not often resorted to, yet as the cases are tried by a judge and jury and a lump sum may be recovered, litigants are sometimes advised to proceed in this manner. This is a risk which the builder must usually assume.

The question Was the injury the result of an accident arising out of and in the course of the employment? is one which has occasioned much difficulty. The kind of injury which the builder's workmen sustain is usually the result of an accident, but it is not so easy to decide that it has "arisen out of the employment." The words point to accidents which arise from acts or omissions of the injured workman himself, or of his fellow-workmen, which acts or omissions are within or, at least, are not outside the scope of the employment on which such workmen are engaged, either expressly or impliedly to perform; and they also include such accidents, however and by whomsoever caused, as may naturally arise out of the character of the employment itself, or from those risks which may reasonably be contemplated as incident to that employment. The following principles may be deducted from the decided cases: An accident happening during the time of going to or coming from work is one for which the builder is not responsible, unless the contract of employment expressly or impliedly includes that time. An accident during dinner is within the Act; but where a workman meets with an accident owing to a breach of rules, he is clearly not entitled to compensation. Again, an injury sustained by an idle workman who is larking cannot form the subject of compensation. It should be mentioned, too, that the employer is under no liability in a case where the injury is due to serious and wilful misconduct, unless the injury is serious and permanent, or results in the death of the workman. In order to determine the liability as between builder and building owner, it is necessary in the first instance to look at the building contract. It generally gives the building owner a complete indemnity against all accidents, whether those accidents give rise to claims at Common Law, under the Employer's Liability Act, or the Workmen's Compensation Act. If there is such a clause in the contract, the building owner has but little concern with the accident.

The accident clause in the form of contract sanctioned by the Royal Institute of British Architects is as follows:—

"The contractor shall be responsible for all structural and decorative damage to property, and for injury caused by the works or workmen to persons, animals, or things, and shall hold the employer harmless in respect thereof, and also in respect of any claim made under the Workmen's Compensation Act, 1897, or any amendment thereof, by any person in the employ of the contractor. He shall also be responsible for all injuries caused to the buildings, the subject of this contract, by frost or other inclemency of weather, and shall reinstate all damage caused by the same, and thoroughly complete the whole of the works."

This would extend to make the builder liable for an accident to a passer-by in the street, or any accident to a workman.

The employer is liable to third persons for the tortuous acts of the builder, where he has expressly authorised or subsequently ratified such acts; for everyone who procures the violation of a right to be done by another is as responsible as if he did the act himself. Moreover, he who procures or authorises an act to be done by another is responsible for all that the other necessarily does in the execution of his authority.

If an employer contracts with a builder to do work which can lawfully be done without injury to others, and the builder selects his own workmen, and has the immediate control over the work, the employer will not, as a rule, be liable for injuries to strangers caused by negligent execution of the work.

So, if the execution of work is left to a builder, who exercises an independent employment and selects his own workmen, and has the immediate control and superintendence of the work, the owner of the house, who employs the builder, may not be responsible for the creation of nuisances by the negligence of the builder's workmen, if he was ignorant of their unlawful proceedings, and had no knowledge of the probable consequences of their acts. But the employer may also be liable if he interferes with, or retains control over, the builder. It is immaterial, however, if they are acting substantially as the contractor's servants at the time of the injury.

But where an employer orders a builder to do an act which is unlawful in itself, or which cannot be done without creating a nuisance, then the act done by the builder is in substance the employer's act, and he, as well as the builder, is responsible for the consequences which naturally result from it. For when an employer contracts for the performance of work which, properly conducted, can occasion no risk to his neighbour's house, which he is under obligation to support, he is not liable for damage arising from the negligence of the contractor. But, in cases where the work is necessarily attended with risk, he cannot free himself from liability by binding the contractor to take effectual precautions. He is bound, in a question with the party injured, to see that the contract is performed, and is, therefore, liable, as well as the contractor, to repair any damage which may be done.

The consequences of negligence do not, however, stop short at making good the immediate monetary loss which may be sustained. A faulty design may involve disaster and personal injuries, for which the architect may be held civilly responsible.

In Mosdell v. Mitchell and others ("Times," Jan. 20, 1891) the widow of a workman brought an action under Lord Campbell's Act against a building owner, his contractor and architect, for the loss of her husband. It appeared that the plaintiff's husband had been one of the workmen engaged in erecting certain houses, of which one of the defendants was the architect and another the builder. After the houses had been partly erected they fell, and the plaintiff's husband was buried among the falling walls and killed. It was shown that the fall of the building was due to a wall being too slight to bear the strain put upon it. During the hearing the jury, on the suggestion of the judge (Lord Coleridge, C.J.), stopped the case as against the building owner, but in the result they gave a verdict of £500 against the builder and the architect jointly.

With regard to strangers, it is obvious that a mere trespasser upon works takes a risk upon himself.

With regard to children, however, steps should be taken to prevent their having access to the works on any consideration; for if a door abutting on the street is left open, and a child comes in "to see the wheels go round" and is injured, the builder may be held responsible although the child was a trespasser. This rule is founded on good sense, for it is the instinct of a child to meddle with dangerous machinery. (See Harold v. Watney, 1898, 2 Q.B. 320.) Danger of this kind may be avoided by placing a half-door at the front entrance and keeping it always shut.

MEMORIALS TO THE LATE KING.

Newmarket.

A meeting of the King Edward Memorial Committee was held here recently, and discussed various schemes. One was to obtain the Severalls as a recreation ground; but the Jockey Club stewards would not consent to surrender it for this purpose. Another proposal was to sell the Town Hall for the purpose of a school of cookery, and apply the purchase money in part payment of the cost of a new Town Hall. An objection was raised to the erection of a monument to the late King at the cost of the rates. A counter suggestion was made that St. Mary's Square should be made a place of beauty and called King Edward's Square. A sub-committee was appointed to consider the Town Hall scheme, and if this could not be proceeded with the St. Mary's Square scheme might be taken up.

IN PARLIAMENT.

(From our Gallery Representative.)

Work at Rosyth.

Mr. Lambert, the Civil Lord of the Admiralty, in explaining the naval works vote in the House of Commons recently, gave some information as to the creation of the new naval base at Rosyth, on the Firth of Forth. The new dock at Rosyth, he said, would be increased by 100ft. in length, 10ft. in width, and 3ft. in depth. When finished it would be 110ft. wide, 850ft. long, and 38ft. deep. It was proposed to order another new dock at Rosyth which would cost an additional £280,000. This was considered to be a wiser and more economical plan than to scatter docks up and down the East coast. Referring to the transfer of torpedo factory workers from Woolwich to Greenock, where the new torpedo factory is progressing very rapidly, Mr. Lambert spoke of the difficulty of finding proper housing accommodation for 500 or 600 men. The Admiralty had agreed to guarantee the rent up to 100 houses, which were to be provided by a private company.—Mr. John Ward had something to say about the Fair Wages Clause in building contracts, and he complained of the want of housing accommodation suitable for workmen employed at Rosyth who had wives and families.—Mr. Macnamara, in reply, stated that there was nothing in the contract which compelled the contractors to put up a certain kind of house at Rosyth, but six acres of land had been placed at the disposal of the contractors for housing purposes. Up to the present every effort had been made to meet the needs of the men as they came to Rosyth, but he would again make personal representations. He had found the contractors very willing to meet suggestions.

Foreign-made Gymnasium Structures.

In reply to a question by the Earl of Ronaldshay as to whether the foreign-made wall-bars and beams recently supplied to the military depots throughout the country had proved satisfactory, Mr. Haldane, the Secretary of State for War, said they had proved entirely satisfactory. No reports had been received either at the War Office or by the Inspector of Gymnasia of any lack of durability, or as to the apparatus being unsafe.

Land Tax Return.

The return which owners of land require to fill up under Section 26 of the Finance (1909-10) Act has been issued as a Parliamentary white paper. The questions fill four foolscap pages, and there are two pages of instructions, including definitions of "gross value," "full site value," "total value," and "assessable site value."

The Condition of St. Magnus Cathedral.

In the House of Lords on 27th July, Lord Balfour of Burleigh, on behalf of Lord Avebury, asked the Secretary for Scotland whether it was the case that alterations were proposed to be made on St. Magnus Cathedral, Kirkwall; and, if so, what was the nature and extent of the alterations contemplated; in whom was the Cathedral vested, and who were responsible for its upkeep; what was the present condition of the fabric; what was the amount of money proposed to be expended on the alterations, how was it being provided, and under what architect's advice was action being taken; he further asked, in view of the great architectural and historical interest which attaches to the Cathedral, what were the powers of the Government in regard to it, and what were they willing to do in the matter.

Lord Pentland, in reply, said:—The answer in the first paragraph is in the affirmative. The nature and extent of the alterations contemplated cannot be stated, as those who are responsible for the plans have not communicated them to his Majesty's Government. The Cathedral is vested in the Town Council, and they and the Heritors are responsible for its upkeep. So far as I am aware the present condition of the fabric is good, and while the removal of certain galleries, screens, etc., which have been erected in modern times, would be an improvement, I am advised that there is no need for restoration. The amount of money proposed to be expended now on the alterations is, so far as his Majesty's Government can learn, £30,000, or possibly more, of a sum of £60,000 bequeathed for the purpose by the late Sheriff Thom. I am informed that the architect under whose advice action is proposed to be taken is Mr. George Mackie Watson. Under existing legislation the Government possess no powers in regard to the Cathedral, and therefore they are unable to take such steps as may, in their opinion, be necessary for the preservation of the building except the powers under the Ancient Monuments Act to take over the guardianship of the building as an ancient monument at the request of the owners. The First Commissioner of Works has arranged for the Inspector of Ancient Monuments to visit Kirkwall in August.

Bluestone as a Mineral.

The Chancellor of the Exchequer has proposed to make inquiries into a case brought to his notice by Mr. Courthope, in which notices were served demanding returns for the purposes of the mineral rights duty in respect of quarries from which bluestone is obtained for road material. Mr. Courthope suggested that as bluestone was an indurated sandstone it should be exempted from the tax.

South-Eastern District Post Office.

Mr. Herbert Samuel, the Postmaster-General, has informed Sir Wm. Dunn that the work of demolishing the old buildings of the South-Eastern District Post Office would be commenced by the Office of Works in August, and he hopes that it will be possible to begin building operations early in November.

Land Valuation Returns.

Mr. Pretyman asked the Chancellor of the Exchequer whether an owner who did not, on Schedule II. v. of the Valuation Return required from owners of land, state his intention to claim site value deductions would be debarred from or prejudiced in afterwards claiming those deductions; and whether the form referred to in the last paragraph of Schedule II. v. of the Return would be required to be completed before or after the gross value of the land had been estimated by the Government valuers and communicated to the owner.

Mr. Lloyd George, in reply, said all owners of land will receive a copy of the provisional valuation when made, and they will then have an opportunity of claiming any deductions which they omitted to claim when making their returns. It is intended that the form referred to should be completed before the provisional valuation is made.

Mr. Pretyman also asked the Chancellor of the Exchequer whether the valuation forms now being issued under Section 26 of the Finance (1909-10) Act, 1910, were to be immediately served upon all owners of land, or whether they were, in the first instance, to be served on certain selected owners; and whether, in the latter event, he could state by whom and on what principle the selection would be made.

The Chancellor of the Exchequer, in reply, said the forms of return now being issued were confined to cases in which an occasion had arisen for the collection of Increment Value Duty, and in which, therefore, it was necessary to value the land affected in advance of the general valuation. As regarded the forms which would be issued next month in respect of the general valuation, no selection was contemplated of the owners on whom they were to be served, and the forms would be issued to all owners with as little delay as possible.

Preference for United States Cement.

Mr. Hamilton Benn called the attention of the President of the Board of Trade to the preferential tariff of 20 per cent. granted on United States cement by Brazil, and asked whether, seeing that there was a large export of cement from the United Kingdom to Brazil, any steps would be taken to obtain from Brazil the same concessions as had been accorded to the United States.

Mr. Mackinnon Wood answered the question on behalf of the Foreign Office. He said a preference amounting to 20 per cent. of the import duties had been accorded in Brazil to certain United States products and manufactures, including cement, since 1904, and the list of articles had been extended from time to time. There was no commercial treaty between Brazil and the United Kingdom, but representations had been addressed to the Brazilian Government by the present Government and its predecessor with a view to securing most-favoured-nation treatment for British goods. Other European Governments—those of France, Germany, and Belgium—had also made representations to the Brazilian Government, which, like those of this country, remained without effect. The reply was followed by a series of supplementary questions by members of the Opposition, who suggested the desirability of this country possessing a tariff weapon, but Mr. Mackinnon Wood, amid the cheers of his own party, pointed to the fact that the representations of European countries which possessed a tariff had been ineffective.

Another Brass Plate in Westminster Hall.

Mr. Harcourt has informed Mr. Oliver Locker-Lampson that he has arranged for a brass plate to be let into the floor of Westminster Hall to mark the spot where His Majesty the late King lay in state.

The Amenity of St. James's Park.

Major Archer-Shee asked the First Commissioner of Works whether, in view of the fact that the roads in St. James's Park were among the widest and least congested in London, and that they were thoroughfares to all the main stations, as well as to the Houses of Parliament, he would consider the possibility of raising the speed limit in that park to 15 miles an hour instead of 10 miles, whilst still maintaining the present strict observance of the regulated speed.

Mr. Harcourt said he had to consider the convenience of pedestrians as well as that of those who used motors, and the faster motors travelled on the roads in question the less would be the enjoyment of the Park by the majority. He would, however, consider whether the limit could be raised to twelve miles per hour.

NEWS IN BRIEF.

It is announced that Lord Northbrook is selling some 400 acres of land at Lewisham for building development.

* * *

Nearly £1,300 has been received or promised towards the scheme of protective works which it is proposed to construct to prevent the further inroad of the sea on the Lyme Regis Parish Churchyard. The scheme will involve an expenditure of £2,000.

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The Contemporary Art Society has been formed for the acquisition of the meritorious works of British artists living or recently deceased. It proposes to lend its acquisitions.

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Lord Leighton's "A Noble Lady of Venice" has been purchased by his sister, Mrs. Matthews, to be added to the collection of his works in Leighton House, where during the past two years his "Death of Brunelleschi" and "Corinna of Tanagra" have been also placed.

* * *

A vote of £2,995,300, for naval works, buildings, and repairs, at home and abroad, was passed in the House of Commons on Tuesday, July 19th.

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It is stated unofficially that it is the intention of the Government to introduce before the summer adjournment a Bill amending the Copyright Acts. It is hardly likely, we think, that such a Bill can ignore the question of copyright in architecture; but concerning this point we must wait and see.

* * *

The Council of the Junior Institution of Engineers (Incorporated), in conjunction with the Council of the Society of Engineers (Incorporated), have arranged for a course of six fortnightly lectures on "The Law relating to Engineering," to be delivered by Mr. L. W. J. Costello, M.A., LL.B. (Cantab), the first to be given on the 10th October next.

* * *

King George has approved of the proposal that the All-Indian Memorial to King Edward should take the form of an equestrian statue at Delhi. The total of the fund that is being raised for this purpose is to be limited to five lakhs of rupees (£33,333). Part of this amount will be expended in taking up land for an ornamental garden.

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Prince Christian of Schleswig-Holstein presided on July 19th at a meeting convened by the Mayor of Windsor to discuss the project of a permanent memorial to King Edward VII. A fund is to be raised to pay off the existing debt on the King Edward VII. hospital, at Windsor, and to erect a statue to his late Majesty on the green in front of that institution.

* * *

Dr. H. M. Burge, headmaster of Winchester College, issued an appeal to Wykehamists some time ago in connection with the Preservation Fund for Winchester Cathedral, reminding them that in response to his appeal in 1906 there was an offering of £1,500. The sermon was preached by the Ven. Archdeacon of Winchester (Dr. Fearon), who was Dr. Burge's predecessor as headmaster, and in a letter which he appended to Dr. Burge's appeal he said that the work which lay before the Dean and Chapter had a peculiar interest for Wykehamists, because it was to complete and crown the work of their founder, William of Wykeham. The nave was generally allowed to be Wykeham's masterpiece, while it was his last creation, but after his death was carried to conclusion by inferior workmen, with the result that preservation work was absolutely necessary. He suggested that there could be no dearer privilege for Wykehamists than to give Wykeham's unfinished work the strength and permanency he would have wished to have given it himself, and to leave it secure for another five hundred years that mighty "avenue of stone" as the undying witness of his greatness. The fund has just closed, and it is announced that £1,756 has been contributed by Wykehamists past and present. More than £10,000 is still needed to complete the work.

* * *

The rebuilding the Polytechnic in Regent Street is now in active progress. It will be a steel-frame structure, and is the first building to be commenced under the L.C.C. General Powers Act, 1909, which means that the walls at no place need be more than 14in. thick. Without that Act they would have to be at least 3ft. 6in. in thickness. The façade has been designed by Mr. F. Verity, F.R.I.B.A., and will be in the French Empire style. The height from the pavement level will be 104ft. The building will comprise two basements (24ft. below the pavement level), a ground floor, and six storeys. The ground floor will be in Cornish granite, and the storeys above in Portland stone. Mr. Verity's design, it may be added, is the centre part of a larger design which may be completed as the leases of the shops on either side fall in, and they are rebuilt. The internal alterations are being carried out by Mr. George Mitchell, A.R.I.B.A. The cost of the rebuilding will, it is estimated, be about £70,000.

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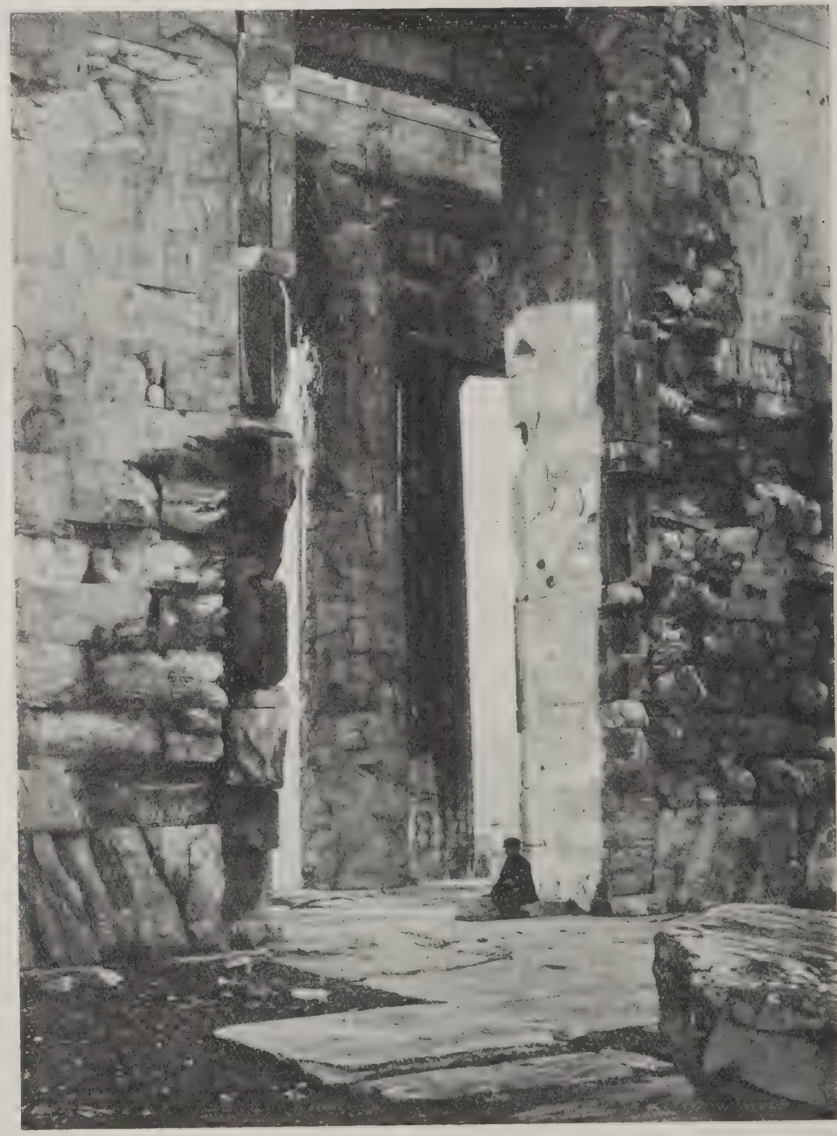
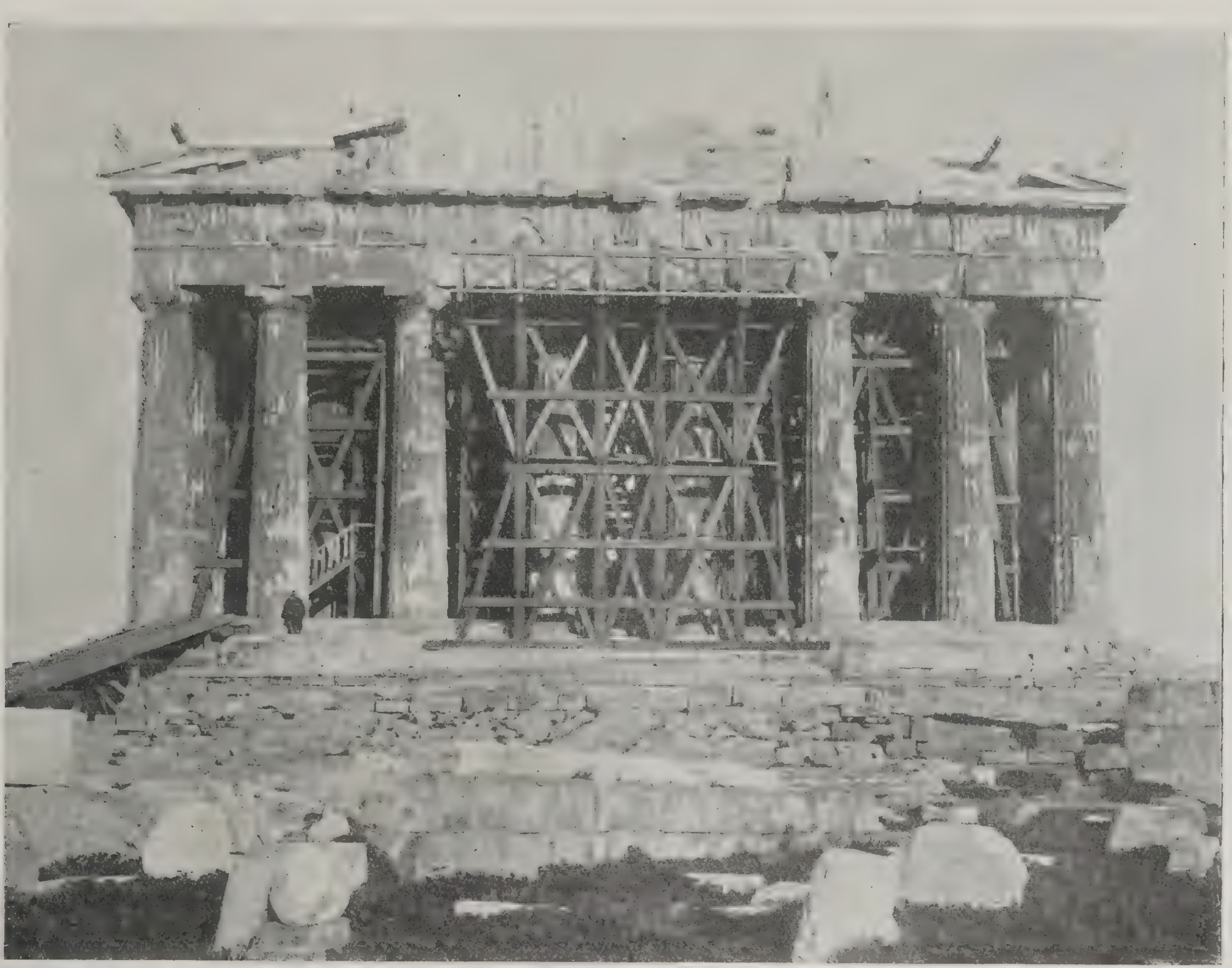
The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels has made grants of money in aid of the following objects, viz.: Building new churches at Bishopswearmouth, St. Gabriel, County Durham, £200; Grimsby, St. Augustine, £150; Pontyates, near Kidwelly, Carms., £75; and West Streatham, St. James, Surrey, £175; rebuilding the churches at Caerwent, St. Stephen, Monmouth, £40; and New Ferry, St. Mark, Cheshire, £100; and towards enlarging or otherwise improving the accommodation in the churches at Cockfield, St. Mary, County Durham, £60; East Thorpe, St. Mary, Essex, £50; Harlton, St. Mary-the-Virgin, Cambs., £25; Ilford, St. John-the-Evangelist, Essex, £25; Windermere, St. Martin, Westmorland, £30; York, St. Luke, £150; and Chesham Bois, St. Leonard, Bucks,



This view illustrates a piece of the past history of the Parthenon, showing as it does the jamb-linings which, among other alterations, were introduced during the Byzantine occupation, when the Parthenon was converted into a Christian Church.

THE WEST DOOR OF THE PARTHENON: DETAIL SHOWING BYZANTINE JAMB-LININGS CONSTRUCTED OF ANCIENT MATERIAL.



This view is an illustration of the work which is at present being carried out in repairing the buildings on the Acropolis. The funds for the work have been mainly supplied by the Greek Government and the Greek Archæological Society, and members of the American School at Athens have been helpful in discovering and sorting out from the debris the various stones which have been rebuilt into their original position.

THE PARTHENON: RESTORATION OF THE WEST FRONT IN PROGRESS.

£55. Grants were also made from the Special Mission Buildings Fund towards building mission churches at Bow, Devon, £20; Bowburn, County Durham, £30; Carlton Vale, Kilburn, Middlesex, £25; Furzedown, Surrey, £50; Grimsby, St. Hugh, £40; Rodley, near Leeds, £20; Stockwell, The Epiphany, Surrey, £50; and The Brook, Chatham, £30.

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The Finsbury Borough Council have granted a contract for ten years to the Gas Light and Coke Company for the lighting of all their streets by the new inverted burner lamps, which will show an increase in total illuminating power of 100,000 candle power over the existing system of lighting, but with a reduction in cost of £525 a year. This decision was taken after the latest examples of gas and electric lighting had been carefully inspected and relative costs considered.

* * *

The Clothworkers' Company have voted £5,000 for an additional building to complete the front elevation of the Clothworkers wing of the University of Leeds, and to provide extensions necessary for teaching the French system of worsted-combing drawing, and spinning. The freedom of the City of Winchester has been conferred upon Alderman Stopher, architect. Mr. Stopher, who was born at Saxmundham, went to Winchester in 1847, and has designed many important buildings in the locality. Alderman Stopher is said to possess one of the best libraries of Hampshire topographical works. He was Mayor of Winchester in 1884, when the 700th anniversary of the Winchester Mayoralty was celebrated.

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Mr. Reginald G. Kirkby, A.R.I.B.A., F.S.I., has resigned his appointment as City Architect of Bradford, a position he has held for the past two years. His work since going to Bradford has been of great value to the Corporation in spite of the fact that it has largely been of a routine character. He has supervised the completion of the Town Hall extension, and among other buildings he designed are the open-air school at Thackley, the textile school now in course of erection, and the cottage baths in several parts of the city. He now has the completed plans for the reconstruction of the Victoria Hall, Wyke, as a free library, reading-room, and baths.

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The death is announced as the result of an accident, of Mr. R. G. Cowe, architect, of Chester-le-Street.

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A case has been brought by the Brighton Town Council against Mr. Alfred Carden, Architect, of Brighton, for erecting a new building at No. 53, North Street, without having deposited the necessary plans and sections. The work appears to have consisted in re-roofing a back addition, and it was contended that the new building was 6in. higher than the old. The cross-examination of the Corporation witnesses tended to show that the roof required reinstating and that the difference in height was accounted for by the subsidence of the old roof, and the necessary alterations in the construction to make a good sound building. The case was dismissed.

* * *

Mr. Walter H. Derriman, B.Sc., A.C.G.I., A.I.E.E., Fellow of the Chartered Institute of Patent Agents, has entered into partnership with Messrs. Dicker and Pollak, Chartered Patent Agents, 37, Furnival Street, Holborn, E.C., and in consequence the name of the firm has been changed to Dicker, Pollak and Derriman.

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It is stated that there is some possibility of the famous Kirby Hall (inhabited by the Winchelsea family up to 1820, and now a ruin) being restored by the present heir, Lord Maidstone, who has just married Miss Drexel.

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The Committee of the House of Commons on Unopposed Bills, Mr. Emmott, Chairman of Ways and Means, presiding, on July 2nd approved of the Bill to confirm a Provisional Order made by the Board of Education authorising the compulsory acquisition of land for elementary school purposes in Bridge Road, Battersea; Prichard Road, Bethnal Green; St. Nicholas Street, Deptford; Gilsted Road, Fulham; Vespan Road, Hammersmith; Delhi Street, Islington; Wickham Street, and Vauxhall Street, Lambeth; Plassy Road, Lewisham; Aldenham Street, St. Pancras; and Trinity Place, Shoreditch. The Bill, which has passed the other House, was ordered for report without amendments.

TOWN PLANNING.

Winchmore Hill Woods. The Enfield District Council have provisionally agreed to purchase 60 acres of Captain Taylor's Estate, Greenlands, the area including seven acres of lake. The necessary sanction of the Council is all that is needed to complete the transaction, and it is not likely to be withheld. The land will then be devoted to the public, and will form one of the most beautiful parks near London.

Birmingham and Town Planning. The first meeting that has been held under the Town Planning Act took place at Birmingham, when a number of property owners and others were invited to meet representatives of the City Town Planning Council in furtherance of a scheme for acquiring land in the parishes of Quinton, Harborne, Edgbaston, and Northfield. The Lord Mayor presided, and said the Corporation wished to take the fullest advantage of the Act; they were willing to do all they could to co-operate with property owners for their mutual advantage. Their entire staff of experts was at the disposal of property owners or builders for advice as to how a particular piece of land should be laid out. Councillor Nettlefold said he wished it to be understood that it was not intended to force owners of land to develop it at once. The number of houses per acre was about ten.

Holland House. Mr. Harold Spender sends to the "Times" an *ex parte* statement concerning the manifesto issued by the owners of Holland House, that "If Holland House is destroyed as an open space in the midst of a crowded neighbourhood, it will be against the wish of the present owners, and only under the pressure of circumstances over which they have no control." Mr. Spender goes on to state that "The owners of Holland House complain that they will have to pay a heavy sum under the land taxes. Of course they will. Any individual who claims the luxury of keeping for himself and his family 70 acres of unoccupied wilderness in the midst of a crowded city ought to pay something for that luxury. But the owners have an easy way out. There is a clause in the Finance Bill which relieves from taxation any large park or garden where reasonable facilities are given to the public. Lady Ilchester and her family have only to open Holland Park without fee to the public, say twice a week, to escape taxation altogether." He concludes that "It is not fair that Holland House should be sacrificed to this petty Budget spite. This is one of the great historical estates of Great Britain which ought to be saved to the nation. Holland House, the home of the Foxes, the favourite resort of Macaulay, the vestal temple of freedom in England's darkest hour, the nursery of wits and genius, ought to be accessible to the people—ought to be owned by the people. The time has come when we ought seriously to consider whether, if individuals can no longer maintain these precious heirlooms, the nation ought not to buy them. Compulsory purchase for the nation by arbitration would seem to be the best reply to these insolent threats to throw on the scrap-heap the great national monuments of which they are trustees."

Liverpool's First Garden Suburb. Liverpool's first Garden City Suburb, which was recently inaugurated by the Marchioness of Salisbury, has for its site 185 acres of land, which has been leased for the purpose to the Liverpool Garden Suburb Tenants, Ltd., by Lord Salisbury. The movement is one in which Lord and Lady Salisbury and Lady Gwendoline Salisbury have taken a great interest. They have visited and inspected other estates in different parts of the country which have been developed on similar lines, and have expressed themselves as thoroughly in sympathy with the garden suburb movement, and pleased with the tasteful way in which the gardens have been laid out. A pleasing feature of the ceremony was the gifts of flowers from the various garden suburbs in the country, which were in the form of bouquets, one of which was presented to Lady Salisbury, and another to the Lady Mayoress.

A Facetious View of "Common or Garden Cities." The humorous view of any movement is natural and inevitable, and may, in its way, be not without its value. We therefore take leave to transfer the following lively effusion from the editorial columns of the "Globe": Of the building of garden cities there is no end. Nor should it surprise one that this comparatively new type of community—we say comparatively, because the first inhabitants of a garden city were Adam and Eve—appears in an attractive light, for, apart from any specific advantages of the mode of life it offers, the thing has the invaluable asset of novelty. It seemed that the garden city gave an adequate response to the "Give me air" of the Metropolitan householder, and that if the honeysuckle did not climb in proper profusion around the house, it was only because the plant was not sufficiently trained by the occupier. Already established, a garden city life has lately been consolidated, as it were, by the uncontradicted statement that it is producing a race so much above the standard in weight and height that they are to be little less than supermen. And now come the Norwood Urban District Council, panting to use their powers under the Housing and Town Planning Act on an acreage of wood and meadow land bigger than the acreage of Richmond. That the proposal is made on finely wrought business lines is shown by the fact that the architecture of the place is the basis of a town-planning competition in which "some of the leading architects" are competing. That the scheme, when completed, will create a furore of illimitable dimensions is certain. Who is there that will not wish to discover and enjoy whatever cryptic benefits accrue from a "caddy-free" golf links?

Middlesex Garden Estate Scheme. A preliminary notice is about to be issued of a company which it is proposed to form for the purpose of establishing a new garden estate within easy reach of London. The scheme will be undertaken with the co-operation of the authorities of King's College, Cambridge, and will be one of the earliest attempts to put into practice on a large scale the Housing and Town Planning Act, 1909. The authorities of King's College, Cambridge, are the owners of an estate of about 1,300 acres of land at Northwood and Ruislip in Middlesex, and the new company hopes to take over from Garden Estates, Ltd.—a company formed in 1909 for investigating the suitability of the estate for being developed in the manner now proposed—the benefit of a provisional agreement between the latter and the College. The Provost and Fellows of the College have intimated their willingness to sell on terms which will enable a harmonious scheme of town planning to be applied to the general development of the estate as a whole, while securing to the College a profitable price, amounting to more than £200,000, when the whole estate is sold. If sufficient promises are forthcoming a company will be formed and a prospectus issued. The estate, it is pointed out, exceeds in area many important towns, and is within 15 miles of Charing Cross, being served by four railway stations. With a view to securing the best possible plan a town-planning competition has been instituted, and the successful competitor's plan will be handed over to the company, for which he will be invited to act as consulting architect. The scheme will only be proceeded with provided that sufficient public support is forthcoming to warrant that step. The temporary offices of the proposed company are at 33, Henrietta Street, Covent Garden.

A Garden at Kensington. Representations are being made to the London County Council in favour of vesting the garden enclosure of Emperor's Gate, Kensington, in a committee of residents, in pursuance of the Garden and Towns Protection Act, 1863, with a view to its being kept as an ornamental ground for the use of the inhabitants. If the Council acquiesce, it will be the duty of the Kensington Council to levy a rate on the occupiers of the houses surrounding the garden for maintenance purposes.

L.C.C. Garden Suburb Scheme. Replying to Progressive criticism of the working-class dwellings' accounts for the year ended March 31st, at a recent meeting of the London County Council, Major Boscawen, the Chairman of the Housing of the Working Classes Committee, said that the Committee's work was being carried on as far as possible without regard to party politics. Referring to remarks made by Mr. W. C. Johnson, he said that the question of the possibility of enabling working men to buy their own dwellings in "garden suburbs" by a copartnership scheme or otherwise was under the consideration of the committee, and he had read an official report on the subject that morning.

Paris and Its Fortifications. A writer in "Justice" gives some details of the proposals of the League for the Institution of Open Spaces for dealing with the fortifications of Paris. The uselessness of these in modern warfare was demonstrated in the Franco-German War; but the ground covered by them has become increasingly valuable, and the financial question has no doubt stood in the way of their development for other purposes. The ground actually covered by the fortifications is valued roughly at £4,000,000, and it is hoped, on the ground of public improvement, that the State will sell to the city for £2,800,000. The *zone militaire* surrounding the fortifications is estimated as being worth another £5,600,000. It is proposed to construct a chain of eleven parks around the city on the land acquired, and to sell what land is not required for £8,400,000. This would cover the cost of purchase; but the figures are, of course, entirely fanciful.

The Romford Garden Suburb. The Romford Garden Suburb, at Romford, Essex, is one of the latest manifestations of the garden city and town-planning movements. It was inaugurated on Thursday last, July 28th, when the Rt. Hon. John Burns, President of the Local Government Board, laid the foundation-stone of the first house. No more appropriate spot could have been chosen for a garden suburb than his estate, about a mile outside the town of Romford. The historic associations of Gidea Hall (the fine early Georgian house, which is to be left standing as the central building of the suburb); the magnificent trees in which the park abounds, and which are to form avenues along the ample gardens of the houses to be built on the estate; the presence within five minutes' walk of the new railway station at Squirrel's Heath, with an excellent service of trains to Liverpool Street; and the fact that the Romford golf course on one side and the Romford public park on the other adjoin the suburb—all combine to give it unequalled advantages. Designs have been made for the houses in the suburb by some of the ablest modern architects, and sufficient care has been taken in planning the estate to guard against any kind of overcrowding on the one hand and speculative jerry-building on the other.

Sealand Garden Suburb. At Sealand, a picturesque spot situated on the river Dee, near Connah's Quay, and about six miles from Chester, a new garden suburb has been started, under the auspices of the Sealand Tenants, Ltd., on copartnership lines. The land has been laid out under the supervision of Mr. Raymond Unwin, and it is proposed to erect 470 houses at a cost of £80,000. About ten acres have been purchased, and an option secured on a further thirty acres.

Garden City for London Boys. Prince and Princess Alexander of Teck have laid the foundation-stones of two of the houses which are to be erected on a recently acquired estate of 39 acres at Woodford Bridge, Essex, where a garden city for boys is in course of development in connection with Dr. Barnardo's Homes. The estate is beautifully wooded; and Gwynne House, a fine old residence standing on its slope, is famed for its associations with Nell Gwynne. Thirty houses are to be erected in the grounds to accommodate about a thousand waifs and strays.

HARE STREET, SQUIRREL'S HEATH, ON THE ROMFORD GARDEN SUBURB ESTATE.

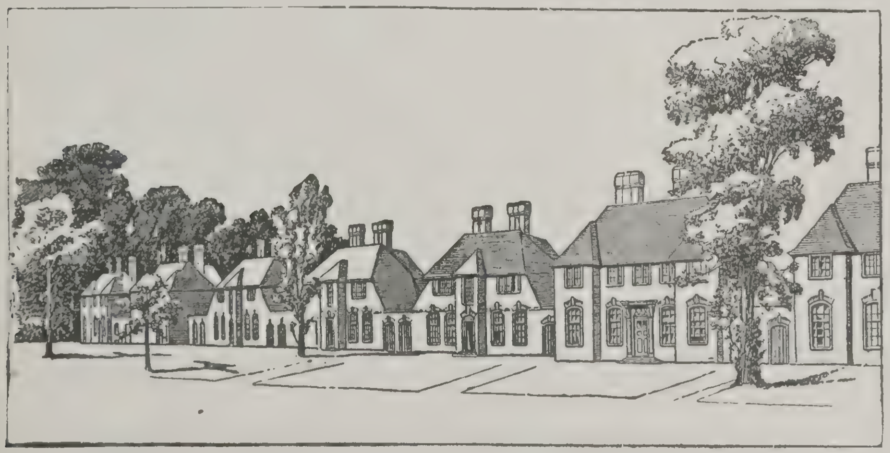
A Kilburn Park. The estate of 20 acres, known as The Grange, in the High Road, Kilburn, is to be purchased and devoted to the purposes of an open space to be called King Edward VII. Park. Towards the purchase money the Willesden Council have agreed to provide £3,000, the Hampstead Borough Council £4,000, and the London County Council, who will be responsible for its maintenance, £5,000.

OBITER DICTA.

Our Lack of Artistic Temperament. Do you think the French would have permitted St. Paul's Cathedral to be hemmed in by gaunt-looking warehouses? Do you think they would have sanctioned the expense of the new triple arch which forms the culmination of the east end of the Mall and allowed it to be hidden from view by a series of minor buildings? Is it possible to believe the French guilty of putting a new bridge across the Thames under conditions making for artistic failure? Other countries can grasp big schemes more readily than we can, and, what is more, the authorities are not so prone to play pranks with approved undertakings. In this country there is a tendency to get frightened about expenditure towards the concluding stages of a big structural undertaking, and the oddest innovations are made in the guise of economy. It was so in the case of the Foreign Office. The allotted sum was running out, and it was thereupon decided to dispense with a few towers. The architect's design was seemingly a matter of small moment.—*Mr. T. E. Colcutt, F.R.I.B.A., in "The Observer."*

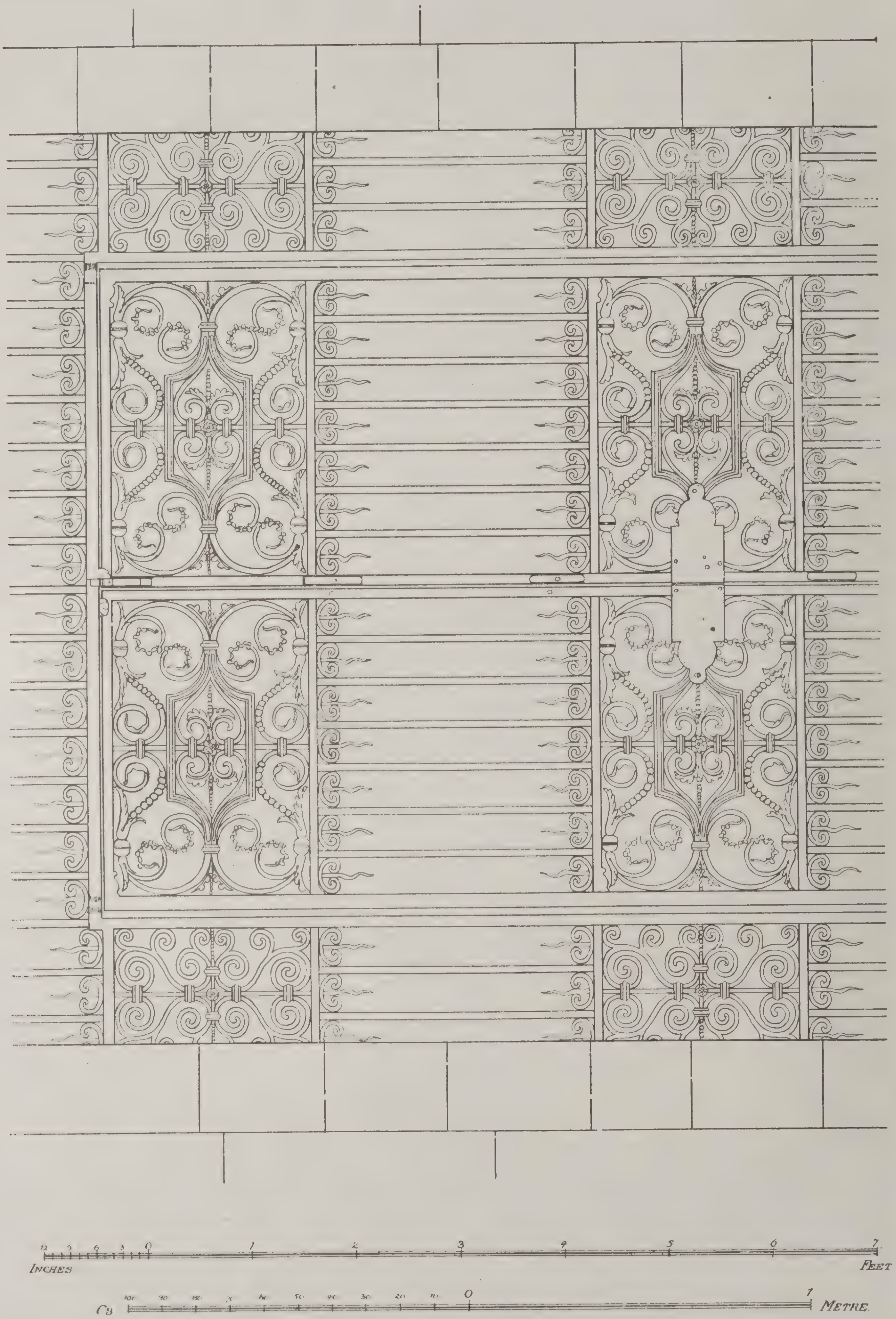
English and French Street Planning. In regard to individual buildings, I think we compare favourably with Paris, but where the French capital is far ahead of London is in the grandeur of her street planning. The difference is so conspicuous that when one gets back to London from Paris it is difficult to avoid feeling that you are returning to a provincial town, and it is greatly to be hoped that the work of making the Mall the most magnificent avenue in London will not be spoilt for want of the finishing touch.—*Professor Reginald Blomfield, A.R.A., in "The Observer."*

Benefits Forgot. That our architects are unrivalled in domestic buildings and in the decorative treatment of interiors is admitted, even by Continental critics, but in regard to grand scale architecture we cannot compare with France, Germany, or the United States. The reason is lack of opportunity. Had the Prince Consort lived this would have been altered. The Prince not only had an eye for the artistic in public buildings, but he realised that art could not be expected to find encouragement at the Office of Works, an excellent but soulless institution. Temporarily, he managed to lift architecture out of the rut by welding architectural art to engineering skill, but at his death the whole business got back into the old groove, and there it has remained ever since.—*Professor Beresford Pite, F.R.I.B.A., in "The Observer."*

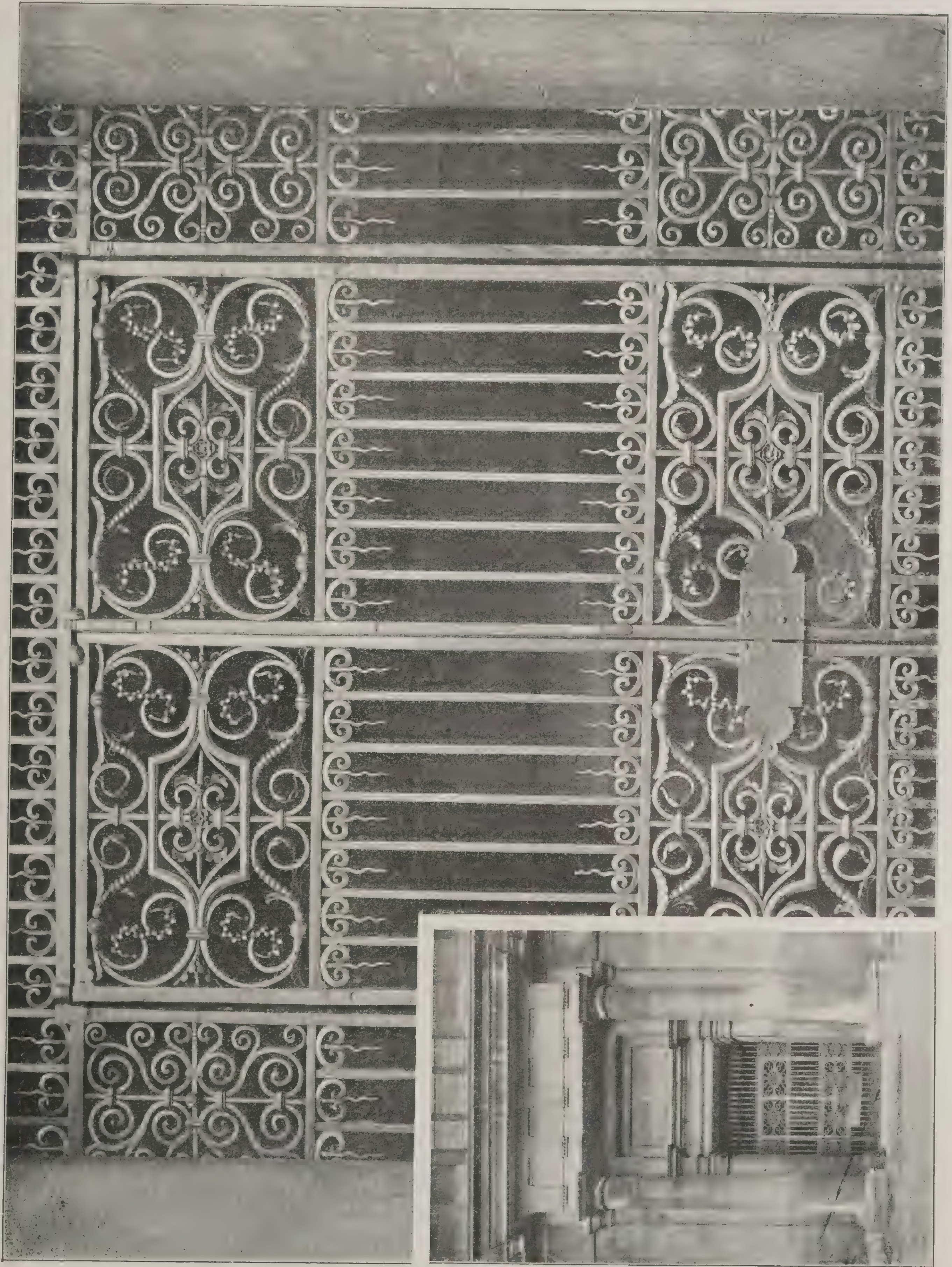


This is a sketch design for an avenue when completed. The foundation stone of the first house was laid last Thursday by the Rt. Hon. John Burns, M.P.

THE ROMFORD GARDEN SUBURB.



DETAIL OF WROUGHT-IRON GATE, RIVER FRONT OF TRINITY COLLEGE LIBRARY CAMBRIDGE. MEASURED AND DRAWN BY JAMES JENNINGS.



In the building accounts of Trinity College Library there is an item of £400 in favour of "Mr. Partridge, the London smith, for three iron gates in cloister and the iron railes in the staircase." This is the only record. The gates were erected in 1691, and are of quite an unusual type of Renaissance ironwork

DETAIL OF WROUGHT-IRON GATE, RIVER FRONT, TRINITY COLLEGE LIBRARY, CAMBRIDGE.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

PALACE OF FRENCH ARTS AND INDUSTRIES.

(*See Centre Plate.*)

After having been for some years left idle, the London County Council's fine centre site between the Strand to Aldwych is to be utilised for a very important project. The French Palace Development Syndicate, Ltd., has secured a long lease of the site from the Council; and the plans, about which there has been considerable discussion, have at last been finally approved. It is now evident that the scheme, when carried out, will result in placing in the heart of the metropolis one of the most extensive blocks of buildings which London will possess; and the activities when the scheme is completed will add considerably not only to the commercial intercourse between England and France, but also to the social intercourse between the people of the two countries.

The total area of the site at the disposal of the Syndicate is 124,000 sq. ft. The principal frontage extends for 650 ft. along Aldwych, the Strand frontage is 450 ft., and the average depth of the site from the Strand to Aldwych is 300 ft. Upon this site the Syndicate is about to erect buildings at a cost of £800,000, and the excavations will commence in a very few weeks' time.

The buildings have been designed by M. Ernest Gérard in the style of the French Renaissance period, and will, it is thought, be one of the best examples of this style in London

The buildings comprise, first, the Palace proper, which will be an imposing building abutting on Aldwych, and will provide a fine *coup d'œil* as one approaches the site from Kingsway. The Palace will contain an immense Hall, in which a permanent exhibition of French arts, including paintings and sculpture, and French industries, including the products of the French colonies, will be housed. There will also be a large Congress Hall with accommodation for about 1,000 persons, which will be utilised for international receptions, banquets, conferences on arts and industries, and similar functions. Accommodation will be provided in the Palace for an important French club which is now in progress of formation. This club will provide a rendezvous for French business men visiting this country and for members of the French colony in London, and combine the functions of a Chamber of Commerce with those of a social club.

The right wing of the Palace will be occupied by a large café-restaurant, containing dining-rooms, grill-room, and billiard-rooms, with winter gardens attached. The control of the restaurant will be placed in the hands of an eminent French chef, and will doubtless become a popular centre for gourmands. Naturally all the adjuncts which make Continental restaurants so popular, such as music, etc., will be found here.

The left wing of the Palace is to be devoted to a Theatre. One or two novelties have been embodied in its design, notably the provision of a special royal entrance and a suite of rooms attached to the royal box for the accommodation of distinguished parties. It is intended to devote the Theatre to the presentation of classical and modern French plays interpreted by the most famous Parisian artists. The decoration of the Theatre will be on a very lavish and beautiful scale.

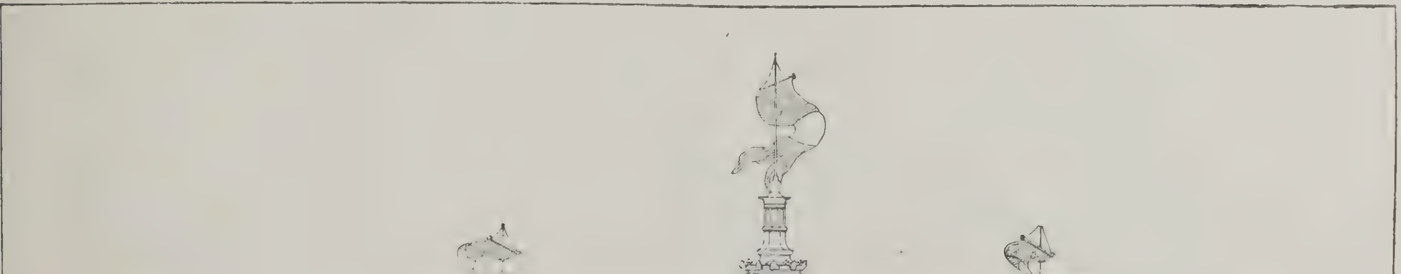
From the wings of the Palace fine buildings will run on the fringe of the site enclosing the whole of the interior from the streets. These buildings, which will be about 80 ft. high, will be devoted to *grands magasins* of the type so familiar to visitors to Paris, to the number of over 100, and above them there will be about 800 suites of offices which will be utilised principally by French firms having interests in England. There is also accommodation for banks and exchange offices, and the basements will be occupied by safe deposits, etc.

The enclosed grounds are to be laid out in exact imitation of the boulevards of Paris. At one end there will be a *café-patisserie* surrounded by a terrace where one may sit as in Paris and take one's refreshment alfresco to the accompaniment of music from a bandstand near by. The shops already referred to will have entrances on the boulevards within as well as on the street without, so that upon entering visitors may well imagine themselves to have left London behind and to be in the Gay City itself, a feature which has already caused the scheme to be known popularly as "Paris in London."

The conception of this scheme is the outcome of the Anglo-French *rapprochement* which has been such a feature of European life since the establishment of the famous Agreement of 1904, and will serve not only to cement England and France closer together commercially and socially, but will also remain a permanent memorial of the *entente cordiale*. In pursuance of this idea the architect has provided for a memorial in the shape of an immense bas-relief, which is to be placed in the tympanum over the main porch of the Palace facing Kingsway. This bas-relief will depict King Edward extending the hand of welcome to M. Loubet, surrounded by a distinguished company, including the present King, the Duke of Connaught, Lord Lansdowne, Mr. Balfour, M. Delcassé, M. Paul Cambon, and others who participated in the *pourparlers* which culminated in the Anglo-French Agreement of 1904.

Naturally, such a vast project as this will occupy a considerable time in completion, but the Syndicate hope to have everything ready for the inaugural ceremony early in 1913. Great interest is being taken in the scheme, and already the Syndicate, which has taken offices overlooking the site at 167, Strand, is receiving numerous inquiries from both French and English firms for accommodation in the buildings which form part of the scheme.

The views given in this issue are of the preliminary designs, and include a reproduction of the elevation to the Strand on this page; and, in the Centre Plate, the elevation to Aldwych, a view in the Principal Hall, and the ground-plan. On the latter it will be noted that the Palace proper and the theatre occupy a centre island site, the plots on either side being occupied by shops back to back, fronting both to the inner roads and also to the surrounding streets. On the East side is situated the café-restaurant. It is stated that building operations will be commenced in October next.



THE FRENCH PALACE OF ARTS AND INDUSTRIES, LONDON: ELEVATION TO THE STRAND. ERNEST GÉRARD, ARCHITECT.

ART ITEMS.

Windows at Ripon. Seven stained glass Roman Catholic church windows have been placed in St. Wilfrid's at Ripon, in memory of the late Marquess of Ripon. They are the work of Messrs. Atkinson Brothers, of Newcastle-on-Tyne.

Wimbledon Common Extension. The Committee are still appealing for further contributions towards the £53,000 required for the purchase of 172 acres which can now be secured. Just over £11,000 has at present been subscribed, and about 13 acres have been purchased at a cost of £7,000.

Du Maurier Drawings for the Nation. The Victoria and Albert Museum has acquired a group of drawings by the late George du Maurier from the Exhibition of the famous "Punch" artist's work which is now being held at the Leicester Galleries, Leicester Square, under the title of "'Society' in late Victorian days." The Exhibition was to have closed at the end of this month but owing to its continued success Messrs. Brown and Phillips have decided to keep it open until the middle of August.

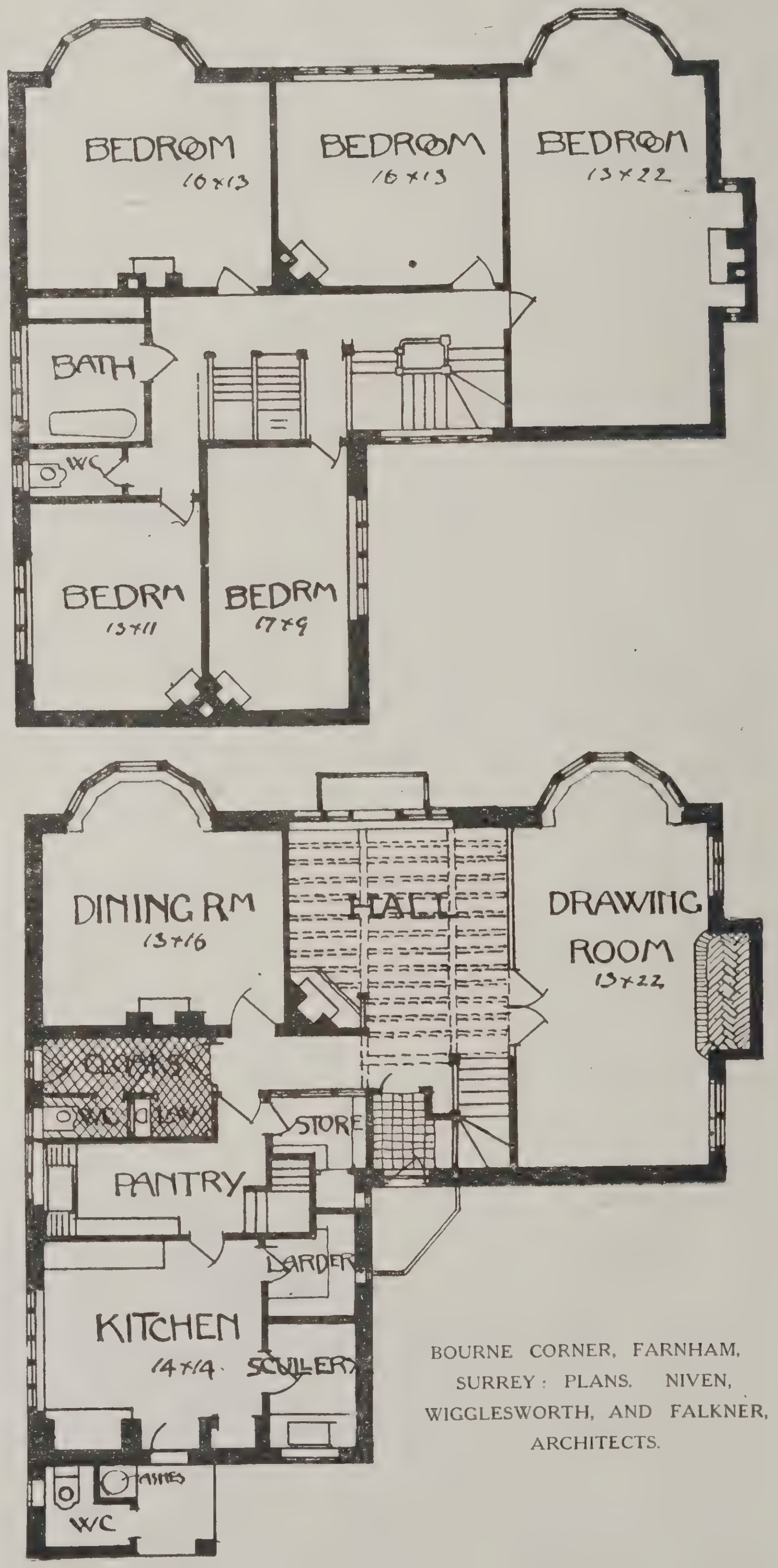
Maumbury Rings. The Maumbury Rings Excavation Committee have met at the Dorset County Museum, Dorchester, to make arrangements for the third instalment of digging, for which the leave of the Duchy of Cornwall, the owners, has been obtained. It was resolved to begin work on Monday, August 29th, and to ask Mr. H. St. George Gray, of Taunton, the director of the excavations, to visit Dorchester on July 30th and confer at the amphitheatre with a sub-committee, consisting of the chairman (Dr. H. Colley March), the hon. secretary (Captain John E. Acland), the Rev. C. W. Whistler, and Messrs. Charles S. and W. de C. Prideaux. It will then be decided what portions of the Rings will be investigated this third year. The cost of last year's excavations was £57. The Dorset Field Club, who are co-operating with the British Archæological Association in promoting the examination of Maumbury with the spade, have appointed a standing Earthworks Committee for the systematic investigation of the ancient earthworks of the county—prehistoric Roman, and *post*-Roman. Dr. Colley March has been appointed chairman, and the Revs. C. W. Whistler and C. W. H. Dicker joint hon. secretaries.

William Pitt's Statue in Hanover Square. A "Morning Post" correspondent raises the question of the responsibility for the preservation of the site and sight of monuments. Municipal responsibility, he holds, should concern itself not alone with the material welfare of the citizens, but also with their æsthetic culture. With reference to the statue of William Pitt in Hanover Square, he says that here we have a really dignified statue admirably placed; it looks down a broad sloping roadway towards an historic church, and he recalls the lines of Macaulay (looking northwards from the steps of the portico of the church):

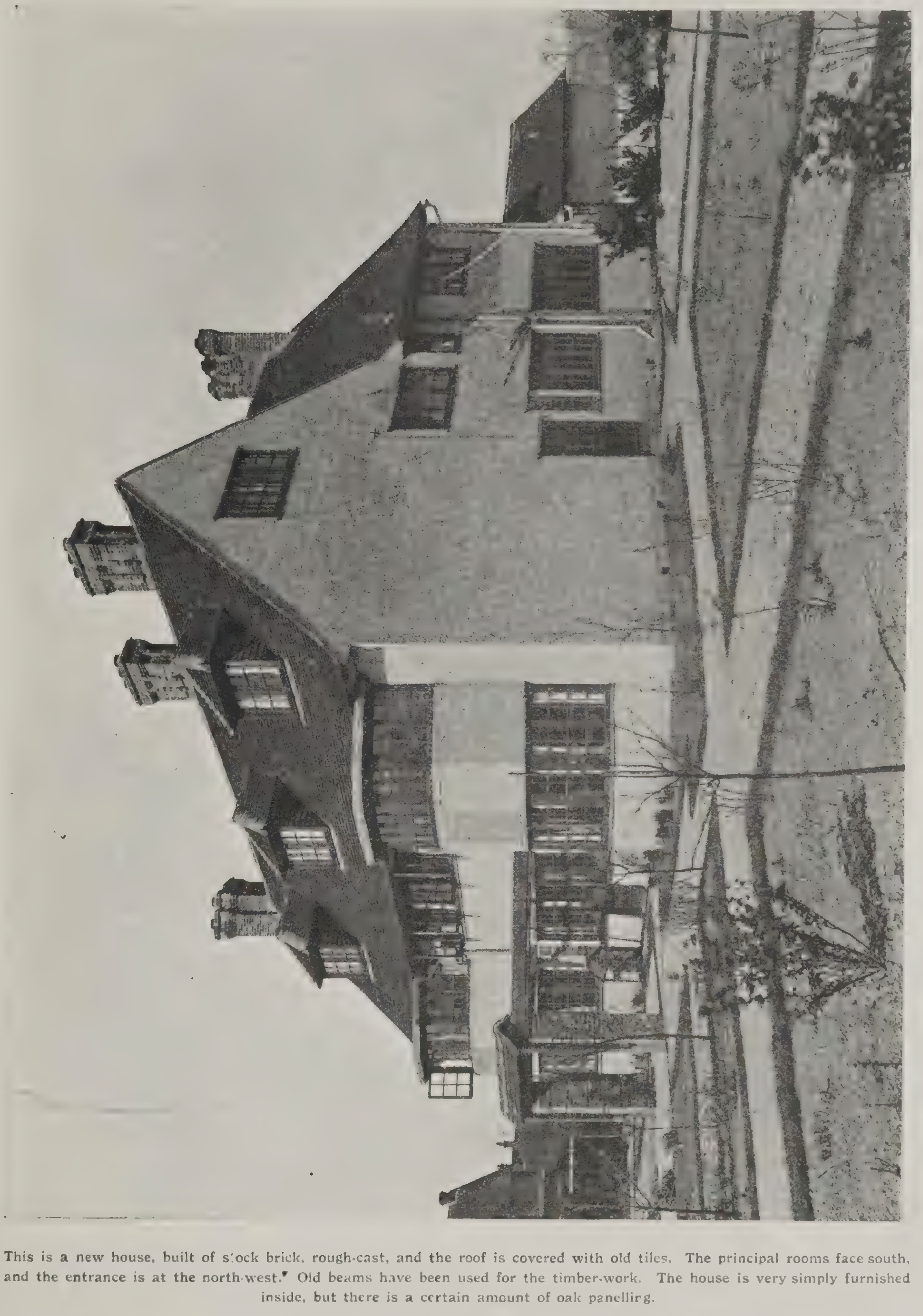
> "To where I see with outstretched hand,
> Majestic, thy great kinsman stand,
> And half unbend his brow of pride
> In welcoming so fair a bride."

The bride mounting those steps and seeking the comfort of that welcome, the correspondent (Mr. Harrington Sainsbury) declares, will now see the great globe of an electric street lamp entirely obliterating the head of Pitt, whilst the standard of the lamp will be seen to bisect the monument. What is the use, he asks, of selecting a fine site, in which selection no doubt Chantrey must have been consulted, and then making nought of all the care and attention which has been bestowed? A lamp at the south-eastern corner would serve every purpose of illumination, and at the same time would preserve a fine setting to a noble statue.

Buckingham Palace. The Government (says "Truth") do not see their way to spend any money on the beautification of Buckingham Palace. And up to the present nobody has responded to the suggestion recently made in that paper that the re-fronting of this edifice should be carried out by a national subscription as a memorial to King Edward VII. Under these circumstances it may not be out of place to mention a suggestion made to "Truth" the other day by a correspondent—namely, that coastguards should be set to work to whitewash the walls and tar the roof and chimneys. The building would then at least be clean, the cost would not embarrass the Chancellor of the Exchequer, and the decorative scheme would have associations which might not be unpleasing to his present Majesty.



BOURNE CORNER, FARNHAM, SURREY: PLANS. NIVEN, WIGGLESWORTH, AND FALKNER, ARCHITECTS.



This is a new house, built of stock brick, rough-cast, and the roof is covered with old tiles. The principal rooms face south, and the entrance is at the north-west. Old beams have been used for the timber-work. The house is very simply furnished inside, but there is a certain amount of oak panelling.

BOURNE CORNER, FARNHAM, SURREY. NIVEN, WIGGLESWORTH, AND FALKNER, ARCHITECTS.

FIRE PREVENTION NOTES.

Fires at Country Houses. The destruction, by fire, of Menlough Castle, Galway, reported in the papers of Wednesday last, is one more illustration of the dangers attendant in country houses lacking ready means of escape and the provision of proper means of fire prevention. In the present instance the fire was attended by the lamentable loss of three lives, two of maidservants who were fatally injured by leaping from the roof to the ground, a distance of 40 feet, and the third that of the invalid daughter of the owner, who perished in her bedroom, where the outbreak is presumed to have occurred. The loss of life necessarily overshadows the other terrible results of the fire, the destruction of the whole of the valuable contents, including the valuable furniture, armour, pictures, and other treasured heirlooms, only the bare walls of the building, which were in some parts eight feet thick, withstanding the flames. Menlough Castle, in part, dated from the thirteenth century, and was a magnificent, creeper-clad pile of buildings. We have frequently urged before in these columns the necessity of overhauling these historic residences, and bringing them up to modern standards in fire-prevention; and though this may involve considerable trouble and difficulty in the case of old mansions which contain fine old panelling and other fitments, it is a duty not to be ignored. The provision of ready and adequate means of escape is most obviously necessary in old and rambling piles of buildings. It is hardly possible to say more than we have already said on the question of fire-prevention; but the fires that occur from time to time give point to the immediate necessity of providing against outbreaks that may cause irreparable damage.

Fire at a Belfast Hotel. At the same time that Menlough Castle was burning, an hotel in College Square, Belfast, was also destroyed, three people being suffocated and several others being injured. The building was an old house, said to have been the birth-place of Lord Kelvin, and was largely of wood; and the fire, which started on the ground floor, spread, therefore, very rapidly. Many of the inmates when aroused opened their windows; the draught thus occasioned further aided the fire, and drove the flames up the house. The staircase soon collapsed, and the escape of a number of the inmates was cut off. One visitor and his wife escaped from the third floor by means of a rope made by knotting the bedclothes together; three others jumped from the windows, two being seriously injured; and three others, a visitor and two male employees, were suffocated in the upper rooms. From the description of the building given in the Press, it seems doubtful if it was at all fitted, from the fire point of view, for the purposes of an hotel, as apparently there was no escape staircase or additional means of egress, and when once the ordinary staircase was destroyed escape was cut off. Add to this the fact that the building was largely composed of wood, and it becomes evident that the dangers from fire were very grave indeed. The question whether any but approved fire-resisting structures should be permitted for use as hotels is one that will doubtless be raised as a consequence of this fire.

A New Use for Sprinklers. An amusing anecdote is related in the June issue of "The Sprinkler Bulletin," by which it appears that two burglars broke into premises in Farringdon Road, E.C., and set to work to cut out the lead piping. They appeared to have used a light for their work, and the light was held too near one of the sprinkler heads, with the result that their endeavours were very considerably damped. Moreover, as the sprinkler opened the alarm gong rang out, and, our contemporary adds: "Unaccustomed to undiluted water in any form, and evidently scared to death, Bill Sykes and his companion decamped, leaving their professional implements, the cut lead piping, the fused sprinkler, the alarm bell ringing, and the sprinkler pouring forth copious supplies of water to tell their own tale."

Fire-resisting Construction and Insurance. In referring to the new fire-resisting factory of a talking machine firm, "Insurance Engineering," of America, says:—"About ten years ago the company began to manufacture a new device in a small way. Early in its history the enterprise was hampered by lawsuits over patents, diverting business capital from the ordinary channels to costly litigation. Before the business was five years old, the factory was completely destroyed by a fire that started in another plant. Apparently this was a turning point. The lawsuits having been won, the company called upon the underwriters for suggestions for construction and equipment of a new plant which could not be destroyed by fire, agreeing to pay whatever such a plant might cost. The result must be satisfactory to the far-sighted corporation. The business has not been interrupted by any fire since its reconstruction; and the insurance expense item has been reduced from about 1.25 dols. per 100 dols. of insurance to about 15 cents. The saving is due to modern fire protection engineering methods. Fire-resisting construction was adopted for the buildings. Interior doorway openings were protected by standard fire doors to prevent the spreading of fire from room to room. Openings in exterior walls were protected where necessary to prevent the passage of fire through them. The entire premises were equipped with apparatus for extinguishing fire automatically and manually. The company provided itself with a generous private water supply. Employees were organised into private fire companies and drilled in the use of the appliances. In other words, ever since it adopted modern methods of protecting itself against fire the company has been prepared to fight fire independent of the public fire department of the city in which its factory is located." This description is valuable for the information it gives of the fire-protection of a modern factory; but it omits here to state (though the fact is given in another part of the paper) that the buildings are constructed of reinforced concrete. The diminution in the amount of the insurance rate is very notable, and should not be without its lesson to business men in this country.

Fire Stations of Concrete. Among the improvements which are shortly to be carried out by the fire authorities of New York is the provision of twenty-five new fire stations in the Manhattan and Broux districts, and ten in Brooklyn. The buildings are to be of a new and distinctive design, all alike, and built of concrete, so as to make them absolutely fire-resisting. Thus the new stations will have a distinctive type of building.

Insurance on the basis of Inflammability. The fire insurance on structures of the United States reclamation service is carried out on a co-operative basis of a somewhat unusual character, it being the policy of the Supreme Government to carry its own risks. The scheme is to apply the standard underwriting formulæ more particularly to the needs of the reclamation service, computing the risk on each insurable item of property. Each building is given a series of risk debits depending on its construction, occupancy, exposure, and other conditions; it is also given a series of credits due to the extent of the fire protection provided, the non-inflammability of its valuable contents, and the rapidity with which they could be removed. Each material condition affecting the status of the risk is given an appropriate weight, and the debit weights are computed on a unit basis. The credits are computed on a percentage basis, and their sum, subtracted from the sum of the debits, gives a remainder which is used as a multiplier, with the value of the building and its contents as a mutiplicand, to obtain the sum of risk for the whole structure. The total of all these weights on a project is the unit weight for that project, and its ratio to the total weights of all the projects is the basis on which its proportion of the 80 per cent. of fire losses for the year is computed. This method may be of interest to other organisations on which the burden of fire insurance rests heavily, which may find it worth while to become familiar with this system of co-operation.

SOCIETIES' REPORTS.

The Institution of Municipal Engineers.

At a meeting of the Council held on July 23rd the following applicants were recommended for admission:—

To Membership:

T. G. Menezes, Chas. J. Conquest.

To Associate Membership:

Chas. Lill, W. H. Sandoe, N. L. Mehta, H. A. Brazier, Chas. Newell, J. N. B. Bhasker.

To Studentship:

H. S. Cowen, J. T. Brown, W. F. Mason, H. W. Lovelock.

The following students were recommended for admission to the *associate-member class*:

J. H. Moore, R. W. Burr.

Under the new by-laws these elections will be ratified at the next Council meeting if no written objections are, within fourteen days, lodged with the secretary.

From the applicants recommended for admission at the last Council meeting, four members, six associate-members, and one student were elected, and four students were transferred to the associate-member class. The report of the Examination Board was received and adopted Letters from Messrs. Aveling and Porter, and from the Improved Wood Pavement Co., Ltd., were read, and the secretary was instructed to arrange for visits to their respective works. Nomination papers for Council election may now be obtained, and members are requested to note that these must be sent in before August 20th.

The Surveyors' Institution.

The following are winners of scholarships granted by the Institution:—

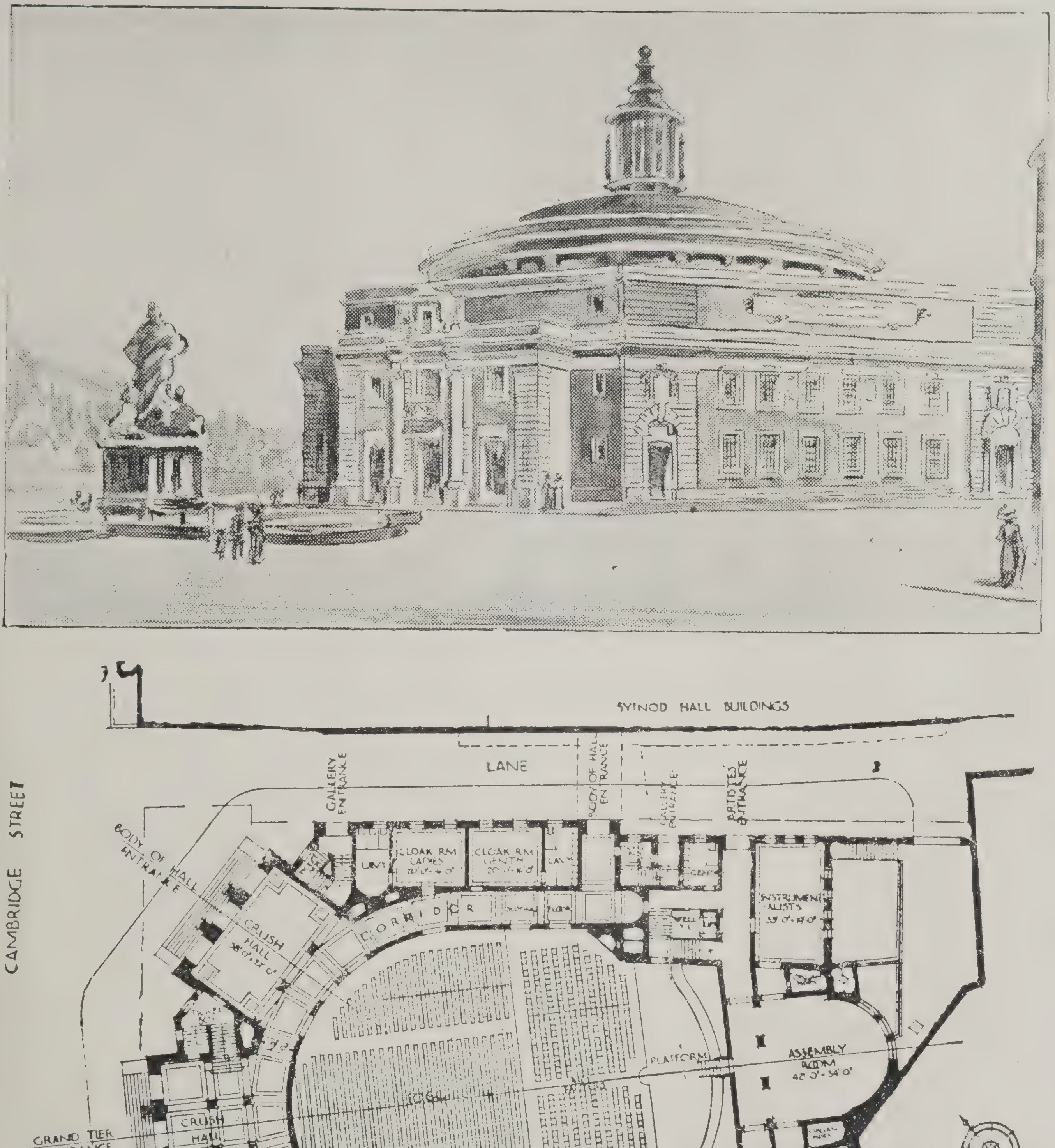
Cambridge University Scholarship of £80.—Tenable for three years. P. D. Sturge, of Fern Hollow, Stoke Bishop, Bristol.

Penfold Scholarship of £60.—Tenable for three years at any University. C. F. Hill, of Broad Lane, Hawarden, near Chester.

Scholarship of £50.—Tenable for three years at any University. G. O. Searle, of 35, Macaulay Road, Clapham Common, S.W.; R. E. Stradling, of 5, North Street, Bedminster, Bristol.

Northern Architectural Society.

A party, consisting of twenty members of the Northern Architectural Association, visited the Thirsk and Helmsley district on July 15th. Arriving at Thirsk station at 11 a.m. they were met by a motor char-a-banc of the North Eastern Railway Company, and driven via Coxwold, Byland Abbey, and Wass Bank to Helmsley, and thence to Rievaulx Abbey. Returning to Helmsley, the party proceeded via Oswaldkirk, Ampleforth, and Newburgh Priory to Thirsk. The chief object of the party was to inspect the noble ruins of Byland and Rievaulx Abbeys, but in addition to these, they also visited the parish churches of Coxwold, Helmsley, Oswaldkirk, and Thirsk. On their return to Thirsk the members dined at the Fleece Hotel, after which they entrained at Thirsk Junction.



Note. The orchestra and organ is carried over the assembly room shown on the plan.

THE USHER HALL COMPETITION: THE ACCEPTED DESIGN. STOCKDALE HARRISON AND SONS AND HOWARD H. THOMSON, JOINT ARCHITECTS.

CORRESPONDENCE.

[*The Editor declines responsibility for the statements made or opinions expressed by correspondents.*]

The Completion of the Mall.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In your issue of July 20th you have a note to the effect that the new thoroughfare from the Mall to Charing Cross is expected to be opened in about a month's time.

Is it too late to expect that the Office of Works, or whatever department is responsible in the matter, will see fit to widen the entrance at the Trafalgar Square end by pulling down the buildings on either side, which at present mar what would otherwise be a fine improvement?

One has only to stand inside the Park and look outwards through Sir Aston Webb's fine triple archway to see how hopelessly spoiled the whole effect will be unless these buildings are removed.

Surely it is not too much to hope that a great country erecting a memorial to a great Queen will see fit to finish off in a worthy and fitting manner an improvement so excellently begun, and by removing a collection of ramshackle old buildings from one side and a bank of no architectural pretensions whatever from the other open up the fine entrance to the processional roadway in a dignified and proper manner.

London. H. O. CRESSWELL, F.R.I.B.A.

Licentiate R.I.B.A.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I have read with great interest the letters published in your journal with reference to the above, and should like, if I may be permitted, to make one or two suggestions. I think before taking steps to obtain a Registration Bill, it would be advisable to get a Bill through Parliament to prevent builders erecting buildings without the professional assistance of a qualified architect. The question now to be answered is: What constitutes a qualified architect? My reply is, like that of many of your readers, "One who has satisfactorily served a term of at least three years' articles with an architect in practice. I may add that I consider anyone who can produce his articles satisfactorily endorsed should be elected a Licentiate of the Royal Institute of British Architects, and be entitled to affix Licentiate R.I.B.A., to his name. These suggestions, if carried out, would, I am sure, greatly benefit the profession.

Brondesbury. K. K.

The Decline of Technical Education.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Your editorial note under the above heading in this week's issue draws attention to a matter of great importance to all builders and their employees throughout the country. It is to be feared that Sedgley is not the only place where classes have been closed for want of students. As a teacher of over twenty years' experience in various parts of the London district, it has been my privilege to deal with large numbers of young men engaged in all the leading branches of building industry; and the experience thus gained leads me to offer a few observations upon the cause of the evil referred to. In your article it is pointed out that very little is done by employers generally, by way of inducing their employees to make themselves proficient in their respective trades. Work secured under modern conditions of tendering demands that in order to show a profit it must be pushed through in the least possible time. As a consequence, learners are not wanted, the time of skilled workmen being too valuable to spend in teaching beginners The result is that lads willing to learn are discouraged, and a large number drift into indifference, if not positive aversion, and finally incompetence. Returning home from work, tired and discouraged, the young aspirant is advised by some well-meaning relative to join some classes at the nearest Polytechnic. He goes, perhaps willingly at first. The work is difficult, even uninteresting, and soon finding that additional homework is expected of him, is it surprising if he yields to the more alluring amusements?

But, presuming our student to be made of sterner stuff, we find him resisting counter-attractions, and patiently sticking to his classes two or three nights per week for perhaps one or two sessions. He acquits himself well, passes his examinations, and receives his certificates. By this time his initial difficulties have been surmounted, and soon finding that he can use his knowledge to some purpose in life, he has started upon the high road which leads to ultimate success. He may, or he may not, subsequently win scholarships and gain prizes; but in either case habits of study and application have been formed, and the education institution has not failed in its object. The chief difficulty occurs, however, with those lads who cannot be induced to overcome their inherent lethargy. At present, compulsory attendance at evening classes cannot be enforced; and, left to his own unconcerned indifference, the beginner only too often drifts into the habit of carelessly or even viciously wasting his evenings.

In the current issue of your paper is given a lengthy list of prizes, studentships, and other awards gained at the Architectural Association Day School. Valuable prizes and studentships are also given in many of the University Colleges, and by the Royal Institute of British Architects to young men training as architects. Turning to the evening classes organised by the various county councils for the benefit of artisans, we find that, excepting a very few medals and prizes offered by the City and Guilds, and by the Board of Education, there are practically no prizes what ever which an ordinary student can compete for. The medals and prizes just referred to are, in any given subject, easily enumerated upon one's fingers, and being open to competition by students throughout the whole country, it will be seen that the chances of any individual student are extremely small—so small, in fact, that only the very élite of our largest and best taught classes have practically any chance of gaining an award.

It seems to me that some stimulus to the beginner is needed. A few prizes of small value offered to each class would, I think, produce results far outweighing their original cost. Having had opportunities of teaching classes where a few prizes have been offered, and of comparing these with precisely similar classes where no prizes are given, I can say without hesitation that the work done, the results obtained, and the whole tone of the class have been undoubtedly in favour of prizes.

The County Councils say they have no power to award prizes with funds derived from the rates. My reply is that if the money already spent in technical education is not to be largely wasted there must be either some form of compulsory attendance, or some scheme of prizes which shall secure larger and more regular attendance at our evening classes. I think the rivalry and emulation promoted by competition for prizes is far healthier than the morbid resentment which would be engendered by any form of compulsion and therefore unhesitatingly support the latter alternative.

Again, if prizes are found necessary or desirable in the case of young architects, many of whom have had the advantages of a liberal education, and who are supposed to be alive to their own future interests, how much more necessary are they in the case of young bricklayers, carpenters, and other artisans whose primary education is only too often seriously defective, and who are also frequently blind to their own best interests; and who, moreover, are expected to give their evenings to study after a hard day's work in the shop or on the building?

Surely, the raising of a local prize fund should not be an impossibility. I have known cases where teachers themselves, convinced of the importance of this feature, have offered prizes. If private generosity fails, the various trade organisations in each district might be approached, and as a last resource a small increase in the entrance fees paid by students would easily cover the cost of examination fees and prizes.

Plumstead. HAROLD BUSBRIDGE.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In your issue of to-day's date, referring to the seeming apathy of the students attending the technical classes in this country, you appear to consider the students alone to blame, but in many instances the poor attendance at these classes is due to the total incapacity of the teachers, making it sometimes necessary for a student who desires to pass the examination to absent himself in order to find time to study privately. Most pupils at these classes are engaged during the day, and if they wasted their time listening to incompetent teachers they would pick up more of the "way not to do it" than of the matters the classes are instituted to provide. In the provinces at least the teachers of these classes are usually appointed according to the influence they can bring to bear to secure the post, and with no regard whatever to their suitability for the position.

Some years ago I attended a large class of this kind where the master took the advanced class one night and his "assistant" (getting about one-fourth the remuneration) the elementary, and on the following night the masters exchanged classes. Before the session was half over the assistant had a full attendance almost invariably, and the master would lecture to almost empty benches! This assistant had made application for the post at the same time as the other man, but he was not able to bring to bear the same amount of influence, and so the pupils had to suffer.

I know of many cases where students have deliberately absented themselves because they might as well be asleep as listening to the incompetent "instructor." I also know one man at present holding a post as head teacher at a technical school, who makes a very good living "coaching" students for an examination he has himself failed to pass on more than one occasion.

If the Education Committees who are deploring the apathy of the young men in their districts would always make quite sure that the instructors they have appointed knew their business at least as well as the students they are about to instruct, we would hear much less of the "Decline of Technical Education."

A STUDENT WHO HAS SUFFERED.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In your last issue, you touched upon a subject which would well repay further investigation, viz., the technical education of the artisan.

The average employer of building operatives does not seem to appreciate the fact that an artisan who is grounded in the theory of construction, and has a knowledge of the work of other trades, is better fitted to perform his own particular function than the "rule of thumb" man. You will invariably find that a man who will sacrifice his leisure time to study is a mechanic skilled above the average, and is capable of a better return for his employers' money.

Yet, in spite of all this, the positions of trust and authority upon a building are only too often filled by men who, while professing a profound contempt for the "theoretical men," do not hesitate to exploit their knowledge, forgetting that these men have the practical experience in addition to their other knowledge. The primary object of an artisan's study is to improve his position; but you find that no value is placed upon the certificates which show the measure of proficiency to which he has attained. Thus I myself, although possessed of qualifications which should prove my fitness for a responsible post, am still

A BRICKLAYER.

NEW BUILDINGS.

PROPOSED.

Barnet.—The U.D.C. have obtained the sanction of the L.G.B. to the borrowing of £2,500 for the purchase of land upon which it is proposed to erect workmen's dwellings.

Batley.—The Corporation has approved the following plans:—Six houses in Southbank Road, Carlinghow; enlargement of house in Thorneycroft Terrace, Staincliffe; addition to premises in Bradford Road; conveniences for Staincliffe Church of England School; two houses in Gladwin Street; three houses in Fox Street, off Taylor Street; house in Beaumont Place, Staincliffe.

Bridlington.—At a recent meeting of the Bridlington Rural Council, the East Riding County Council scheme for the establishment of a sanitoria at Beverley and Kilham for infectious diseases was considered, and it was unanimously decided not to participate in the scheme, but to erect an isolation hospital for the Bridlington district.

Bury St. Edmunds.—At a recent meeting of farmers at Bury St. Edmunds, it was resolved to take steps to establish a bacon factory in West Suffolk, and to carry it on as a limited liability undertaking, the capital outlay being estimated at about £20,000.

Cardiff.—The question of a new fire station for Cardiff was under discussion by the Watch Committee at a recent meeting, when a joint report by the city engineer and the head constable was considered. It was estimated that the proposed chief fire station in Westgate Street would cost £13,066 5s. 7d., plus the value of the land, which was fixed at £21,400. For the proposed subsidiary station at Beresford Road, Roath, the total cost was estimated at £5,666 3s. 9d., while for the proposed subsidiary station in Wellington Street, Canton, the estimated cost was the same. A motion to affirm a previous resolution passed by the Committee that a new station be built in Cathays Park at a cost not exceeding £15,000, and that competitive designs be advertised for, was carried.

Edinburgh.—A motion, dealing with the utilisation of the old mansion-house in Saughton Park, was considered by the Public Parks Committee of Edinburgh Town Council at a recent meeting. The committee recommended that the building should be thoroughly repaired; that the offices and walls on the ground facing the bandstand, which are not part of the mansion, should be cleared away; and that the area should be converted into tea gardens, with lavatory and cloakroom accommodation, at an estimated cost of £1,000. The question of the utilisation of the house was delayed, and a sub committee were appointed to consider the preservation of the features of the ancient building.

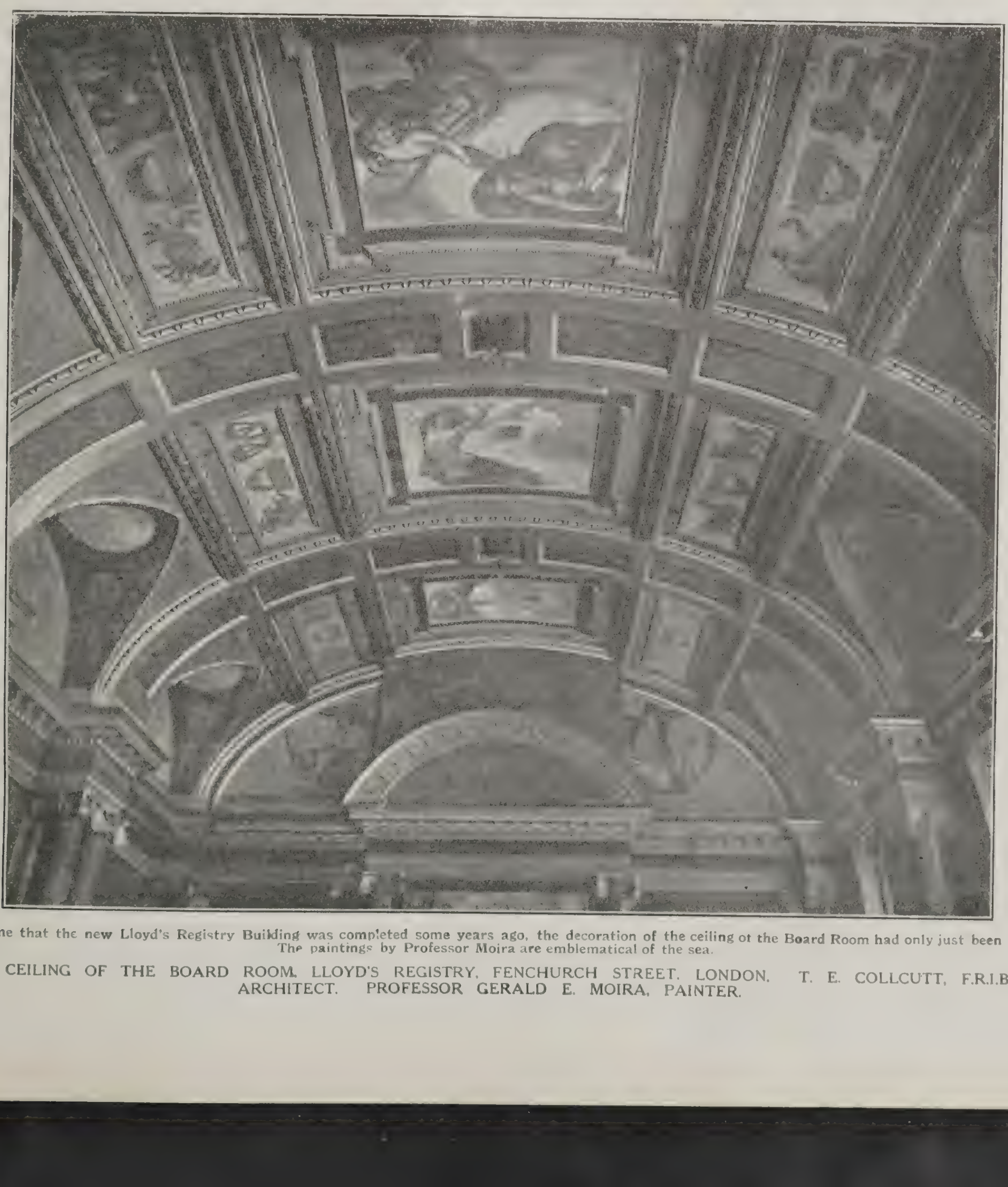
Farnborough (Hants).—The Town Council has approved the following plans:—House in Reading Road; mission church in Queen's Road; additions to National Schools in Farnborough Street; house in Ashley Road.

Leeds.—At the monthly meeting of the Council of the Leeds University a letter from the clerk to the Clothworkers' Company was read intimating that the Court of the company had voted £5,000 for an additional building to complete the front elevation of the Clothworkers' wing in College Road, and to provide extensions necessary for teaching the French system of worsted combing, drawing, and spinning. This gift is an addition to the £70,000 previously granted to the University on capital account.

Lincoln.—The Corporation has approved the following plans:—Additions to Lincoln Laundry, Altham Terrace; 2 houses, Yarborough Road; 2 houses, Sausthorpe Street; additions to dwelling-house, the Grove; additions, etc., 5, Pottergate; 18 houses, McInnes Street; house, Ellesmere Avenue; 4 houses, St. Catherine's Grove.

Liverpool.—An agreement has been made between the Midland Railway Company and the Liverpool Corporation, under which a large block of property beyond the Adelphi Hotel is to be leased to the railway company for 999 years. The scheme, which will come before the City Council, has reference to the construction of an extensive hotel at a cost of about £500,000.

London.—At the annual meeting of the Aerial League of Great Britain, which recently took place, it was stated that the league had decided to push forward details for the establishment of a practical school of aeronautics, to be called the Rolls Memorial School, and that negotiations were in progress for the acquisition of a site near London for the flying ground and building.



At the time that the new Lloyd's Registry Building was completed some years ago, the decoration of the ceiling of the Board Room had only just been begun. The paintings by Professor Moira are emblematical of the sea.

THE CEILING OF THE BOARD ROOM, LLOYD'S REGISTRY, FENCHURCH STREET, LONDON. T. E. COLLCUTT, F.R.I.B.A., ARCHITECT. PROFESSOR GERALD E. MOIRA, PAINTER.

London.—The London County Council, by a small majority, has adopted a recommendation by the Housing Committee to apply to Parliament for powers to enable the Council to lease part of the White Hart Lane estate for development on the lines of a garden suburb.

London, S.E.—The Bishop of Southwark is appealing for a total sum of £40,000, of which £7,000 will be devoted to the restoration of certain portions of the fabric of Southwark Cathedral, that stand in urgent need of reparation, and did not come within the scope of the recent restoration and rebuilding of the nave. The proposed works will be entrusted to the superintendance of Mr. J. Oldrid Scott, F.R.I.B.A.

London, W.—The Paddington Guardians have instructed Mr. E. Howley Sim, architect, 14, Norfolk Street, W.C., to submit an approximate estimate of the cost of adapting a portion of the administrative block of the infirmary for the purpose of isolation wards.

London, S.W.—The designs of Mr. H. P. Burke Downing, F.R.I.B.A., have been accepted for the erection of a new church and parish hall in the vicinity of Narbonne Avenue and Hambalt Road, Clapham, as a memorial to the late Canon Greene, for many years Rector of Clapham. The church has been designed in the thirteenth-century style, and will provide total seating accommodation for 600 persons. It is arranged with a wide nave and an aisle of equal height and almost equal width, whilst the line of the roofs is unbroken internally and externally from west to east. The choir and sanctuary are a continuation of the nave, and of the same width without any intervening chancel arch. The distinction between sanctuary and choir will be marked on the inside by a double rib of the barrelled roof and carved bosses, and externally by a lead cross, thus securing an effect of great length. The church is to be built of picked purple-brown Crowborough bricks and Chilmark stone, with Caen stone internally, and will be heated on a low pressure hot-water system. The proposed parish hall can seat on the ground floor 254 persons, and its principal entrance faces Hambalt Road. The upper hall is approached by two staircases with external entrances, and is of the same size as the lower hall. The estimated cost of the Church is £5.630, and of the parish hall £2,115, thus involving a total expenditure of £7,745. The designs are those selected from a competition, which was limited to twelve invited architects, Mr. Temple Moore, F.R.I.B.A., being the assessor.

Merthyr Tydfil.—The Corporation has decided to apply to the Local Government Board for sanction to borrow £15,000, to cover the cost of a contract to convert Cyfarthfa Castle into a municipal secondary school.

Normanton. — The Normanton Urban Council's proposed housing scheme to erect 38 workmen's dwellings at an estimated cost of £8,250 has not been sanctioned by the Local Government Board. The objections are that the site is unsuitable; that the proposed rents are too high; and that the scheme would be a charge to the ratepayers which, in future, would probably increase. The Board are prepared to consider a modified scheme, and the Council intend to reconsider the matter.

Scarborough.—At the Scarborough Town Hall, Mr. Edgar Dudley, F.S.I., Inspector of the Local Government Board, has held an inquiry into the application of the Corporation for sanction to borrow £2 625 for the purchase of property for the widening of St. Thomas Street.

Sketty (Swansea).—A Vicarage is about to be erected at Sketty, and Mr. Glendinning Moxham, F.R.I.B.A., Swansea, has been instructed to prepare the plans.

Torquay.—The Town Council are promoting a scheme for the erection of a Town Hall, with municipal buildings and offices, at a cost of £30,000, and the erection of a pavilion at the junction of Castle Circus and Lymington Road, at a cost of £16,000. In connection with this scheme, Mr. W. R. Hooper, M.I.C.E., on behalf of the Local Government Board, has held an inquiry into the application of the Council for sanction to a loan of £45,000 for carrying it out. The inspector also inquired into an application in connection with the electric light works extension.

IN PROGRESS AND COMPLETED.

Aldershot.—The King has sent a donation of £1000 to the Aldershot Churches Extension Fund. Owing to the influx of population, caused by the development of the camp in the last few years, it has been found necessary to build a new church, and to double the accommodation of the old parish church. Nearly £10,000 is required for these undertakings, and about £1,000 remains to be collected. The new church was completed in 1907, and the first stone of the parish church extension was recently laid by Lady Wantage.

Bootle (Lancs.).—The new Metropole Theatre, situate in Stanley Road, Bootle, is now in course of erection, and will provide accommodation for 2,500 persons. The architects are Messrs. Havelock, Sutton and Sons, of Liverpool, and the builders Messrs. J. and G. Chappel, of Walton. It is proposed to complete the building by the end of the present year.

Colwyn Bay.—The building of the pavilion of wood and iron which is to accommodate the Welsh National Eisteddfod at Colwyn Bay in September is being rapidly proceeded with.

Crynant (Neath).—The Bishop of Llandaff has consecrated the new church of St. Margaret, which has been erected at a cost of £2,697, in the early English style. The church consists of a nave and aisles, which afford accommodation for 275 worshippers. Internally the arcading and chancel arch have been executed in Bath stone, and the roof treated in wrought open timber work in pitch pine. The building is heated by a low pressure hot water system. Mr. J. Cook Rees, Neath, is the architect, the contractor being Mr. Henry Smith, of Kidderminster.

Forest Town (Mansfield).—A commencement has been made with the erection of the new Parish Church, from the designs of Mr. Louis Ambler, F.R.I.B.A., London. The building will consist of nave, south aisle, chancel, sacristy, clergy vestry, choir vestry, and organ chamber, and will provide seating accommodation for about 320 persons. It will be built of Bulwell stone, lined inside with brickwork, and the dressings will be of fine-grained Weldon stone. The pillars will be octagonal in shape, and the internal stonework will be of Ancaster stone. Broseley tiles will be used for the roofs, and the western end will be surmounted by a bell turret. The building will be heated by a hot-water apparatus. Messrs. Chas. Pallance and Son, Mansfield, have secured the building contract, and the total cost is estimated to amount to about £3,800.

Gorleston. — The new Congregational Church, erected at a cost of £1,500, has been opened by the Mayor of Gorleston. It takes the place of an older building, which was condemned as unsafe, and some of the old walls have been utilised in the new structure, which is of brick roofed with tiles. Mr. G. Scott Cockrill was the architect, and the contractors were Messrs. Sheen Brothers.

Knaresborough.—The foundation-stone has been laid of the new Urban Council offices, which are in course of erection in the Italian style, from the designs of Mr. Arthur Hiscoe, of Leeds. The total cost of the building is about £3,500, and it is expected that it will be ready for occupation early in 1911. The contractors are: Mason and joiner's work, Messrs. D. Kitching and Son, Knaresborough; plasterer, Mr. M. Coleman, Knaresborough; slater, Mr. J. Shepherd, Harrogate; painter, Mr. J. Morley, Knaresborough; plumber, Mr. Thompson, Harrogate, and Leeds.

Leeds.—The new church of St. Margaret, in Cardigan Road, has been consecrated by the Bishop of Ripon. The building was begun in 1907, and the present portion, consisting of four-fifths of the whole structure, and seating 700 people, has been completed at a cost of about £11,000.

London, W.—The large stone cross over the new frontage of the Church of St. John the Baptist, Holland Road, Kensington, has been formally dedicated. The church, which was begun over thirty years ago, is now being completed by the erection of the baptistery and two porches, at a cost of over £5,000.

Morecambe.—The promenade improvements, which have been made at a cost of £20,000, have been formally opened on completion. The scheme has included an extensive system of road widening, the building of a new sea wall, the laying out of greens, the erection of bandstands, the construction of underground lavatories with roof gardens, the doubling of the tram track, and electric lighting on an improved scale. The work has been carried out under the supervision of Mr. J. W. Hipwood, A.M.Inst.C.E., borough engineer.

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglican Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. The competition will be confined to architects having an office or residing in the areas of the following education authorities: Cambridgeshire, Isle of Ely, Lowestoft, Norfolk, Norwich, East Suffolk, and Great Yarmouth. D. O. Holme, clerk of the Governors, Castle Chambers, Norwich.

SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—The U.D. Council of Kingstown offer premiums of £50 and £20 respectively for the two best designs for the above to be erected at Lower George's Street. Particulars from Mr. J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT.. 5. SHERINGHAM COUNCIL OFFICES.—Architects desirous of submitting designs for the council offices proposed to be erected at Sheringham may obtain full particulars on written application, accompanied by a stamped addressed envelope, to Edgar C. Rolfe, Clerk of the Council, Church Street Chambers, Sheringham.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects) for a new secondary school to accommodate 150 boys. Particulars, together with site plan, can be obtained from Mr. A. F. Kidson, town clerk, Folkestone, on payment of a deposit of £2 2s., which will be refunded on the receipt of a bona-fide design being submitted.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, together with a plan of site and sections at ground level, may be obtained from the engineer and surveyor, Mr. Samuel J. Harpur, Town Hall, Maesteg. Designs must be deposited at my office by noon on Monday next, September 19th. Two premiums are offered, namely, 25 guineas and 10 guineas, as first and second respectively.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor, will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries sent must be on the express understanding that he is not to be held responsible or any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

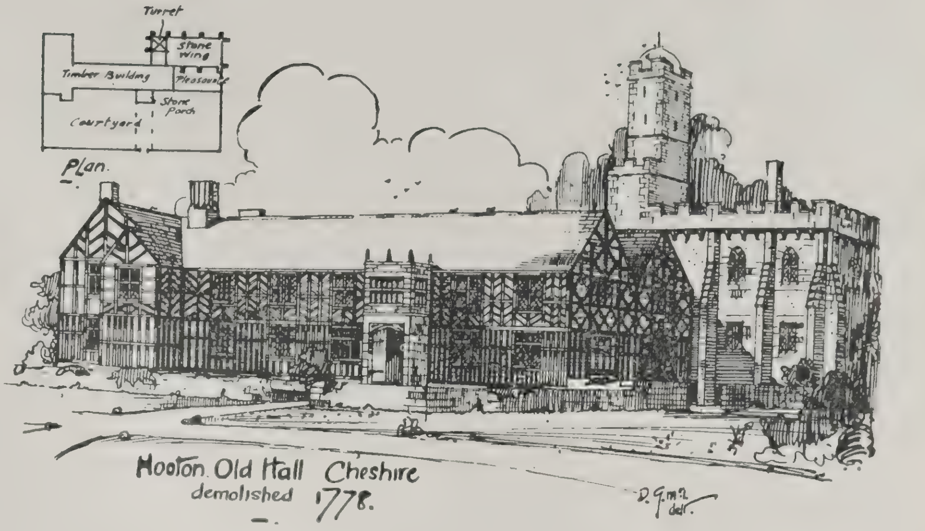
The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Hooton Hall, Cheshire.

In further reply to G. H. (NEWCASTLE, STAFFS), whose enquiry appeared in our issue of June 8th last, we have received the following from a correspondent :—"Hooton Hall, Cheshire, was originally the seat of an ancient family named Hotone, in the reign of Richard I., and subsequently from the reign of Richard II. the home of the Stanley family, being for nearly five centuries the most important manor house in the Forest of Wirral. An old chronicler says of the family of Stanleys of Hooton, that 'they were of great dignity and worth, deriving their pedigree from Alan Sylvester, upon whom Randulph, First Earl of Chester, bestowed the Bailiwick of the Forest of Wirral, and delivered unto them a horn in token of the gift, from whence we gather that the Wirral was holden to be a place of no mean account in those time, where have continued the same Stanleys in a direct succession, being lately possessed by a very worthy and noble-minded knight, Sir Rowland Stanley, who lived to the age of 100 years—the oldest knight in the land.'

"The old Hall of the Stanleys, as the accompanying sketch will show, must have been a most striking and interesting building. It was a very large quadrangular building of the usual Cheshire 'magpie' timber and plaster work, one wing being occupied by a massive stone, embattled and machiolated tower which was dominated by a very slender turret of great height, built by Sir William Stanley under a special licence from King Henry VII., dated August, 1488. This remarkable turret is supposed to have served the purpose of a look-out turrent, for observing the approach of marauders from the Welsh borders, its great height being necessary in order to clear the tops of the forest trees which covered practically the whole of the Wirral at that period.

"The sketch is taken from a record of an original contemporary painting belonging to the Stanley family. In one of the rooms of the old hall the wainscoting was painted and decorated with rude paintings of the Earls of Chester. The Hall, which was taken down in 1778, was succeeded by a most palatial house, built of Storeton stone, in the style of the Italian Renaissance, from designs by W. Yatt, and was described at the time by Mr. Ormerod, the county historian, as 'the most elegant building of the kind which Cheshire could produce.' So magnificent was it that Napoleon III., Emperor of France, frequently stayed there as the guest of Sir William Stanley. A lofty noble banqueting hall occupied the east or river front, together with a long picture or sculpture gallery, the whole being enriched with columns and walls of varied and rare marbles.



Hooton Old Hall Cheshire demolished 1778.

"The sale of the ancient estate was necessitated about 1850 owing to the great extravagance of its owner, and it is said that the Emperor of the French, being then in the zenith of his power, repaid his friend's former hospitality in the handsomest way. The estate and hall were bought by the late Mr. Naylor, who made great additions to it, including a massive colonnaded façade and tower at the west front. The Hall was unfortunately dismantled and untenanted for many years, but has recently been leased to the Hooton Park Steeplechase and Racecourse Co., Ltd.

"An ancient heronry is still maintained, and there is in the park a holy well, known as St. Helen's well, over which Lady Marie Stanley erected a little well house, now converted into a cottage." D. G. M.

Gothic Work near Wilmslow for R.I.B.A. Intermediate Exam.

In further reply to A.R.M. (OLDHAM), whose enquiry appeared in our issue of June 29th last, we have received the following from a correspondent :—"I can recommend the following churches in the neighbourhood of Wilmslow, Cheshire, for the testimonies of study of Gothic work, R.I.B.A. intermediate examination, viz. :—Wilmslow, Decorated and Perpendicular windows ; Mobberley (4 miles), rood loft, sedilia and piscina ; Prestbury (4½ miles), Norman chapel and doorway, thirteenth-century work, tracery windows, Perpendicular tower, sanate bell gable of unusual form ; Northenden (5 miles), fifteenth-century works ; Cheadle (5 miles), fine panelled roof, Late Perpendicular screens ; Bowden (6 miles), fifteenth-century work ; Gawsworth (9 miles), fifteenth-century work ; Astbury (11 miles), Perpendicular font, rood screen, and choir stalls (finest in Cheshire) ; Witton (11 miles), Perpendicular work, fine belfry tower ; Great Budworth (11 miles), fine panelled roof and Late Perpendicular tower, 1528." D. G. M.

Prospects for Architects' Assistants in Johannesburg.

ANXIOUS (CARDIFF) writes : "Would you kindly inform me what are the prospects for an architect's assistant in or around Johannesburg, South Africa ; also the usual standard of payment given there?"

—This question has been submitted to the Emigrants' Information Office, whose Chief Clerk courteously replies that he is unable to give the information asked for with regard to the rates of remuneration for architects' assistants in or around Johannesburg. He has been in communication with a South African official, who is well acquainted with the Transvaal, and he agrees that the salaries must of necessity differ very largely in accordance with the capacity of the man, with the status of the firm employing him, and with the class of work upon which he is engaged. As to the demand, his opinion is that such a man would be ill-advised to go to the Transvaal, or to any part of South Africa to seek for employment in his profession.

The Temple of Theseus.

DORIC (SOUTHPORT) writes : "Can you inform me of the subjects of the carving in the metopes, north and west fronts, of the Temple of Theseus, Athens, or the name of a book or books where I can find same? Mr. Banister Fletcher, in his History, page 64, gives those in the S. and E. fronts only."

—The metopes on the west front of the so-called Theseum are not carved at all. It is conjectured that they may have been painted. The only metopes carved are the ten on the east front, representing nine of the Labours of Hercules (one of the subjects being divided between two metopes), and the four on the north and four on the south side. nearest the east end. These are much dilapidated, but are supposed to represent the eight labours of Theseus, in the suppression of tyrants and robbers in Greece. It is doubtful whether the temple was really dedicated to Theseus.

Liability for Repair of Roads.

NOM (BURNHAM) writes : "A firm of hauling contractors verbally agreed to deliver by steam traction a quantity of goods, viz., bricks and tiles, to a site in the country at a less rate than could be done by horse haulage. In the case of a claim made by a Rural Authority against the employer of the hauling contractors (a builder in this instance) as the first party for repairs to roads damaged by the traction, can the builder legally claim —from the hauling contractors—repayment of all costs, legal or otherwise, that he may be called upon to pay the Rural Authority?"

—It is to be assumed that there is nothing in the contract between the builder and the haulage contractor which regulates the question of liability for extraordinary or excessive traffic. This being so, one has to look at the statutes dealing with the matter. Formerly, that is to say, prior to the Locomotion Act, 1898, the person liable to pay the expense occasioned by extraordinary traffic was the person or contractor who actually led it. It having been found, however, that this gave rise to hardship, it was provided by the Act of 1898 that where extraordinary expenses are incurred owing to extraordinary traffic, the highway authority may recover in a summary manner from the person by "or in consequence of" whose order the weight or traffic has been conducted. This provision would seem to impose liability on the employer of the hauling contractor, namely, the builder. In the circumstances of the case, the builder could not recover from the haulage contractor unless the latter has bound himself by contract to take over the liability. This is because the statute expressly puts the liability on the builder. He in his turn might of course be liable to say that the traffic was led in consequence of the order of the building owner (see *Bromley R.C. v. Croydon Corporation* (1908), 1 K.B. 354)." X.

Temple at Eleusis.

A. O. A. (Birmingham) writes: "Can you give me the date or an approximate one of the Ionic Temple at Eleusis? It does not appear to be given in 'Spiers's Orders,' 'Banister Fletcher's History,' and such standard works of reference."

—There was no Ionic temple at Eleusis. The great temple, of which only the plan and a few fragments remain, was Doric. The Lesser Propylæa is supposed to have been decorated internally by Ionic colonnades against the walls at each side, of which a base, capital, and part of the entablature were found. A small conjectural elevation of the colonnade is given in Anderson and Spiers's "Architecture of Greece and Rome," page 88. It is stated in a foot-note there that the order is included in Normand's "Parallèle des Ordres d'Architecture," but there is no such plate in our copy of Normand. The work was probably late; perhaps about 300 B.C.

Party Wall.

Fair Play (Bristol) writes: "In the event of an adjoining owner not agreeing to the erection of a party wall between two properties, can the building owner erect an external wall on the boundary line of his land with the footings projecting on to the adjoining owner's land? The London Building Act, I know, makes this provision, but would it be legal to do so in the case in point—a small West Country town, It seems to me the L.B.A. is the fair and equitable arrangement, as otherwise my clients must sacrifice a portion of their land equal to the projection of footings. The local bylaws say nothing on the matter."

—The answer to this query is reasonably plain. For a man who enters upon his neighbour's land for any purpose is a trespasser; and it matters not that the neighbour may at some future time derive a benefit from the work or erection which has been put upon his land.

It was held in an old case (*Barlow v. Norman*, 2 Wm. Blackstone, 959) that the builder of a house on a new foundation was not entitled to build his side or flank wall one-half on his own ground and the other half on the vacant ground of his neighbour, "for no man has a right to presume that his neighbour will hereafter build a house adjoining to his, and erect half of his outside wall on his neighbour's ground in consequence of such a presumption." The London Building Act not being applicable, the parties are relegated to their rights at common law; and even under the London Building Act it has been held that where each adjoining owner has an external wall the Act does not give them right to place footings on the adjoining land (*Thornton v. Hunter*, Builder, Feb. 4, 1898). X.

Fireproof Casing to Iron Joists.

A. O. C. (Barnsley) writes: "Can you inform me whether you think there is any demand in the building trade for a fireproof casing to iron joists under floors, etc., so made in sections that it could be readily fixed to the joist with special iron clips. What is the usual method of covering these, and what would be the approximate price per foot run for covering, say, a 12×8 steel joist?"

—I do not think that such a casing would meet with much demand. It would be expensive as a centering, and it would be inefficient as a fire protection unless it were filled in with concrete. The usual method at present is to attach some kind of wirework or expanded metal to the under side of the joists, fix a temporary boxing of timber, and fill in with concrete. There is, however, an alternative method of fixing to the underside a moulded concrete slab, in which hoop iron is embedded with the ends projecting so that they can be bent over the lower flange. Then only shuttering to the two sides is necessary. The cost of encasing the portion of a beam projecting 12in. by 8in. below the joist would be 1s. per ft. run. D.

Assignment of Property.

Hammerless (Crewe) writes: "I have a business which I am anxious to make over to my sister, and I shall be glad to have your advice on the following points. (1) Can I do so, legally, without any payment on her part? (2) Can I form it into a limited liability company and make her the sole holder of the shares? (3) What would be the cost of the first method? (4) What would be the cost of forming it into a company with, say, £1,500 to £2,000 capital, fully paid up, and all ordinary shares?"

—It is quite legal for a man to make an assignment of all his property without consideration, but the proceeding is open to certain objections. In the first place the transaction may be set aside as being a fraud upon creditors, if any creditor thinks it worth while to attack it. It is often thus with assignments which are made "in consideration of natural love and affection" (*Gale v. Williamson*, 8 M. and W. 405). It was provided by a statute passed in the reign of Elizabeth that such assignments were void against creditors. The assignment may also be declared void against the trustee in bankruptcy, should bankruptcy supervene. A further point to be remembered is that by Finance Act, 1910, estate duty would be payable *ad valorem* if the grantor were to die within three years. As to questions 3 and 4, the cost of preparing a deed of assignment would not be great. As to the cost of forming a company, a solicitor should be consulted. X.

Liability of Architect.

Devorgilla (Dumfries) writes; "Please let me have your opinion regarding the following, and if at common law I am liable. A small hall was built four years ago, constructed of timber framing covered with corrugated iron sheeting, and plastered inside, but no felting or match boarding was used. The roof sheets were specified in the original specification to be overlapped two cores or 6in., but through some clerical mistake in the copy written out for the tradesman's use, that phrase was omitted and the contractor accordingly gave the ordinary lap of 1 core or 3in. The result has been that at frequent intervals the roof has leaked very badly in heavy driving rains, but the contractor has endeavoured to repair and remedy it by puttying and additional strips of iron at the joints—as I held him by the general clause in specification of 'making the roof watertight.' That has occurred for the past 3½ years, until after a thorough overhaul a few weeks ago, he applied for his final certificate, which I granted, after (it seemed to me) the building was fairly and honestly overhauled, and after some rain which occurred, it seemed to be practically tight. Since then a very heavy rain of some duration has happened, and I am led to believe that the roof leaked in a number of places. The proprietor has taken action, and evidently intends to come upon me to make the building right and absolutely tight, having 2 cores lapped joints in the roof sheets according to my original specification. Of course, he has no recourse against the contractor, seeing I have certified the work to be to my satisfaction. Possibly I have made a mistake in granting the certificate, still, it became so annoying through 3½ years, that I got a thorough overhaul and finished the matter, as I thought. First, can the proprietor hold me responsible for the overlapping of 6in. (which was not done, owing to a clerical error in the copy of specification)? Secondly, Could an action be brought against me successfully to cover the roof according to my original specification. Thirdly, if felt was first laid over the roof purlins and then the corrugated sheeting lapped 2 cores, would you consider then that the building would be as watertight as possible?"

It is presumed, although it is not expressly stated, that "Devorgilla" was acting in the ordinary way as architect in relation to this job. That being so, he assumes the liabilities and responsibilities which attach in connection with the employment of an architect. He would seem to have made the initial mistake of allowing the builder or tradesman to rely on a mere copy of the specification. The tradesman, presumably, is bound by the agreement itself and not by the copy; and it appears that at one stage he might have been held liable to complete the work according to his contract.

The position of things, however, is altered by the certificate having been granted. It discharges the builder: *Goodyear v. Mayor of Weymouth* 1 H. and R. 67; and the Scots case of *Ayr Roar Trustees v. Adams*, II. Ct. of Sess. cas. 326. So far, however, as the architect is concerned, it is feared that the employer might be entitled to come upon him for damage occasioned by negligence in granting a certificate. The leading case on this point is *Chambers v. Goldthorpe* (1901), 1 K.B. 124, where it was held that a building owner may claim against an architect for negligence in incorrectly measuring up work done and in improperly allowing payment for certain items.

As to the last question put, it is conceived that the word "watertight" must be read in connection with the specification as a whole. The builder could not discharge his obligation to build the roof to specification by making a watertight roof in some way not specified. X.

COMING EVENTS.

Wednesday, August 3.

Cambridge University Local Lectures.—Summer meeting at York. Mr. A. Hamilton Thompson, on "The Parish Church in Yorkshire" Second lecture. 5.15 p.m.

Friday, August 5.

Cambridge University Local Lectures.—Summer meeting at York. Mr. A. Hamilton Thompson on "Military and Domestic Architecture." First Lecture. 8.30 p.m.

Monday, August 8.

Cambridge University Local Lectures.—Summer meeting at York. Mr. A. Hamilton Thompson on "Military and Domestic Architecture." Second lecture. 5.15 p.m. Mr. John Bilson, F.R.I.B.A., on "The Architectural History of York Minster." 8.30 p.m.

Wednesday, August 10.

Cambridge University Local Lectures.—Summer meeting at York. Mr. A. Hamilton Thompson on "Military and Domestic Architecture." Third lecture. 5.15 p.m.

Friday, August 12.

Cambridge University Local Lectures.—Summer meeting at York. Mr. G. G. Coulton on "Artist Life in the Middle Ages." 9 a.m.

Saturday, August 13.

Cambridge University Local Lectures.—Summer meeting at York. Mr. J. B. Stoughton Holborn on "The Art Spirit of the Middle Ages." First lecture. 8.30 p.m.

Monday, August 15.

Cambridge University Local Lectures.—Summer meeting at York. Mr. J. B. Stoughton Holborn on "The Art Spirit of the Middle Ages." Second lecture. 10.30 a.m. Mr. A. J. Wyatt on "William Morris." First lecture. 8.30 p.m.

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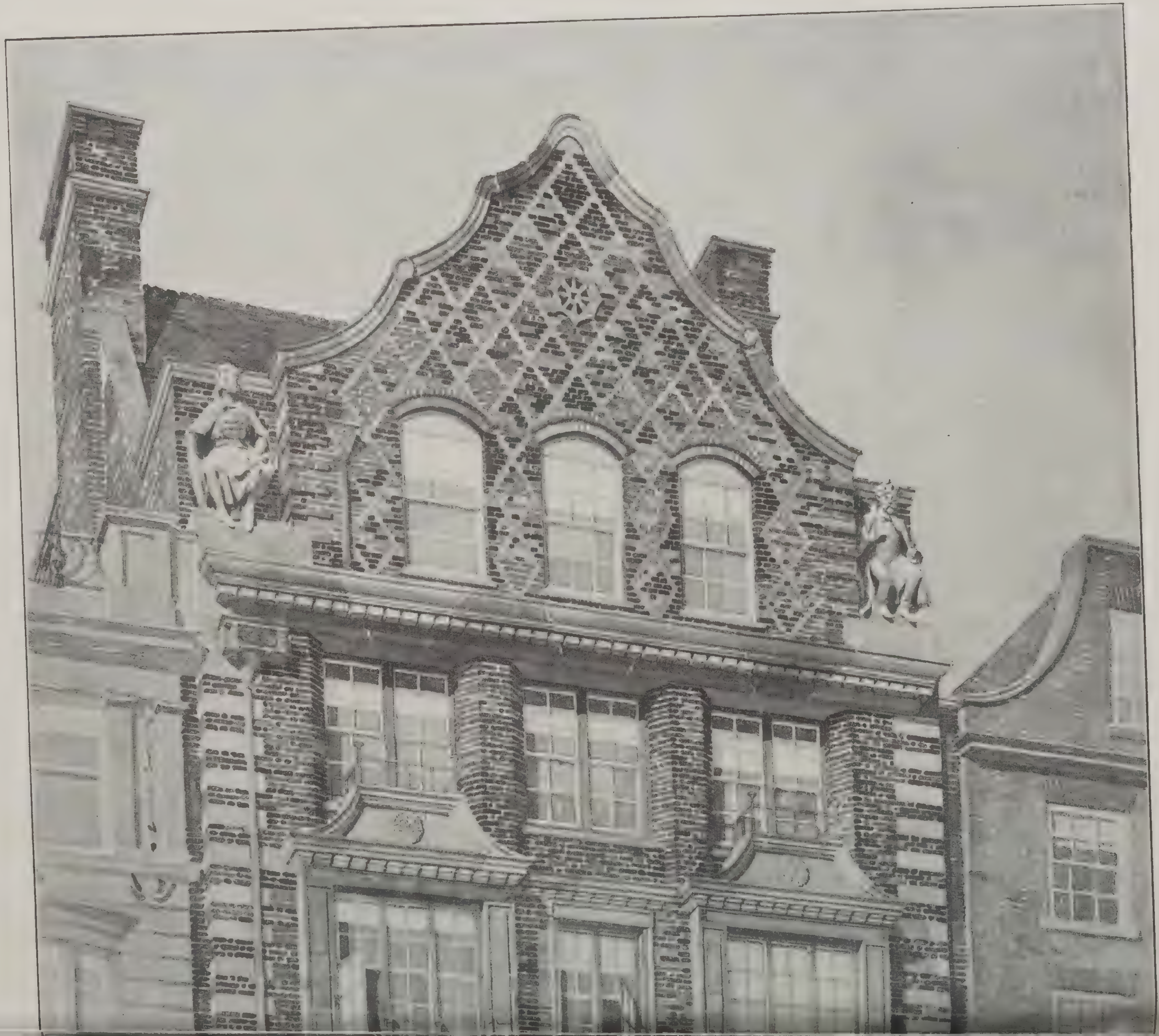

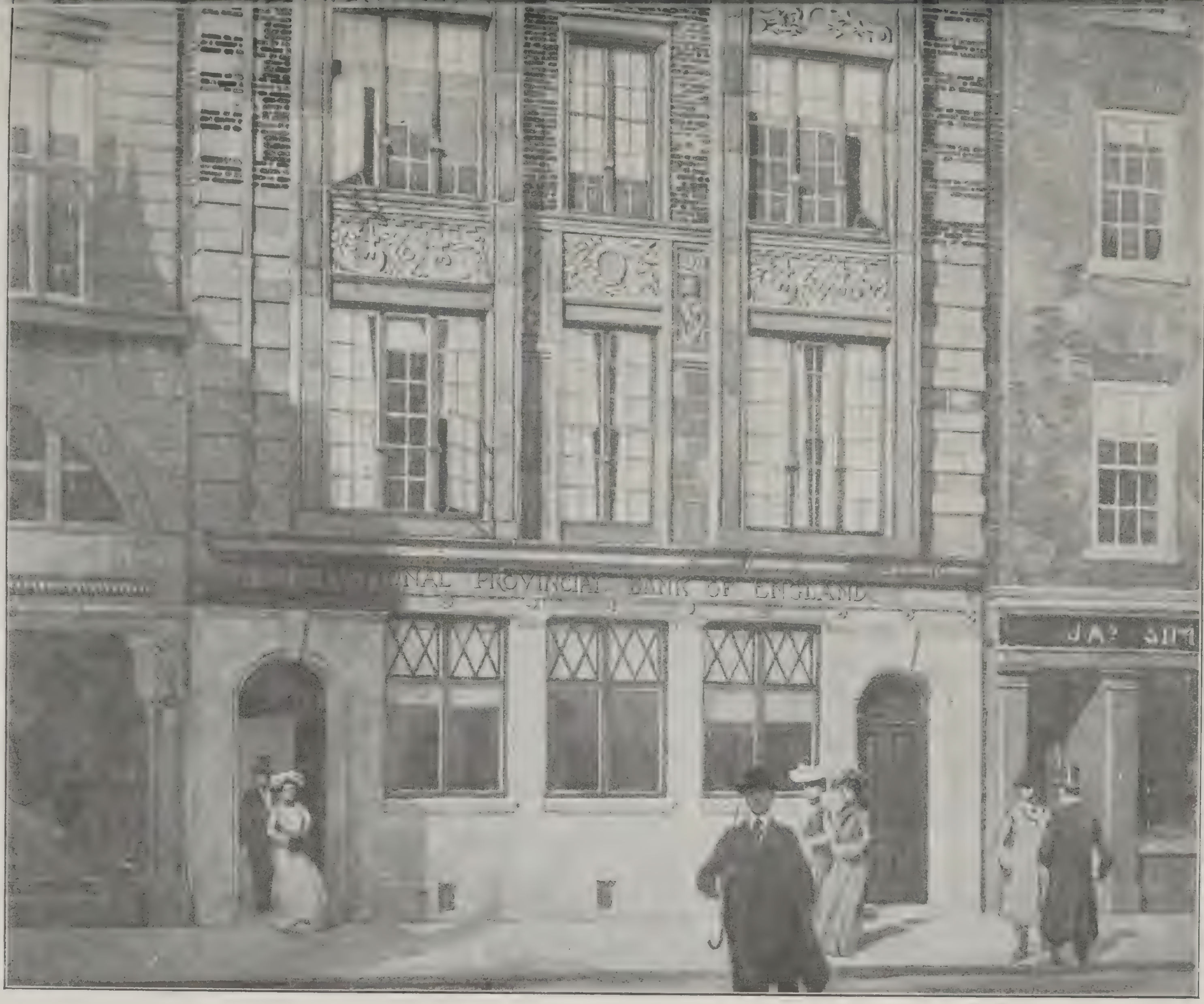

KINGSGATE HOUSE, HIGH HOLBORN, LONDON. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

(See "Architects of the Day.")

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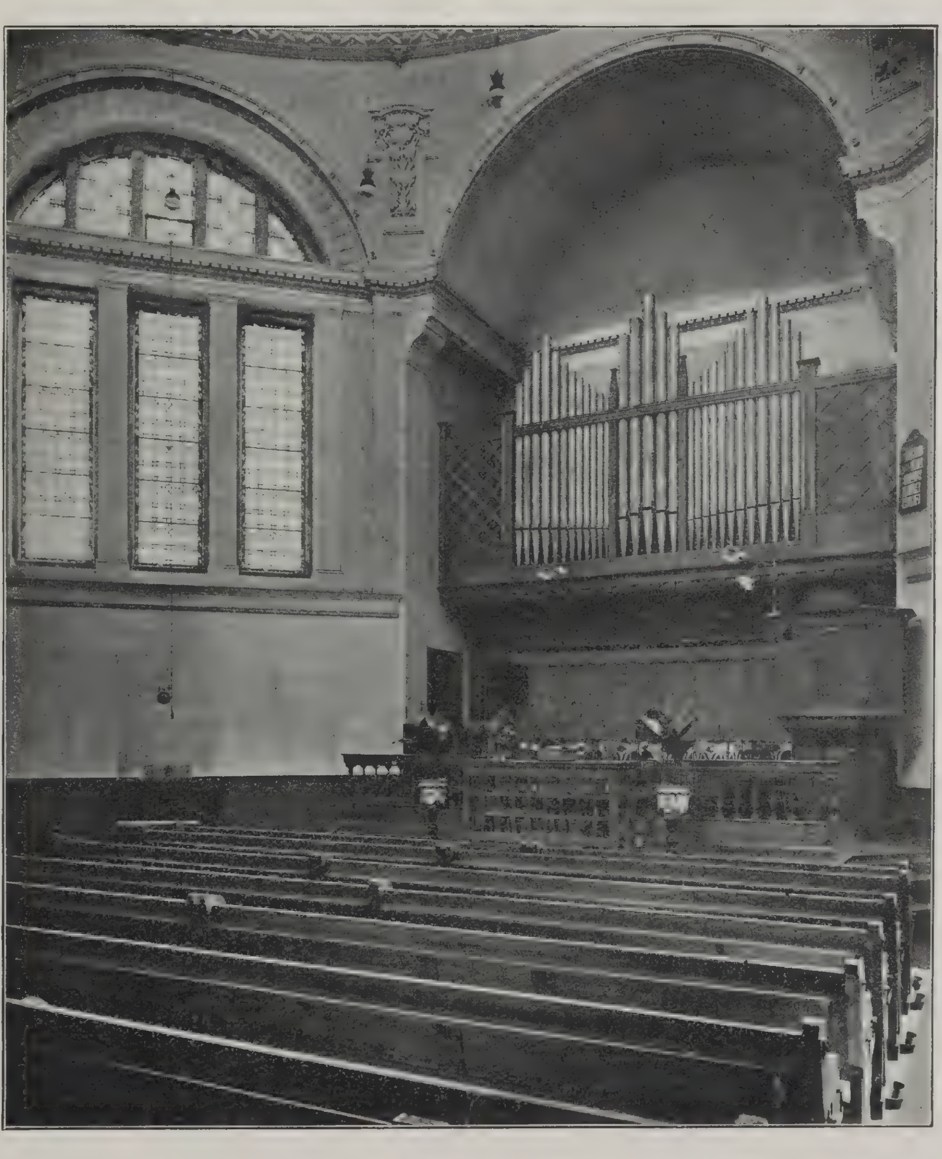
THE ARCHITECTS' &
BUILDERS' JOURNAL

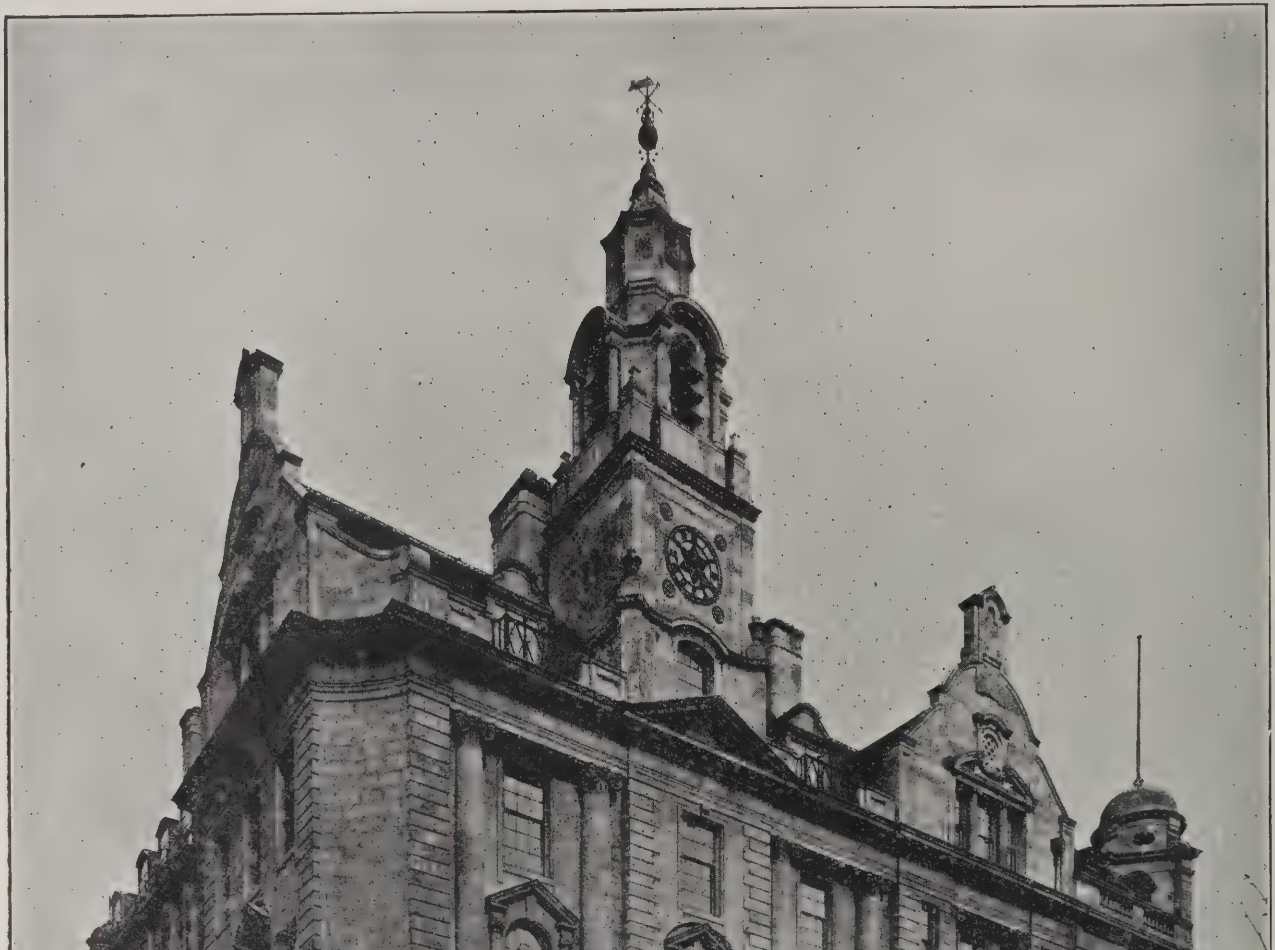
WEDNESDAY,
AUGUST 10th, 1910.

Volume XXXII. No. 810.



This view of the rostrum shows the organ, which, though a comparatively small and simple instrument, has a very fine tone.

KINGSGATE CHAPEL, HOLBORN. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.
(See "Architects of the Day.")



THE BAPTIST CHURCH HOUSE, SOUTHAMPTON ROW, LONDON. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.
(See "Architects of the Day.")

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 10th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 810.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

The "National" Competition Designs at South Kensington.

WE put the word "National" in apologetic commas, as we have always considered it an absurdly large term to use for these annual displays of students' work, and one likely to be misleading to the stranger within the gates. The heading, "National Art-Schools Competition," would be the correct one, and would prevent misunderstanding.

The drawings, models, etc., are arranged in some rooms in one of the temporary structures on the west side of Exhibition Road, a nest of ugly erections which are a discredit to the neighbourhood, and which it is to be hoped will before long be swept away, and the site turned to some better purpose. Disregarding for the present the Reports of the Examiners, we will give our own impression of the collection, taking it as an ordinary exhibition to be judged on its merits.

Commencing with the furthest or innermost room, we find here some good drawings and etchings of buildings, by Inez Topham (Bristol School), for which a book prize has been awarded. The room contains life studies of the figure, rather black and heavy in execution, and a number of sketches of igures, which are superior to the finished studies. A frame of quick-time sketches from the model deserves notice. In he second room are oil studies from the life, and still-life tudies, which are the best work in the room, and for one of which, by Elizabeth Hancock (Hackney School) a gold medal has been awarded, apparently (from the Report) for the ense of lighting displayed; this is true, but it is dull in olour, and we do not quite share the admiration expressed or it; there is more colour sense in the two silver medal till-life paintings which flank it. But it is satisfactory to find till-life showing well in the competition, as it is one of the most valuable means of training in technique and colour. among the subjects treated in this room are two monochrome tudies of a Byzantine-looking capital, which are carefully rawn and shaded, but whether they were worth bronze medals is another question; this kind of shading work in monochrome is not a very subtle form of artistic execution.

The third room contains a good deal of plaster relief work, mong which No. 40, a low-relief wall decoration design of conventional floral treatment, by Florence Bate (Devonport chool) is a really beautiful bit of decorative work, both in tyle and execution, and well deserved its silver medal. A tudy for a panel in relief (235), a nude figure of a man eated turned away from the spectator, and looking down ver the back of the seat, is both original in idea and effective n design and execution; this, to which a silver medal is warded, is by Rosie Bauerkeller (Manchester School). A ss original but very decorative panel figure is that (462) by oyce Reddrop (Lancaster School). One of the gold medals f the year is awarded for the large bas-relief panel over the oor, by W. H. Wright (Nottingham School), apparently of nude poet reciting to some half-draped admirers; it is only escribed in the catalogue as "modelled design for a doorway," for one of the little peculiarities of the Department is that the subject or meaning of a design is never stated, it is merely put in a certain class. For important figure compositions this is rather absurd, as part of their merit may and should consist in the degree of success with which the subject is expressed, and one ought at least to know what the artist meant to express; unless the "National" students are taught to think that execution is everything and subject nothing; which is a fallacy. A design for the decoration of the hall of a seaport town, by Harold Dickinson (Regent Street Polytechnic), is on good architectural lines, with symbolical mosaic figures in the spandrels of a decorative wall arcade. The crayon sketch compositions of figure subjects by Violet Hawkes (Liverpool School) show both spirit in drawing and a good sense of composition. Among examples of furniture and wood-carving in this room a carved walnut writing bureau by Lilian Hitchcock (Thurloe Place Classes) shows a very nice bit of carving on the lid; a lid of a linen-chest by Lydia Royle (Manchester School) has a band of good relief carving; but the best thing in this class of work is the carved wood finial for a bed-post (so described; it would do equally well for a stair newel, for which we want some new ideas) by W. B. Binns (Birmingham School); this shows a small circular panel ornament on each face, above which the post is worked into a figure of an owl, the whole work keeping the square outline of the post. This is an excellent piece of work on an original *motif*. We observe that the catalogue, with its usual vague carelessness of wording, describes these last-mentioned works in wood as "design for" this and that; they are not designs, they are the executed work, which makes all the difference. W. Shearsmith's large piece of wrought-iron work, a sign for a country inn, which is a good piece of work, is also described as "a design for wrought-iron sign." The framers of the catalogue might really remember that words have a meaning, and that a "design for" any object means making a drawing or other form of proposal for it, and not the execution of the work.

In the fourth room, the large room, there are a great number of works of various classes, many of them of no very great value, but the first thing we come upon is a set of very able drawings in line by Leslie M. Ward (Bournemouth School), stupidly called in the catalogue, "designs for book illustrations"; they are not illustrations for books, they are original conceptions in landscape and shipping compositions, of very great merit. The author describes in a good script hand the principle on which he went to work—selecting a special effect, "using pen textures which the objects themselves suggest," etc. A gold medal has been rightly awarded to this set of drawings; one of the best-earned gold medals of the year. Another gold medal is awarded for a stained-wood mirror frame by Florence Gower (Regent Street Polytechnic); we have not much sympathy with the type of work, but the work, which appears to illustrate successive episodes of a mediæval legend, is well designed in a decorative sense, and achieves a rich colour effect. Designs for jewellery are not very numerous, and that for which a gold medal has been awarded to Alice M. Camwell (Birmingham School) is more remarkable for minuteness and delicacy of execution than for high artistic quality; the bracelet especially wants point and contrast of parts, though the execution is very fine. A better design in an artistic sense is the silver necklace with an enamel pendant by Mary A. Gilfillan (Camden School).

Among the numerous designs for or specimens of textiles and wallpapers there are not many that we care for. The designs for dress fabrics by Berengaria Fildes (Morecambe School), are two excellent little floral designs of conventional type. A great many of the textile designs are far too naturalistic in character. No. 444 is a good design for printed linen, by Cecil Mellor (Huddersfield School); Lucy McArthur's design for printed cotton is also good (Battersea School), as well as another of which we have not the number. Two very good pieces of furniture silk are shown, No. 81, G. Arthur Mason (Macclesfield School), and No. 231, by Arthur Oldfield, of the same school; the first-named obtained a silver medal, the second a bronze medal.

There are some fair specimens of executed stained glass in small panels, but there does not seem to be sufficient stress laid on the necessity for avoiding pictorial treatment in stained glass. These are all praiseworthy attempts at purely decorative panels, but a silver medal is given to a panel by Cyril Lavestein (Birmingham School), an interior with figures and a chequered floor in perspective, which is good in colour, but absolutely pictorial in treatment, and, as stained glass, ought never to have received a prize; and we observe that in the examiners' Report in regard to stained glass not a word is said as to the special kind of design required for stained glass, and its radical difference from pictorial design. We should have thought that Mr. Walter Crane, who was one of the examiners, would have recognised the importance of this principle. It is also somewhat odd to find that the gold medal for stained glass design is given for a couple of cartoons in monochrome, while all the others are represented by the glass itself, as stained glass should be. The cartoons in question, by Edward Ridley (Birmingham School), are certainly, as designs for glass, the best we saw, and are in the conventional and symbolical style of design which alone is suitable for stained glass. But colour is so important an element in stained glass that we do not think any prize ought to be awarded in that art for anything except the glass itself. Another gold medal award we are inclined to criticise is that given to a student of the Bradford School for an iron church door handle and lock-plate. It is a satisfactory design of an ordinary type, but a gold medal for it strikes us as a gold medal very easily earned.

Architecture is relegated to the corridor, and the drawings are not worth a more central position. We may quote the general remark on the subject in the Report:—

> "The examiners have to report that, although no individual works of great excellence are submitted, the general average is slightly improved, chiefly owing to the absence of incompetent work. They regret to note, however, that some drawings are still sent in which are too bad and show too great ignorance to be submitted for the National Competition, and that in certain cases the subjects set are too ambitious for the age of the student. Buildings with such elaborate requirements in plan and arrangements as the main post-office of a large city are unsuitable problems for students of 18 years of age; it would be far better to set simpler subjects which would afford students a real opportunity of exercising their ingenuity in design."

The fact is that architecture is not a subject that can be efficiently taught in art schools; it is based on constructive and technical knowledge of a different kind from that required for modelling, sculpture and drawing the figure and decorative design. C. T. Pledge's design for Council Offices for an Urban District is commendable, and merited a bronze medal (the highest award given in the architecture department). The set of drawings for a Shakespeare memorial theatre we think we recognise as an abortive design for the Soane Medallion; it appears to have issued from the L.C.C. Lambeth School of Building. That is not where students will learn architecture. F. H. Newrick (Sunderland School) sends a good set of drawings of a bay of Durham Cathedral. But the architecture in the National Art-schools competition is always the weakest element, for reasons which should be obvious enough. The real mission of the National Art Schools is first to teach drawing, or modelling, then to teach, or to stimulate by rewards, their application to the improvement of industrial art. In that sense they are carrying on a great work. But they cannot become schools of architectural design.

The Late King's Memorial.

THE decision of the Government to encourage local memorials to King Edward VII., rather than a National one, will be received with mixed feelings. Undoubtedly the majority of people will regret that some big scheme like the rehabilitation of the Mall will not be attempted, and that the late King's memory in his capital will only be brought to the minds of his people and their visitors by minor statues or fountains in the suburbs, or by tablets in the wards of hospitals which the majority of them will never see. Undoubtedly this question of memorials augurs a golden time for the hospitals; the late King's known interest in them, and his establishment of the Hospital Fund, has given an impetus to hospital memorial schemes all over the country. The idea of building or extending hospitals as memorials may prevent many artistic blunders which would result from attempting a system of local monuments; but the essence of a memorial seems to us to lie in its intimate association with the person commemorated, or—as someone has expressed it—its uselessness for other purposes. Few people passing a new wing of a hospital would be thereby reminded that it was a memorial of the late King Edward VII. Moreover, hospitals are not national buildings, or administered as such. A national memorial scheme might not be without faults; but it could be made really commemorative and national, and the funds subscribed for it would not pass into the hands of private boards and committees over whose inclinations and artistic aspirations the subscribers will have no control.

The Wimbledon Hospital Competition.

IN a recent competition for a small hospital at Wimbledon, the assessor, Mr. W. A. Pite, selected the plans of Mr. Hatch, who has an appointment in the War Office, a fact which, it appears, he had duly stated when entering for the competition. It appears that the Committee now propose to take the work out of his hands, either by asking the assessor to select another design, or by paying him the estimated value of the plans and appointing another architect to carry them out; this on the ground that owing to his official duties at the War Office Mr. Hatch could not have time to see to the carrying out of the building. If it were a very large building of the first importance there would be something in this; but apparently it is only a building of about £6,000, and the Committee seem to be under the impression that they have a right to have the architect always on the building—in fact, doing the duty of a clerk of works. If that is their idea, they ought to be better informed. A personal visit to the building about once a week is the utmost that is necessary, or that they are entitled to expect from the architect—many architects would not give as much as that, nor would it be necessary with a properly competent clerk of works; and there is little doubt that the War Office authorities would in such a case allow the architect reasonable time off for a visit to the building now and again. The assessor, who understands the business of looking after a building, has advised the Committee that they need be under no anxiety as to the building being properly supervised. But the Committee apparently persist in believing that having given an architect a small commission of this kind, they have purchased the whole of his time, and that he is to be always on the building! It is really absurd that a Committee should be so ignorant. What do they think happens with an architect in large practice, who may have a dozen buildings going on at once? The fact seems obviously to be that they want to save the expense of a clerk of works, and expect the architect to do the work of one. They are treating Mr. Hatch in a most unreasonable manner.

NOTES AND NEWS.

Midhurst Town Stocks.

The well meant suggestion of a former Lord of the Borough of Midhurst to erect a shelter for the old town stocks, to preserve them from the weather has been temporarily postponed. Local people are making caustic comments concerning the delay, apparently in ignorance of the reason for it. The stocks are adjacent to the old Town Hall, and as the plans provided for the use of modern red bricks, it was felt that the new structure would not be in keeping with the town hall. The work was therefore stopped for the arrangement of a more suitable scheme.

The Garden Suburb House.

A writer in the "Westminster Gazette" extols the merits of the garden suburb house by saying that the purchaser of a house in a garden suburb not only obtains a residence which is designed to his own wants, but he has neither the cost nor the trouble of discovering an architect, a builder, a surveyor, or a solicitor. He pays a stated sum, which may range from £300 to £400 for a modern cottage to £3,000 for a large mansion; and in that sum all other costs will be included. For the definite amount the house is designed, built, and finished ready for occupation. We presume that the next suggestion will be that the architect should be dispensed with.

Building By-laws Again.

Gateshead has recently evolved some new by-laws, and a Local Government Board inquiry has been necessitated to hear bjections to their confirmation. The principal objectors were uilding owners and builders in the district, and the main bjection was that the new by-laws would increase the cost of uilding, and especially of the improved type of house which t was desired to erect. The borough surveyor, asked the uestion: "The cheaper you make houses the more you will ncourage building?" replied, "You can go too far in that irection." Apparently that is the bone of contention. The urveyor's intention is "to improve the present by-laws." The ew by-laws require 13½in. solid external walls; footings re to be 28ins. instead of 22ins., a width of 70ft. between he rows of houses, of which 40ft. will be roadway. The uilders contend that an 11in. cavity wall is quite equal to he 13½in. solid wall. Objections were also raised as to the imbering of roofs, and to the yard space. A councillor ppeared for the local trade unions in support of the proosed by-laws. On behalf of the objectors it was urged that hey did not want to encourage a system of cheap and nasty ouses. They found that the demand was for small selfontained houses with more garden ground than self-contained ouses had hitherto had. What people wanted was a cheaper ind of house, with more land, and it was found that the urchasers would rather pay more for the land and less for he house. The Town Clerk pointed out that the arguments rought forward were the objections of those interested in e sale and building of property, whilst it was the duty of he Corporation to look after the interests of the whole of e ratepayers. The Corporation, in framing these by-laws, ad before them the interests of the public health, and, on ehalf of the Council, he hoped the Board would see its way confirm the by-laws as passed by the Council.

St. Paul's Bridge.

The City Corporation and the London County Council re not apparently "hitting it off" very well in the matter f St. Paul's Bridge. The County Council have stated their illingness to contribute a sum not exceeding £300,000 wards the cost of the proposed widening of the east side f St. Paul's Churchyard, but they will only do this on very erous terms. The Council must be satisfied "as to the etails of the scheme in all respects, and in particular as to e adequacy of the southern approach to the bridge, and all be satisfied that no further expenditure on its part ill be necessary for a considerable period either with regard the continuation to the south of Southwark Street of the southern approach, or in any other portion of the scheme. It is further proposed that the payment by the Council of the suggested contribution shall be spread over as long a term as possible. The whole arrangement indicated above is further subject to the Council being afforded such facilities as it may desire for constructing tramways on the new bridge and approaches, it being understood that the Council shall be under no obligation to construct such tramways, or if constructed, to extend them to the north of Cheapside, so as to link up with the existing tramways in Aldersgate Street." The conclusion of the letter was greeted with some ironical laughter. Mr. Thomas stated that the committee intended after the vacation to recommend the Court to apply for Parliamentary powers to construct the bridge without reference to the County Council.

"Vandalism" at Oxford.

The repair of the garden front of the second quadrangle of St. John's College, Oxford, has been the occasion for quite unreasoning and unmerited alarums and excursions. It was stated that portions of the carving and tracery were being obliterated by the simple but vandalistic process of covering them with cement. The report arose apparently through the whole front having, in order to arrest the erosive action of the atmosphere on the stone, received repeated dressings of Baryta water, which gives the stone the appearance for all the world of having been treated with cement. Mr. Harry Redfern, F.R.I.B.A., the architect in charge of the reparations, says that in his opinion this treatment with Baryta water has one defect, and one defect only, it leaves the stone a most unpleasant colour, but it is his ultimate intention, with the primary object of increasing the preservative effect of the Baryta water, to give it a coating of limewash, and at that stage it will be comparatively a simple matter to restore the original yellowish brown of the stone. Mr. Redfern points out that in the course of this delicate work of repair not a single old stone has been removed, nor a new one inserted, and, in fact, there is not a stone in the front which was not there when Archbishop Laud built it (1631-6), except that in 1889, when the methods employed in this instance were unknown, a few very small pieces of new stone were inserted in the two end gables. As far as the carved portions are concerned, he says, they have been left absolutely alone, for they are in Burford stone, which resists the action of the atmosphere more successfully than the Headington stone, of which the parapet and the mullions of the windows are made. Where the decay of the stonework has left cavities in the face, these have been repaired, after the manner of "dentistry," as the architect describes it, by inserting pieces of hand-made tiles embedded in lias lime mortar, the surface finished off approximately flush with the original surface of the stone.

Artistic Licence.

The story of a window in St. Alban's Church, Carlisle, to be erected to the late Bishop Ware, of Barrow-in-Furness, is amusing. It seems that before the Chancellor would grant a faculty for this window, he insisted on amendments in the design. Oswald, King of Northumbria, is represented in the cartoon as an old man, whereas he died at the age of 38. So this is to be altered. Further, one of the angels is represented wearing the coat of arms of the Dean and Chapter of Carlisle. The Chancellor does not believe an angel would wear such a coat of arms, and this also must be changed. The "Daily News" takes leave to point out that while the Chancellor may be correct about the limitations of angelic costume, they would be inclined to back any opponent of his "who undertook to prove that angels have again and again been depicted, in stained glass and elsewhere, as wearing the coat-of-arms or other cognizance of some mundane person or corporation. Our contemporary blunders badly, however, in attributing the angel with side whiskers in St. Alban's Cathedral as the likeness of *the late Lord Denman, who restored the cathedral.* As a matter of fact, it was the late Lord Grimthorpe who enjoyed that distinction.

ARCHITECTS OF THE DAY.

XIII.—MR. ARTHUR KEEN, F.R.I.B.A.

TO the majority of our readers the new President of the Architectural Association will be known as the architect of much excellent domestic work in the Home Counties; but, in reality, Mr Keen has two sides to his practice, and is responsible for large number of factories and warehouses in London which have never been illustrated, and probably never will be illustrated. For although from some views of these severely commercial buildings that Mr. Keen had at hand they appeared to us very good, and a welcome improvement on much of the stuff we see in our London streets, their designer could not be persuaded to allow their publication. In his view there is not sufficient architectural interest in such buildings, and he prefers to be known and judged by his domestic work, to which our illustrations are, therefore, practically confined.

It is, therefore, as a designer, principally, of domestic work that we must consider Mr. Keen. His training in this branch of architecture probably could not have been bettered, for he was one of that band of brilliant men who passed through Mr. Norman Shaw's office, and who have all since come to the front. It was in Mr. Shaw's office that Mr. Keen first met Mr. Ernest Newton, who has previously been victimised in this series, and there commenced a friendship and pleasant association that have continued to the present day. For though Mr. Keen and Mr. Newton are not partners, they are to be found in the same offices in Raymond Buildings, looking out over the beautiful green that the Benchers of Gray's Inn, to their everlasting credit, preserve from bricks and mortar. Which reminds us that we have frequently been attacked for defending some threatened oasis from the blight of development on the ground that we should encourage building, and not debar it. To the purely material mind this may appear to be an unanswerable argument, but every artist, be he architect, painter, or sculptor, knows that he requires sufficient space for the proper setting of his work, whether it be on the ground, the wall, or the floor.

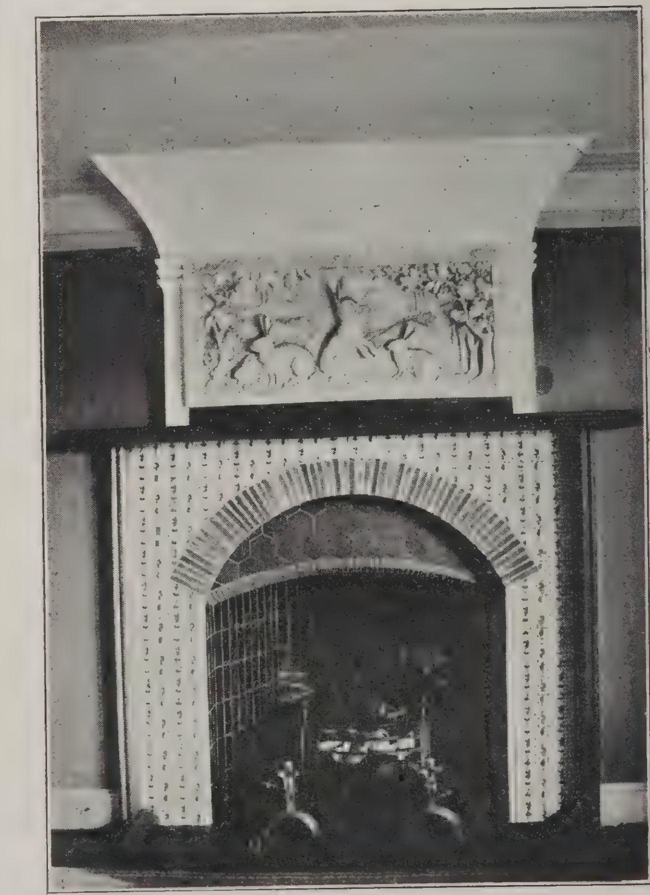
Mr. Keen studied also at the Royal Academy, but confesses that although he obtained a prize he did not derive all the benefit from this institution that he might have done. In his own view he entered too early, and was a little too young to appreciate the possibilities of the training, or to get out of it all that could be obtained. This led him in conversation to generalise a little on the subject of the Royal Academy School. Mr. Keen looks on this as the finishing course in architecture—that is, of course, as far as there can be any finish to the study of this great art. He would desire it to be brought to the plane of the Ecole des Beaux Arts in Paris, where men rarely obtain high honours until they reach the late twenties. It is in no sense, from this point of view, to be regarded as a general teaching or elementary training, and students can therefore make the mistake of entering the school too soon. Rather, it should be regarded as the continuation and culmination of the excellent work done in the A.A. schools in developing the faculties of study, application and deduction, so that a fairly mature and receptive mind may derive the fullest benefit from the later teaching.

Continuing our conversation on this and various allied topics, Mr. Keen touched upon the question of draughtsmanship, to which he attaches very considerable importance in the training of an architect. He believes that all students should join a life class; the delicate nuances of the figure are of great value in educating the hand and eye of the would-be architect in the subtleties of form. Mr. Keen believes that much more attention should be given to sculpture and painting, especially decorative painting; and this is one of his reasons for advocating the Academy as a finishing school, as there, students in architecture, painting, and sculpture meet and get into touch with each other's work. Undoubtedly the camaraderie of the Parisian art student contributes greatly to the success of the Ecole des Beaux Arts as the leading art training centre. There the architect is an artist, a painter and sculptor, but principally an architect; the painter is a sculptor or an architect, but chiefly a painter —and so on. The segregation of the Fine Arts both in training and after life has had a very deleterious effect on art in this country; and we have arrived at a point when the painter, sculptor, and architect are out of sympathy with each other, largely because the limitations and technique of each other's work is imperfectly understood. And by this it is not to be supposed that we expect the architect to have executive ability in the other branches of art; but only that he should have a sympathetic understanding of the aims and limitations of the daughter arts. At present, Architecture is rather in the position of the old-fashioned matron with two revolting daughters whose temperament she fails to understand, and whose aims excite in her scant interest, and a good deal of dismay.

In emphasising his point on the importance of draughtsmanship, Mr. Keen admitted that he now wished he had devoted more attention to it, and that although he, personally, had always been fond of sketching, and found it a delightful hobby, he regretted now that he had not given draughtsmanship greater attention.

The decoration of the rooms of the Royal Society, the Chemical Society, and the Geological Society at Burlington House, carried out a year or two ago under Mr. Keen's supervision, was a work that gave him peculiar pleasure; but he thought that such work falling to the architect pointed to the necessity for a wider study of decoration, and was evidence of the wide range of activities and interests in which the modern architect must busy himself.

An opinion of ours, perhaps not well founded, that the A.A. curricula tended rather to the study of domestic work was disputed by Mr. Keen. We were emphasising the inevitability of "The Orders" as architectural pot-hooks, holding that a knowledge of them, well grounded, should produce a subconscious sense of proportion in the student. This idea



This chimney piece is a recent addition to the house. The modelled plaster panel in the upper part illustrating a woodland scene, is the work of Mr. Laurence Turner.

CHIMNEYPIECE EDGEHILL, LIMPSFIELD. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

ARCHITECTS OF THE DAY.

XIII.—MR. ARTHUR KEEN, F.R.I.B.A., PRESIDENT OF THE ARCHITECTURAL ASSOCIATION.

(Sketched from life by our Special Artist.)

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

was brought to our minds by a modern French building, which, though it exhibits neither columns nor pilasters, still gives classic proportions in the vertical disposition of the wall treatment. Mr. Keen claimed, on the contrary, that the A.A. Schools had done a great deal—which we admit—in the matter of a more classical training and better draughtsmanship. The life class there was well attended, and they hoped to get all students to attend it. Indeed, he thought that attendance at this class, which is conducted by Professor Constable Alston, might soon be made compulsory. The study of sculpture and decoration could not well be included in their curriculum—they had so many subjects at present on the list that it was hardly possible to add more. These were subjects that Mr. Keen thought were more fittingly taken up at the Royal Academy.

The present congested state of the architectural profession and the question of Registration were topics also touched upon. It is, perhaps, hardly necessary to state that Mr. Keen is not a believer in Registration. He feels that if a man has capabilities as an architect he will inevitably come to the front, and that competition will not hurt him. That we admitted, but argued that the capable man would come to the front whether registered or unregistered, and that some means of shutting the door should be at command to exclude the incapables in their own interests as well as that of the profession. The idea that architecture is "a nice, respectable occupation" for mediocre people is responsible for a good deal of the present trouble. Mr. Keen sympathises with the object; but not the means. He also deplores the wastage of young men in the study of an art in which they have neither abilities nor opportunities of making headway; but we gathered that he saw no royal road out of the difficulty. Mr. Keen no more believes in examination as a test of real ability and aptitude than we do; but examinations at the R.I.B.A. and elsewhere still confer a false status.

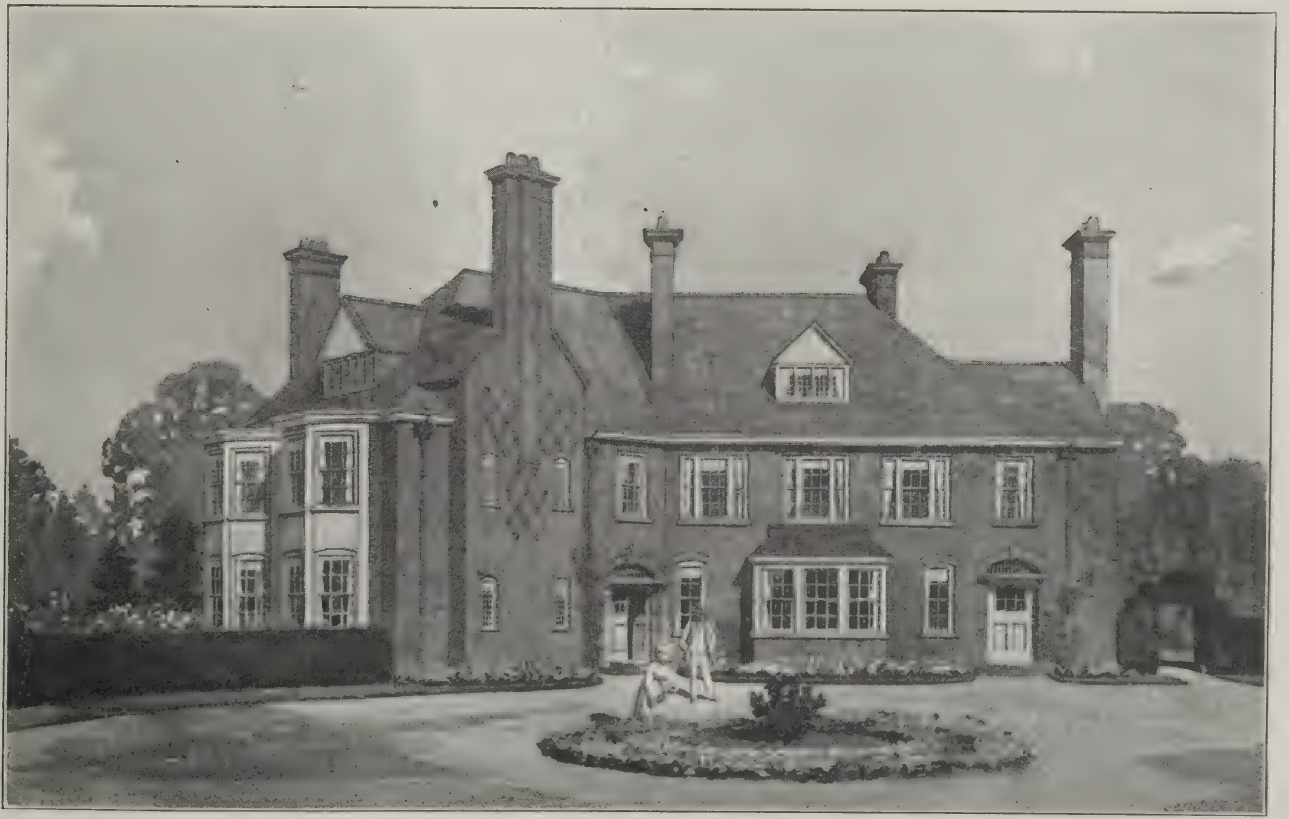
The alternative to registration is the lengthening of the educational course, so that the "cramming" element may be superseded by an "influencing" one. In other words, the training must not tend, as now, to the acquisition of a given number of facts in the shortest possible time; but the gradual instillation of principles into the mind of the pupil. This looks like a six or seven-year course under good men, a heavy expenditure in time and money for the serious-minded student. And, even then, you have done nothing to prevent a man launching out on the strength of one session at the A.A. Day School. The conversation on this head was inconclusive. Mr. Keen agreed to differ with us as to the remedy.

Returning to more personal matters, Mr. Keen comes to the President's chair at the A.A. after a connection of six years, during which time he has served on the Council, and as vice-president, and has contributed to the A.A. journal.

Among the buildings designed by Mr. Keen may be mentioned two or three chapels, including one at Cricklewood, Kingsgate House, High Holborn; the Baptist Church House and Kingsgate Chapel, Southampton Row; six houses at Whetstone (one built for the architect's own occupation), "Hillsborough," Totteridge; three houses at Hampstead (one for Mr. G. H. Swinstead, the artist), three or four houses at Highgate; No. 66, New Bond Street (one of Mr. Keen's favourite works); house at Mill Hill; house at Sanderstead; seven or eight houses in the Limpsfield district; a golf clubhouse at Stoke Poges. The last-named work was a very interesting work, and consisted in alterations to the well-known mansion of Stoke Park, to fit it for the purpose of a clubhouse. Mr. Keen has also designed a good many dwellings at Limpsfield for a Cottage Building Company, run on more or less philanthropic lines; and he is responsible for a block of flats at East Dulwich, with shops under.

Of the buildings illustrated in this issue the following particulars may be of interest:—

The Baptist Church House and Kingsgate Chapel is situated in the widened part of Southampton Row, London, and is the headquarters of the Baptist Union. In addition to numerous offices and committee-rooms, it contains a library 46 ft. by 26 ft., a council chamber 35 ft. by 26 ft., a large visitors' room, and a publication department. Oak panelling and inlaid woodwork have been used freely in the principal rooms, the corridors are paved with black and white marble tiles in patterns, and are ceiled with groined vaulting. The staircase to the first floor is in Hopton Wood stone, with

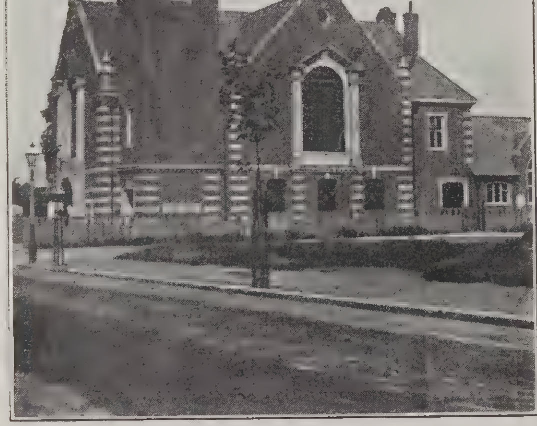


This is a doctor's house, containing a good consulting-room, waiting-room and dispensary in addition to the ordinary sitting-rooms and some twelve bedrooms. The materials are red brick and Broseley tiles, which have toned well.

"BURRINGTON," WHETSTONE. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

massive teak balustrades. The modelled plaster ceilings are the work of Mr. Laurence Turner; the bronze statue of the late C. Haddon Spurgeon in the entrance hall is by Mr. F. Derwent Wood, A.R.A.; and the figure of John Bunyan at the corner of the building was sculptured by Mr. Richard Garbe. Two presentation terra-cotta panels, by George Tinworth, have been set in the chimney-pieces of the council chamber and the visitors' room. It was at first intended to build the library over the chapel, and the octagonal form was adopted to facilitate the lighting of the chapel; but this idea was abandoned to save time in settling a point raised by the district surveyor under the Public Buildings portion of the Building Act, and the chapel was therefore given the benefit of a domed ceiling with a lantern light above it. The panels in the spandrels were modelled by Mr. Garbe to illustrate the various trees mentioned in the Bible. The organ, though small and comparativly simple, has a most beautiful tone. Under the chapel is a large Sunday school. The elevations of the buildings are in Portland stone, and Borough Green red bricks are also used on the side frontage.

Of Cricklewood Baptist church only the chapel is at present erected, the Sunday-school being still to be built. The building is of red brick, with a green slate roof in graduated courses, and with stone dressings to the windows and to the doors. The Greek cross plan is peculiarly well adapted to Nonconformist purposes, because galleries are always characteristic features in these churches, and this plan enables everybody without exception to obtain a view of the preacher. The church is designd to hold 750 people, including the galleries, which are not yet built. The main feature of the interior is the vaulted ceiling, which consists of two main barrel vaults intersecting over the central area. The church has cost about £5,240, exclusive of the Sunday-school, but including the seating, which, with the furniture, has been carried out by Messrs. Bennett and Co. Messrs. Mattock Bros., of Wood Green, are the builders. The glazing was done by Messrs. Morris and Co., and the modelled plaster ceilings by Messrs. Samuel Wright and Co., of Hackney, the heating being by Messrs. Wenham and Waters.



The building is of red brick with a green slate roof and stone dressings.

BAPTIST CHURCH, CRICKLEWOOD.
ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

Kingsgate House (see Centre Plate) bears that name by virtue of its standing upon the site of old Kingsgate Street, which was demolished to make way for the Holborn to Strand improvement. The two figures of the first and last Edward, which sit at the base of the gable, and which were ably modelled by Mr. Richard Garbe, were suggested by the same fact, and in consequence of the building facing Kingsway. The lower part of the building accommodates a branch of the National Provincial Bank of England, and the upper part consists of suites of offices. The front elevation has a ground storey in unpolished Cornish granite, and the upper part is of Borrough Green red bricks and Portland stone. The roof is covered with Wrotham tiles. The carved work throughout the front elevation was executed by Mr. Laurence Turner. The builders were Messrs. Dove Bros.

The chimneypiece at "Edgehill," Limpsfield, is in a recent addition to the house. The modelled plaster panel in the upper part, illustrating a woodland scene, is the work of Mr. Laurence Turner.

Headland Cottage, Limpsfield, was built especially for a literary man, in a very quiet part of the country overlooking one of the finest views in Surrey. The cottage, the walls of which are built of local stone, covered with rough cast, was erected at a cost of about £500, and has since had one or two additional rooms incorporated at the back. Messrs. Wiltshire and Sons, of Sevenoaks, were the builders.

"Burrington," Whetstone, is a doctor's house in the north of London, containing a good consulting room, waiting room, and dispensary, in addition to the ordinary sitting rooms and some twelve bedrooms. The house is built of red brick, with sand-faced Broseley tiles, which, although very hard and strong, and not originally of a very good colour, have in a short space of time toned and mellowed in fairly the same way as ordinary hand-made tiles. The principal rooms have oak floors, and mantelpieces of the same wood. One of the rooms on the top floor forms a very good billiard room. Mr. Henry Brown, of Harrow Road, W., was the builder.

It may be remarked, in passing, that drawings of all the above buildings have been exhibited at the Royal Academy.

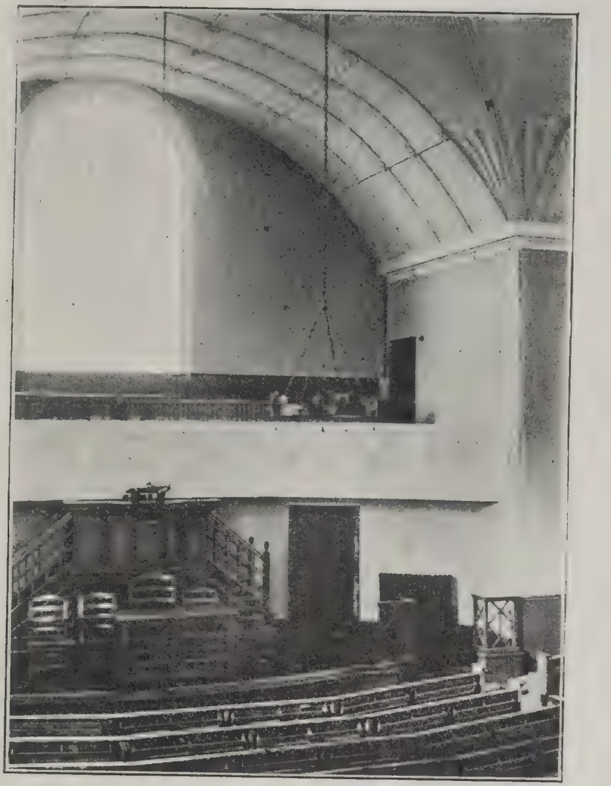
"Elmstead," Limpsfield, is another house built for a literary man. It stands among old elm trees on the edge of Limpsfield Common, and was intentionally made as unobtrusive as possible, so as to harmonise with the immediate surroundings. The tiles found on an old barn, which formerly occupied the site, were used in the present building. One of the first floor rooms forms a study. The builders were Messrs. Brasier and Sons, of Limpsfield.

"Studland," Highgate, is a suburban house, built on a 70ft. plot of ground, and comprises a great deal of accommodation at a very moderate price indeed. The three sitting rooms have wide openings between them for purposes of entertainment. The house contains in all seven bedrooms. Mr. Henry Brown, of Paddington, was the builder.

"Penkerrow," Enfield, is a house of exactly the same type as the last. Some additions have since been made to it, including, in the drawing-room, a screen of fluted Ionic columns in oak. The builders were Messrs. Mattock Bros., of Wood Green.

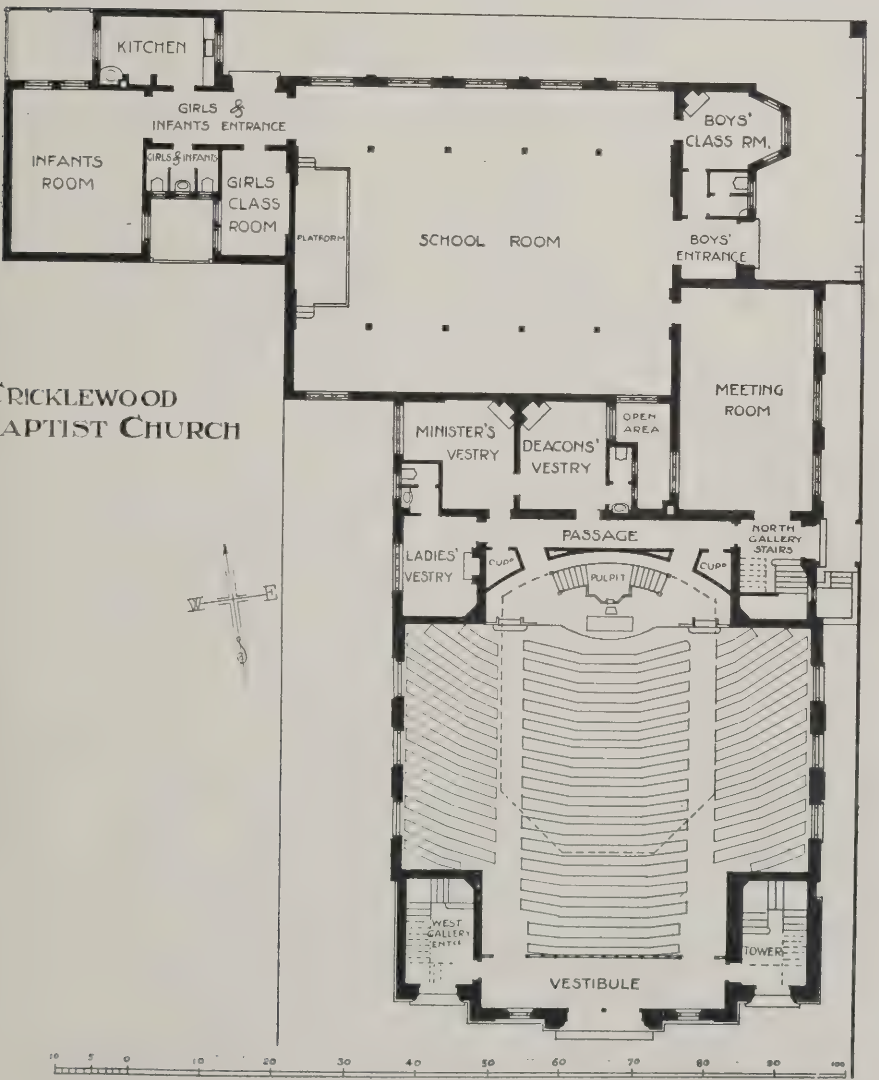
Mr. Keen has excellent qualities for the Presidential office to which he has been elected; and we may expect therefore that the great work which the Architectural Association has and is carrying on will continue to be carried forward on its present praiseworthy lines. Quiet in manner and very charming as a conversationalist, Mr. Keen will rule matters with an apparently light hand, for domination by sheer physical impression is not his role; but shrewdness and method are his qualifications, and, we should imagine, considerable tenacity of purpose in support of anything he believes in; and for these reasons there will be no slacking while he is at the helm. He is a sincere believer in the A.A., and the work of its schools, and may be trusted to further their welfare and the vital interests of architectural education.

We should add that Mr. Keen has lately been appointed to the surveyorship of the Saddlers' Company.



INTERIOR VIEW, SHOWING ROSTRUM AND CHOIR GALLERY.

CRICKLEWOOD BAPTIST CHURCH



ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

BUILDINGS FOR MUSIC.

It is not a little curious to observe that in the critical notices that have been published of the designs in the Usher Hall Competition, hardly a word is anywhere said as to the suitability of the proposed designs for the real purposes of a concert hall, the making of music and the hearing of it. In the report of the assessor the point is not even alluded to; the award seems to have been made only in respect of the convenient planning of the approaches and exits and the architectural style of the exterior. But this is a competition for a concert hall; it is surely of some importance in such a case to consider the merits of designs from that point of view; but it never is done. There was a competition some years ago for the remodelling and re-building of a large concert-room at Bristol, in which the professional assessor made his selection in favour of a design in which the organ and orchestra were planned in the least suitable manner for securing an effective performance. The fact is that as a rule competing architects and professional assessors know nothing whatever about the musical side of the question.

The promoters of the competition have made a mistake to begin with, in their directions for a concert-room to seat 3,000, and an orchestra to provide for a band of 100 and a chorus of 350. If they wish to have oratorio performances on a grand scale, that orchestra is not large enough. The proper proportions are a band of 100 and a chorus of 500. It seems probable that the Queen's Hall has been taken as the *point de départ* both by the promoters of the Usher Hall competition and by the authors of the selected design. If so, it only shows what mischief may be done by the establishment of a bad precedent. The Queen's Hall orchestra was planned by an architect who admitted that he knew little about it, and who, after the main plan of the building and of the external walls was all settled, came to the present writer for advice; he had been instructed to provide space for a band of 80 (which is rather below present ideas), and I found that he interpreted that as meaning standing or sitting-room for 80 persons. I pointed out that the two (sometimes three) kettle-drums and the bass drum—often, though not always, required along with them—would in themselves occupy the space of at least a dozen people, besides room to play them, and his orchestra was too small. But the limitations of space had been settled then; the band space had to be enlarged; the whole space of the orchestra was too small in any case for choral performances, consequently no really adequate choral performance has ever been possible at the Queen's Hall; the chorus, packed together inconveniently close, is always too small when the band is kept up to the numbers now demanded. No provision was originally made, either, for space for a pianoforte on the front part of the orchestra. The organ is treated in the most unsuitable way, being spread out all across the hall, whereas an organ needs to be as much concentrated as possible, and the player is in an alcove at one end, where he cannot properly hear either what he himself or the band are doing. The Queen's Hall is, for its size, acoustically good, and the entrances and exits are very well arranged; but those are its only merits as a concert-room. The whole arrangement of the orchestra is bad and inadequate, and should never be taken as a model.

Messrs. Harrison and Thomson appear

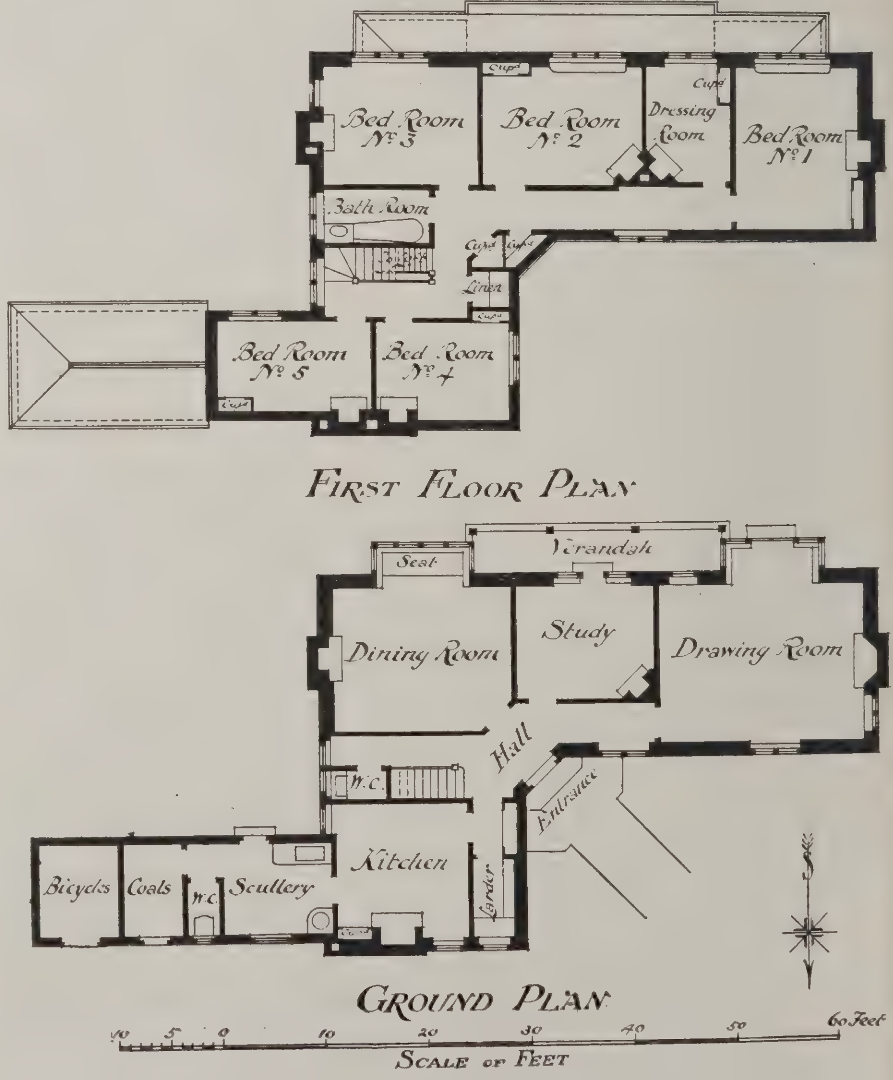
to have provided room enough for a concerto player and his pianoforte at the front of the platform; that their chorus space is too small is the fault of the instructions. But they have made sad mistakes with the organ. In the first place, the organ keyboard ought always, now that we can command electric action, to be placed down in front, just beneath the conductor's desk, and the organist should face the conductor and have his back to the organ. This is perfectly easy to arrange, and has been done in one private concert-hall; I do not know of any public hall in which it has yet been done, but it ought to be done everywhere. The organ-player can then hear what effect he is producing in combination with band and chorus, which he cannot do if he is placed in a recess under the instrument; it is all guess-work then; he may be nearly inaudible, or (if it is a very large organ) he may be drowning the band and chorus without knowing it. This position for the organist, however, is such a common mistake that one can hardly blame an architect for falling into it. But the contrivance in the selected design for providing for the largest pipes by sending them up into a tower practically outside the building is quite absurd. It is a popular fallacy to suppose that it is the vibration of the organ pipe which produces the sound, and so it is probably imagined that if half the pipe is within the building that is sufficient. The fact is quite otherwise. It is the column of air within the pipe that vibrates, the pipe is only a means for defining a column of air of a certain length; you can put your hand on a pipe when it is sounding, and you will feel nothing. For an organ to produce its best effect it should have some empty space above it. The mistake in the selected design is that the organ is too high up and the roof of the orchestra too low.

It is rather a difficult problem, but it is to be met in this way. The chorus seats should not rise higher than is absolutely necessary; if the heads of each rank of singers are well clear of the heads of the rank next below it is sufficient. Having thus kept the summit of the chorus seats as low as can be, all the mechanism of the organ bellows, windchest, etc., should be sunk behind the chorus; the soundboard, on which the feet of the pipes rest, need not be higher than the top level of the chorus seats, and may even be below it; the sound-board for the long pedal pipes may be some distance below it, to allow room for their height; they will be heard just as well. The pipes in front, if they are sounding pipes, must be raised a little above the seat level, but on the supposition that the organist is where he ought to be, down in front, and there is no keyboard recess to be provided for in the organ front, the front pipes need not stand on anything higher than a dado some 2ft. 6in. high. The organ should not be spread out over the whole width of the back of the orchestra, the sounds then seem to come first from one side, then from another; it should be concentrated as far as possible in the centre portion, and the space left at each side, between the organ and the side walls, utilised as rooms —they may form part of the retiring rooms for the chorus. They must not be used as space for chorus seats (a mistake often made), as then the singers seated with the organ between them cannot hear each other, as it is essential that they should, to assist unity in chorus-singing.

The position given to the organ in the third premiated design is even more defective. It is there shown in two blocks on towers (which do not appear large enough) in front, on each side of the orchestra, and separated by its greatest width. The effect of that would be that if the instruments were used for organ solos, its effect would be broken up and seem to come from side to side; and when it is used with the band and chorus it would be a disturbing element, and would not blend with the total effect. An organ when used along with band and chorus is always, in a musical sense, a background, and should be placed accordingly.

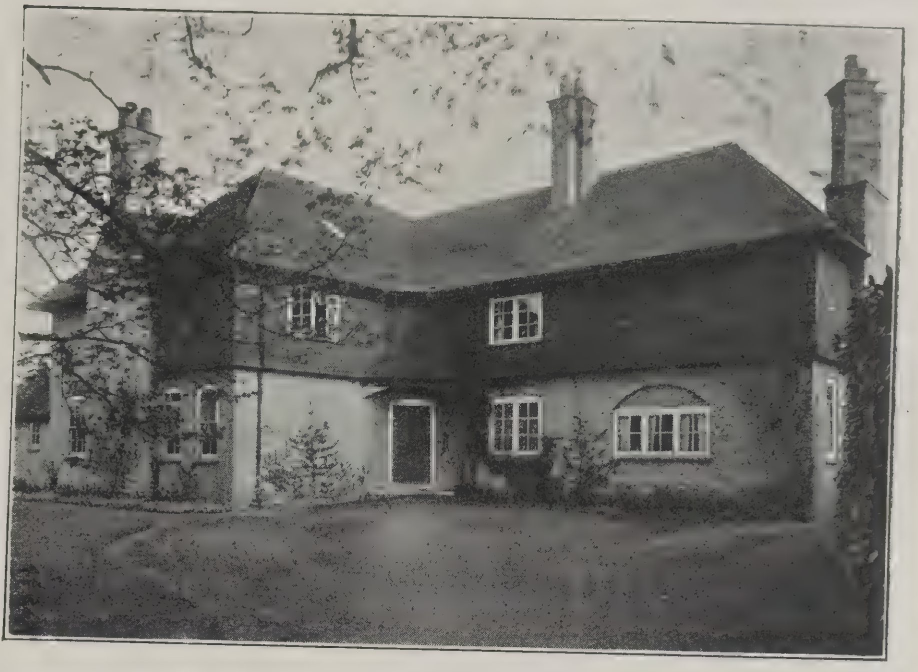
To come to the general question of acoustic conditions in regard to plan and material. The acoustic property of buildings is not, and perhaps never will be, an exact science; acoustic effect is a most elusive problem; buildings which ought not, theoretically, to be good for sound sometimes prove unexpectedly satisfactory, while those over which great pains have been taken turn out failures. But one general principle is undeniable; it should be the object of a concert-room to assist sound at its point of production, and to prevent any reflection or reduplication of it by echo when it has once been produced. To speak first of materials; the materials used in the construction of the orchestra and its surroundings should be such as will sympathise with and reinforce sound without reflecting it sharply. Nothing is like wood for this, and there should be as much wood about orchestra and organ as possible. Let no one ever dream of building a fire-proof orchestra; the thing cannot be done. Hard substances on the walls will no doubt drive sound forward, but will give it a harsh clanging effect. Textiles, on the other hand, drink up sound without vibrating with it; there should therefore be no curtains or such things anywhere about the orchestra. In the auditorium they may sometimes be useful in choking an echo, but this is only when the building is wrong to begin with. Fibrous plaster is a good material for lining the walls of the auditorium; it acts in sympathy with sound without producing much echo. As a general rule, all substances which give sharp reflections of light will give sharp reflections of sound; polished marble and other such materials, however decorative they may look, are therefore misplaced in a concert-room. Plate-glass windows are equally bad; they send sharp echoes back; windows should be broken up into small panes with wooden bars.

Then shape has to be considered as well as material. As a general rule, concave surfaces are bad, either in plan or section; they tend to focus echo. The two best rooms I can remember for hearing music were the old Exeter Hall, a wide parallelogram with the seats going up in a slope from front to back (the plan adopted also by Wagner in his Bayreuth theatre), and the Liverpool Philharmonic Hall, also a parallelogram, with a flat floor, and a flat ceiling with a cant at the walls, and the surface broken up by a cross rib pattern in relief. The sloping floor, of course, prevents the room for being used for balls or receptions, which is a practical objection, but it is an excellent way of seating an audience for hearing well, and would be still better if the section were a long curve, flattest near the orchestra and ris-



"ELMSTEAD," LIMPSFIELD: PLANS. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

ing more quickly at the rear. To enable, however, so large an audience as 3,000 to hear well, it may be admitted that something like a horseshoe form is necessary, otherwise some of the audience would be thrust too far away from the performers; but both the fronts of the galleries and the wall at the top should be broken up in plan—the wall especially, to prevent their concentrating an echo on any focus in the hall. I noticed a remark about the Usher Hall design that there was nothing to check the progress of sound. It is sometimes necessary to check the progress of sound. Either along a long side wall or a circular wall, sound will run in some peculiar manner, which produces a wave back at the end of its course. Both a straight wall and a circular wall should be broken up, by pilasters or otherwise, to check this. The author of the second premiated Usher Hall design has adopted a complete circle for his plan. There could not be a more risky form for a concert-room; it would be sure to make echo. The whispering gallery at St. Paul's furnishes an object-lesson in this. And the curve, though a flat one, of the roof of the accepted design is a very doubtful form; at events, it must not be left a smooth, unbroken surface—it will be almost certain to make echo if it is. The flat, curved section of the Albert Hall skylight made the building almost impossible for music, owing to the echo, until the velarium was hung under it; one of the examples of the use of textiles in absorbing echo.



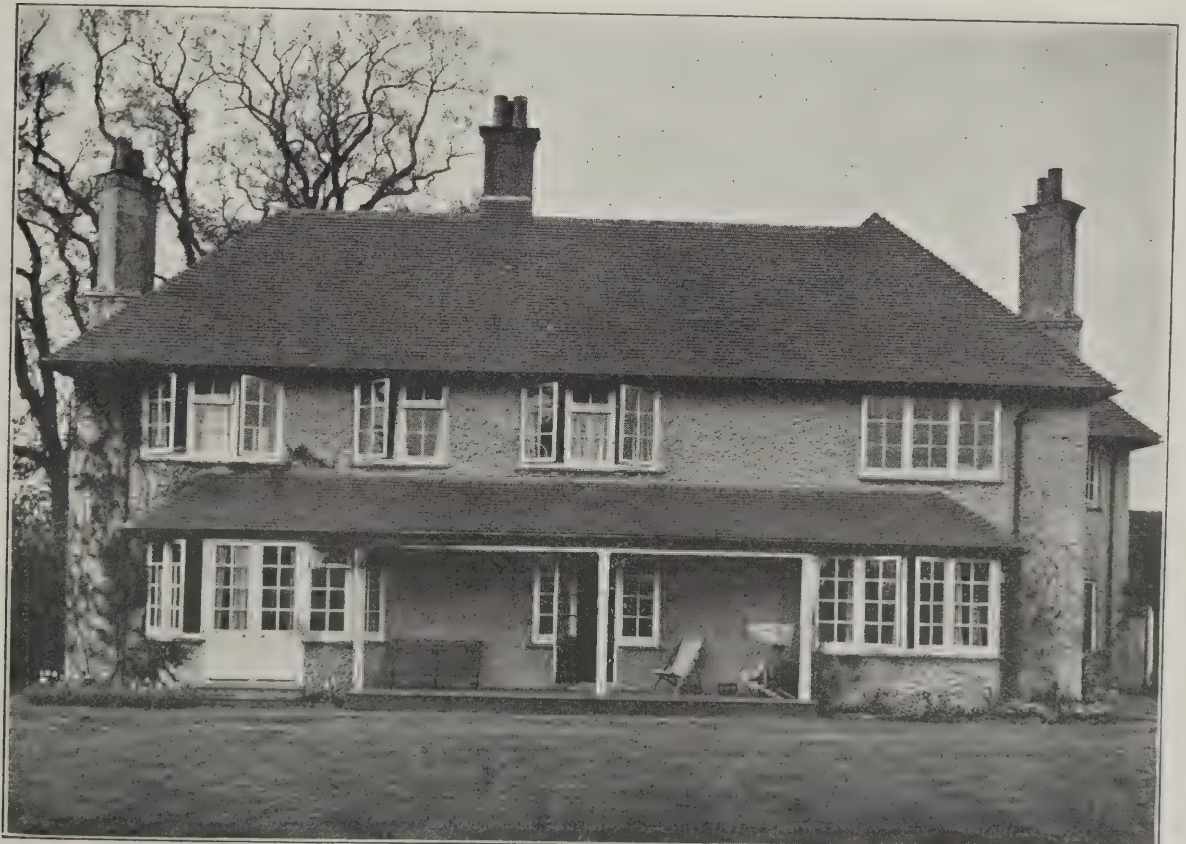
This house is built for a literary man, and stands among old elm trees on the edge of the common. The tiles found on an old barn which formerly occupied the site were used in the present structure.

"ELMSTEAD," LIMPSFIELD: ENTRANCE FRONT. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

The exterior architecture of the selected Usher Hall design is satisfactory without being very remarkable; it may, however, be pointed out that the lantern on the roof, as now sketched, is quite out of scale—that is to say, it is too large for the kind of thing it professes to be, and therefore reduces the apparent scale of the building. As far as the auditorium is concerned, the building seems likely to be a success, if echo from the curved ceiling can be prevented; but the arrangement of orchestra and organ ought to be entirely reconsidered. The second premiated design is a much more interesting and striking piece of architecture externally, but its plan is out of the question for a concert hall, and it is certainly matter for comment that the second place in a competition for a large concert hall should have been awarded to a plan which everyone who has given any attention to the subject of buildings for music must know to be a mistake.

Considering this, and considering also the extraordinary mistakes which have been made, here and elsewhere, in the planning of the orchestra and the placing of the organ in large concert rooms, it seems not unreasonable to suggest that it would be wise in such cases for promoters and architects, before planning an orchestra, to take the opinion of some one who knows something about music, and the conditions under which it is produced.

H. H. STATHAM, F.R.I.B.A.
Fellow of the London Philharmonic Society.



This view shows the garden front, the ground floor rooms looking on to it, being (from left to right) the drawing-room, the study, and the dining-room.

"ELMSTEAD," LIMPSFIELD. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

COMPETITIONS.

Eccles Bath Extensions.

Messrs. Sydney Moss, T. J. Bushell, G. H. Kay, Fred. W. Dixon and Son, John Knight, Potts and Hennings, N. H. Hacking, Brameld and Smith, and Ernest Woodhouse have been selected to compete for the above.

Archibald Council School, Middlesbrough.

The report of the Assessors, Messrs. T. Mellarde, Read and Son has been received concerning the competition for the above school, which is to be erected in Ayresome Green Lane. The designs of Messrs. Clarke and Moscrop, Middlesbrough, were selected. Second place was awarded to the design of Mr. James Forbes, Middlesbrough; third place to Messrs. Kitching and Lee, Middlesbrough; fourth place to Messrs. Clarke and Moscrop's alternative design; fifth place to Mr. James Forbes's alternative design; sixth place to Messrs. Bottomley and Welburn, Middlesbrough; and seventh place to Mr. W. G. Haslock, Middlesbrough. The school, which is to provide accommodation for 1,450 children, is estimated to cost £14,150.

LIST OF COMPETITIONS OPEN.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglican Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. The competition will be confined to architects having an office or residing in the areas of the following education authorities: Cambridgeshire, Isle of Ely, Lowestoft, Norfolk, Norwich, East Suffolk, and Great Yarmouth. D. O. Holme, clerk of the Governors, Castle Chambers, Norwich.

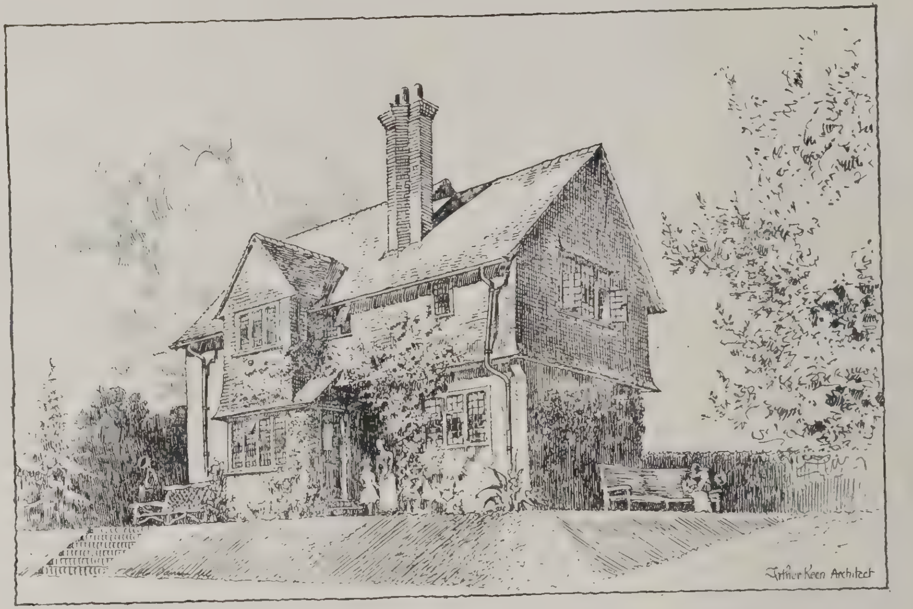
SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—The U.D. Council of Kingstown offer premiums of £50 and £20 respectively for the two best designs for the above to be erected at Lower George's Street. Particulars from Mr. J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 5. SHERINGHAM COUNCIL OFFICES.—Architects desirous of submitting designs for the council offices proposed to be erected at Sheringham may obtain full particulars on written application, accompanied by a stamped addressed envelope, to Edgar C. Rolfe, Clerk of the Council, Church Street Chambers, Sheringham.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects) for a new secondary school to accommodate 150 boys. Particulars, together with site plan, can be obtained from Mr. A. F. Kidson, town clerk, Folkestone, on payment of a deposit of £2 2s., which will be refunded on the receipt of a bona-fide design being submitted.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, together with a plan of site and sections at ground level, may be obtained from the engineer and surveyor, Mr. Samuel J. Harpur, Town Hall, Maesteg. Designs must be deposited at my office by noon on Monday next, September 19th. Two premiums are offered, namely, 25 guineas and 10 guineas, as first and second respectively.



This cottage was built for a literary man in a quiet part of the country overlooking one of the finest views in Surrey. The walls are of local stone, covered with rough-cast.

HEADLAND COTTAGE, LIMPSFIELD. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

SOCIETIES' REPORTS.

The Institution of Gas Engineers.

The visit of the German Association of Gas and Water Engineers to Great Britain, which was postponed on account of the death of King Edward, has now been arranged to take place during the week commencing October 2nd next. The visitors are to be the guests of the Institution of Gas Engineers, the Gas Light and Coke Company, the South Metropolitan Gas Company, the Croydon Gas Company, and the Corporations of Edinburgh and Glasgow respectively, of which latter city the engineer of the gas department, Mr. Alex. Wilson, M.Inst.C.E., is now the president of the Institution of Gas Engineers.

Manchester Society of Architects.

On the 23rd of July, the fourth Saturday summer visit took place, when the members had a long afternoon's sketching at Nantwich. The fourteenth and fifteenth century parish church, with its beautifully vaulted chancel, fine choir stalls, exquisite buttresses, and well-known octagonal lantern, is one of the architectural gems of Cheshire, and naturally received most attention. Less famous, but deeply interesting in a quiet way, are several examples of domestic work of Georgian and earlier date, which show most admirable proportion and a nice feeling for scale, their architectural charm giving keen pleasure, although realised through the simplest possible means. Mr. A. E. Corbett was the leader.

On the following Wednesday a large number of members under Mr. J. H. Woodhouse's leadership visited "The Acorns," Fallowfield, where, by the kind courtesy of Mr. W. L. Behrens, they viewed the extensions and alterations to the house by Messrs. T. Worthington and Son, the wonderful collection of works of Japanese art housed in the galleries, and the fine specimens of furniture and objects of art of many periods and nationalities in the various rooms. It was hardly possible in one short evening to realise the magnitude and value of Mr. Behrens' collection, and time did not allow for the beauty of more than a very small proportion of the thousand of objects to be individually appreciated. The original work of Messrs. Worthington is no less interesting for the skilful way in which the fine old panelling which lines the main gallery, and the great fireplace, have been adapted to the building by the architects.

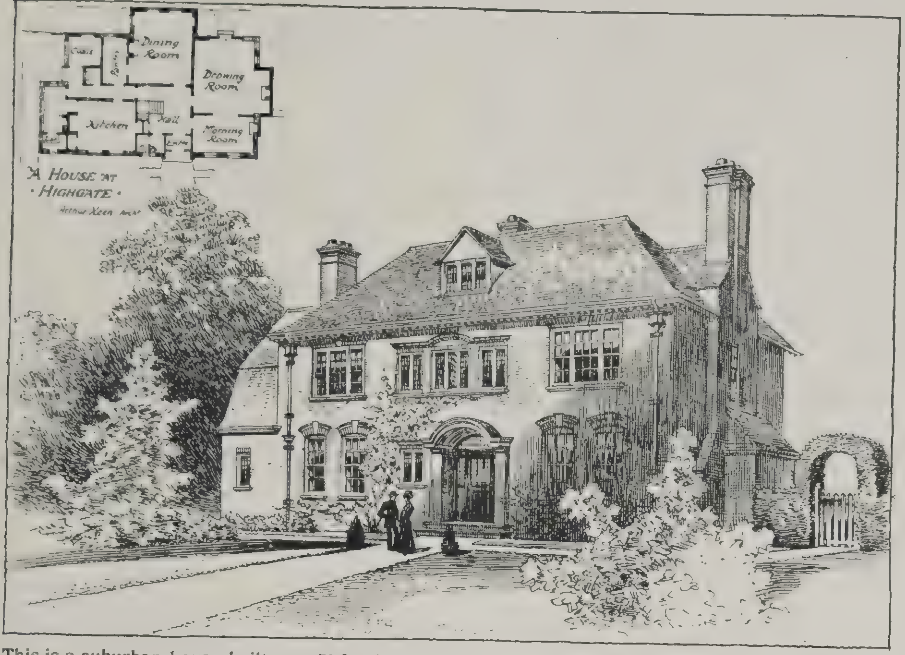
Afterwards the party proceeded to the "Oaks," the new Hall of Residence for women students of the University, also the work of Messrs. Worthington and Son. One wing of the quadrangle is almost complete, and forms a delightfully grouped building, one of the most striking features of which is the successful use of the various materials employed: Ravenhead bricks, Alderley stone, and Cotswold slates to the roof. The windows are sashes and frames, set near the face of the wall and painted white. The party was conducted over the building by Mr. Percy S. Worthington, M.A., the President of the Society.

R.I.B.A.

THE JUNE EXAMINATIONS.

The Preliminary.

In the preliminary examination one hundred and seventy-four candidates were admitted, and claims for exemption from sitting were allowed to the number of forty-six. Of the remaining 128, 87 passed and 41 were relegated. The passed candidates, with those exempted—making a total of 133—are as follows:—E. Adams, Oxford; L. M. Angus, Hampstead, N.W.; S. D. Appleby, Bolton; H. D. Archer, Chelsea, S.W.; J. R. Ashworth, Accrington, Lancs.; G. P. Bainbridge, Balham, S.W.; A. Bamford, Chesterfield; C. A. R. Barry, Victoria Street, S.W.; G. C. Beath, Aberdeen; E. Belfield, Church End, Finchley; T. P. Bennett, Kilburn, N.W.; H. Berry, New Barnet; G. Bevan, jun., Bridgend, Glam.; E. R. Bill, Shrewsbury; T. S. Bowes, Roath, Cardiff; W. H. Brigden, Sittingbourne; E. H. Brown, Halstead, Essex; W. Brown, Stretton, Stafford; E. Cavanagh, Upton Manor, E.; R. S. Cave, Oxford; R. Cawkwell, Wincobank, Sheffield; A. Chandler, Haslemere, Surrey; W. W. T. Ching, New Cavendish Street, Portland Place, W.; T. H. Chalkley, Bermondsey, S.E.; L. D. A. Church, Epping, Essex; H. H. Clark, Walthamstow, N.E.; L. H. Clarke, Harrogate, Yorks; G. S. Cook, Baulkham Hills, via Paramatta, Aust.; R. T. Cooke, Griffiths Town, near Newport, Mon.; H. T. Cooksey, Islington; C. E. Cornish, Pilton Bridge, Barnstaple; J. P. Craig, Johnstone, near Glasgow; F. M. Craik, Glasgow; A. S. Crumpler, Bournemouth; J. A. Dartnall, Wanstead; E. C. Davies, Bedford; H. F. Davies, Chester; J. Dickinson, Bolton-on-Dearne, near Rotherham; H. U. Diplock, Clapham Junction, S.W.; C. B. Dixon, Darton, near Barnsley; A. Douglas, Ayr; L. G. A. Dubuis, Hugh Street, Eccleston Square, S.W.; J. R. Edwards, Bristol; H. W. Egerton, Burton-on-Trent; W. J. Evans, Irlam-o'-th'-Height, Manchester; S. H. Fisher, Barrington Road, S.W.; A. A. Foote, Edinburgh; J. E. Foster,



This is a suburban house built on a 70 ft. plot of ground, and comprises a good deal of accomodation at a very moderate cost.

"STUDLAND," HIGHGATE. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

Preston, Lancs.; G. E. Francis, Sydenham, S.E.; E. G. D. Fromant, Hadleigh, Suffolk; C. F. Fryer, Chiswick, W.; R. E. Furse, Taunton; E. W. Glass, Dundee; A. Gordon, Bucksburn, Aberdeenshire; R. D. Graham, Carrickfergus, Co. Antrim; F. Green, Birmingham; D. M. Griffin, Birkenhead; F. W. G. Hall, Norwich; H. J. Harding, Cardiff; P. Hardy, Letchworth, Herts; W. Harkess, Bedford Park, W.; C. F. W. Haseldine, Attenborough, Nottinghamshire; F. S. Haynes, Leytonstone; A. Henderson, Dundee; J. M. D. Henderson, Ayr, N.B.; R. C. Henderson, Aberdeen; H. L. Hickmott, Bristol; G. H. G. Holt, Brighton; T. W. Hughes, Bangor; R. Humphreys, Maesteg, Glam.; A. J. Hyde, Manchester; G. H. Hyde, Southport; S. Jones, Swansea; G. Kenworthy, Uppermill, near Oldham; A. O. Kersey, Great Bealings, near Woodbridge, Suffolk; R. Kerby, Dulwich; H. A. J. Lamb, Tonbridge; J. B. Lawson, Chelsea, S.W.; A. E. Lees, Sherwood, Nottingham; C. M. Leys, High Wycombe; D. W. Locke, Newton Abbot; W. W. Locke, Balham, S.W.; R. M. Love, Barton-on-Humber, Lincolnshire; H. Mackey, Fulham, S.W.; J. Macpherson, Nottingham; A. P. McConnell, Dartford, Kent; C. W. Mercer, Llanelly; G. J. Moss, Buckhurst Hill, Essex; C. A. Murray, Sunderland; A. Needham, Gainsborough; A. Nisbet, Portobello; L. A. Norris, Wandsworth, S.W.; R. B. Nundi, Regent's Park Road, N.W.; W. S. Owen, West Hampstead, N.W.; B. R. Penderel-Brodhurst, Gunnersbury; W. F. Pennington, Kendal; G. Perrin, Moseley, Birmingham; W. G. Pidsley, Exeter; R. Pollard, Accrington, Lancs.; N. H. Pratt, Sneinton, Nottingham; R. H. Preston, Pendleton, Manchester; H. C. Richardson, Ashton-on-Mersey, Cheshire; J. Robb, Edinburgh; W. A. Robertson, Dundee; S. Rubery, Wolverhampton; W. G. Saunders, Brynhyfryd, Swansea; R. Schofield, Halifax; H. J. Scoles, Torquay; J. E. Shakeshaft, Chorlton-cum-Hardy, Manchester; G. Shenstone, Leytonstone; G. Shuffrey, Ealing, W.; M. Sidki, Victoria Park; N. W. Slater, Wolstanton, Staffs; H. M. Smail, Broughty Ferry, Scotland; W. C. Spencer, Nottingham; A. P. Stoner, Northampton; A. E. Stott, Liverpool; T. P. C. Stuttaford, Plymouth; E. Tanner, Gravesend; T. S. M. Terrace, Dysart, Fife; F. M. Tozer, Maidenhead; J. Turnbull Ayr, N.B.; Sybil Aimée Vincent, Camberley, Surrey; L. H. Walker, Holland Road, W.; R. S. Wallace, Marlborough Place, N.W.; A. G. Wallis, Northwich, Cheshire; E. L. Watson, St. Albans; J. D. Watt, Westcliff-on-Sea, Essex; S. Welsh, Forfar; L. G. Whitbread, Stalybridge; L. Whitehouse, Warrington; E. Willson, Southport; P. Wilson, Hunts Cross, Liverpool.

Intermediate.

In the Intermediate Examination, qualifying for registration as *Student R.I.B.A.*, one hundred and thirty-three candidates were examined, 48 passed and 85 were relegated. The successful candidates, who have been registered as *Students R.I.B.A.*, are as follows, their names being given in order of merit as placed by the Board of Examiners:—H. W. Brittan, Croydon; H. A. Mobbs, Oulton, nr. Lowestoft; T. Macgregor, Dunfermline; J. C. P. Toothill, Sheffield; A. T. Hardman, Northam, nr. Potters Bar, Herts; F. A. Crouch, Hove, Brighton; A. E. Lowes, Newcastle-upon-Tyne; W. G. Thoms, Nottingham; T. G. Scott, Lincoln's Inn Fields, W.C.; H. Young, Portsmouth; R. Anderton, Preston, Lancashire; W. Benner, Nottingham; G. H. Gibbs, Westbury-on-Trym, Bristol; H. H. Archer, Derby; W. C. Young, Heaton Moor, nr. Stockport; A. Pease, Horsham; G. E. Charlewood, Newcastle-on-Tyne; W. G. Lofthouse, King's Heath, Birmingham; A. T. Phillips, Harpenden, Herts; T. G. Ellis, Wood Lane, W.; E. Fincham, Marks Tey, Colchester; S. K. Bhedvar, Lee, S.E.; H. Baker, Selly Hill, Birmingham; F. W. Moore, Riddlesden, Keighley; F. Ratcliff, Sheffield; A. L. N. Russell, Vincent Square, S.W.; G. W. Bacon, Thames Ditton; W. A. Batty, Hull; W. S. Betts, Lavender Hill, S.W.; J. A. Cheston, Bloomsbury Square, W.C.; L. E. Cole, Hampstead, N.W.; A. B. Dailey, 89, Larkhall Rise, Clapham, S.W.; H. Dearden, jun., Battersea Park; W. E. Edge, Edgbaston, Birmingham; K. Glover, Earl's Court, S.W.; A. V. Heal, Cambridge; B. Hughes, Woldingham, Surrey; W. Ingham, Derby; A. E. Mayhew, 20, Gladsmuir Road, Highgate, N.; C. McLachlan, Lewisham, S.E.; S. W. Milburn, Sunderland; W. H. R. Oates, Lightcliffe, nr. Halifax; H. C. Perry, Bournemouth; A. Pratten, Swansea; C. T. Sherwin, Stafford; H. S. Taylor, Kilburn, N.W.; E. J. Thomas, Maesycwmmer, nr. Cardiff; S. H. Williams, Sheffield.

Exemptions from the Intermediate Examination.

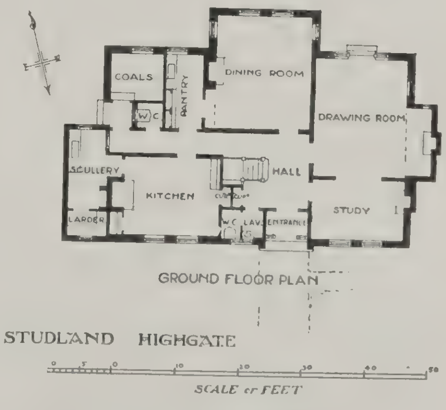
The following Probationers, possessing the qualifications required by the regulations, have been exempted by the Council from sitting for the Intermediate Examination and have been admitted as *Students R.I.B.A.*:—

L. M. Angus, Hampstead, N.W. (Manchester University); W. S. Owen, West Hampstead, N. W. (Manchester University).

The Final and Special.

In the Final and Special Examinations 123 candidates were examined, 54 passed, and were relegated. The following are the names and addresses of the passed candidates, † prefixed to a name signifying that the candidate entered for the Special Examination, which is designed for architects in practice and chief assistants exempted by the Council from the Preliminary and Intermediate Examinations and from submitting Testimonies of Study:—

†C. T. Armstrong, Charing Cross, S.W.; D. W Ayre, Cork, Ireland; †B. C. E. Bayley, Surrey; J. C. Beare, Newton Abbot; A. St. Hill Brock, Sutton, Surrey; F. H. Bulmer, Balham, S.W.; †J. M. Calder, Rochdale; A. E. Catt, Kingston-upon-Thames, Surrey; H. J. Chetwood, Waltham Abbey, Essex; A. R. Cornwell, Hampstead, N.W.; J. B. F. Cowper, Manchester; H. Cox, South Hampstead, N.W.; H. B. Elkington, Laurence Pountney Hill, E.C.; W. A. M. Fiddaman, South Norwood Hill, S.E.; T. F. W. Grant, Hampstead, N.W.; J. H. Gray, Hammersmith Terrace, W.; †W. H. Gummer, Cartwright Gardens, W.C.; W. H. Guntor, Bromley, Kent; A. W. Hall, Ealing; J. L. Hampson, Bolton; F. H. Heaven, Bridgend, Glam.; S. T. Hennell, Wandsworth Common, S.W.; S. W. Hill, Clifford's Inn, E.C.; G. Hollins, jun., Newcastle, Staffs; H. R. Hooper, Ipswich; W. Hoyle, Gravesend, Kent; †R. M. F. Huddart, St. Mary Abbott's Terrace, W.; R. Jaques, Harrogate; W. Keir, Stockwell, S.W.; †J. H. Kennard, Verulam Buildings Gray's Inn, W.C.; D. C. Leigh, Weaverham, Cheshire; S. G. Livock, Portsea Place, Hyde Park, W.; A. G. Lynham, Northampton; E. B. Mauffe, B.A., Oxon, Old Buildings, Lincoln's Inn, W.C.; P. W. Mulready, Victoria Street, Westminster, S.W.; E. G. Newnum, Nottingham Place, W.; B. Oliver, Southampton Street, Bloomsbury Square, W.C.; V. C. B. Reis, Highgate Road, N.W.; T. H. Rhodes, Northwood, Middlesex; B. Robson, Birmingham; H. J. Rowse, Great Crosby, Liverpool; H. Savage, Bushey, Herts; L. A. D. Shiner, Jermyn Street, Haymarket, W.; H. N. Smith, Lewisham Hill, S.E.; †A. L. Snow, Ovington Gardens, S.W.; E. W. Stubbs, South Croydon; T. A. Swan, Edinburgh; †S. D. Topley, Cheapside, E.C.; H. G. Turner, Thornton Heath, Surrey; R. L. Wall, Beddington Lane, Surrey; F. C. Webster, Primrose Hill, N.W.; G. C. Wilson, Streatham, S.W.; R.



"STUDLAND," HIGHGATE.
ARTHUR KEEN, F.R.I.B.A., ARCHITECT

Wilson, Eltham, Kent; F. Woods, Maidenhead.

Colonial Examinations : Special.

The following have passed the Special Colonial Examination qualifying for candidature as *Associate R.I.B.A.* held in Toronto and Johannesburg respectively in November last:

A. N. Cantin, West Montreal, Canada; H. R. Dowswell, B.A., Quebec, Canada; A. G. Monsbourgh, Johannesburg, S. Africa.

Colonial Examinations: Intermediate.

The following have passed the Intermediate Examination held in Sydney, New South Wales, in November 1909, and have been registered as *Students R.I.B.A.*:—

F. E. Boddington, Brisbane, Queensland; G. S. Cook, Baulkham Hill, via Paramatta.

Election of Licentiates R.I.B.A.

The following have been elected Licentiates of the Institute in accordance with the provisions of By-law 12:—

(Elected July 4th.)

Balfour Abercrombie (Glasgow), John Standen Adkins, Percy King Allen (Tunbridge Wells), Francis Van Baars, Charlie Owen Baines (Paignton), Thomas Henry Baker (Colchester), Thomas Christopher Thomas Barker (Scarborough), Fank Bell (Manchester), James Frederick Carruthers Bell, Thomas Morgan Bevan (Derbyshire), Hugo Ritchie Bird (Brentwood), Ellis Rawson Birks (Sheffield), John Bowley (Hastings), Walter William Bull, Arthur William Bungard, Arthur John Pearson Carrington, Alcide Chausse (Montreal, Canada), Stephanos Constanduros, Harold Cordery (Manchester), Joseph William Denington, Sothern Dexter, Charles Turnbull Ewing (Crieff, N.B.), William Finlayson, (Crieff, N.B.), James Edwin Forbes, William Henry George, (Ashton-under-Lyne, George Francis Grimwood (Monmouth), James Mitchell White Halley, Horace Ireton Hands (Birmingham), Thomas Francis Hewitt (Lincoln), Edwin Morcombe Hick, David Henry Hunter (Glasgow), Charles Henry Isaacs, John Henry Jacques, John Alfred James (Port Talbot), Thomas Jenkins, J.P. (Burton-on-Trent), Sydney Jupp, Charles King, George John Joseph Lacy, Arthur Landstein (Liverpool), Matthew George Martinson (Newcastle), Harvey Mennie (Aberdeen), John Galt Mitchell (Edinburgh), Thomas James Morgan, William James Marmaduke Morrish (Dorset), Frederick Charles Moscrop-Young, James Neill (Leeds), Ernest Ogden (Manchester), Samuel George Parr, F.S.I., James Alfred Payne, Ernest Llewellyn Percival (Birmingham), Harry Reginald Poulter (Camberley), George Povey (Birmingham), Ernest Wyatt Ralph (Wigan), Alfred Rangeley (Manchester), Sydenham W. Richards, Benjamin Sattin, Blunden Shadbolt (Horley), John Shanks (Kirkintilloch, N.B.), Lewis William Simpson, Renfrew Spencer (Nottingham), Arthur John Stedman (Farnham), John Steel (Wishaw, N.B.), Donald McKay Stoddart (Glasgow), John Duncan Tate, Albert John Thomas, Henry Hugh Walford, Samuel George Walker (Nottingham), Daniel West, Frederick White, Edward Wilkins, Howard John Wonnacott, P.A.S.I., Francis Houlton Wrench, Assoc.M.Inst.C.E. (Sheffield), Gordon Lorimer Wright (Edinburgh), Lionel Stanley Youngman (Bournemouth).

(Elected July 18th.)

Cecil Alder (Johannesburg), Fred Baker (Lincoln), Howard Leslie Baker, William Joseph Ballard (Birmingham), Roger Bradley Barker (Arnside, Westmorland), William Vallance Betts (Nottingham), James Stirling Boyd (Glasgow), George Christopher Copestick (Derby), Henry Elwig, jun. (Tunbridge Wells), Frederic Snowden Hammond, Joseph William Berry Harding (Liverpool), John Edward Henderson, Frederick James Hobson (Rawtenstall, Lancs.), John Alfred Taylor Houston (Glasgow), George Hutchins (Chester), Martin Thomas Ernest Jackson, Thomas Martin (Coatbridge, N.B.), Izmay Massey (Plymouth), Alfred Young Mayell, Albert Emanuel Pearson (Cheltenham), Charles Pickford, William Harold Poole (Maidstone), Archibald Frederick Preston, Frank Harrington Chas. Rimmington (Liverpool), William Pinchard Delane Stebbing, Albert Perkins Stokes, Joseph Ernest Stout (South Shields), Frank Rice White (Basingstoke), Walter Harry Woods (Long Eaton, Derby).

Council Appointments to Standing Committees.

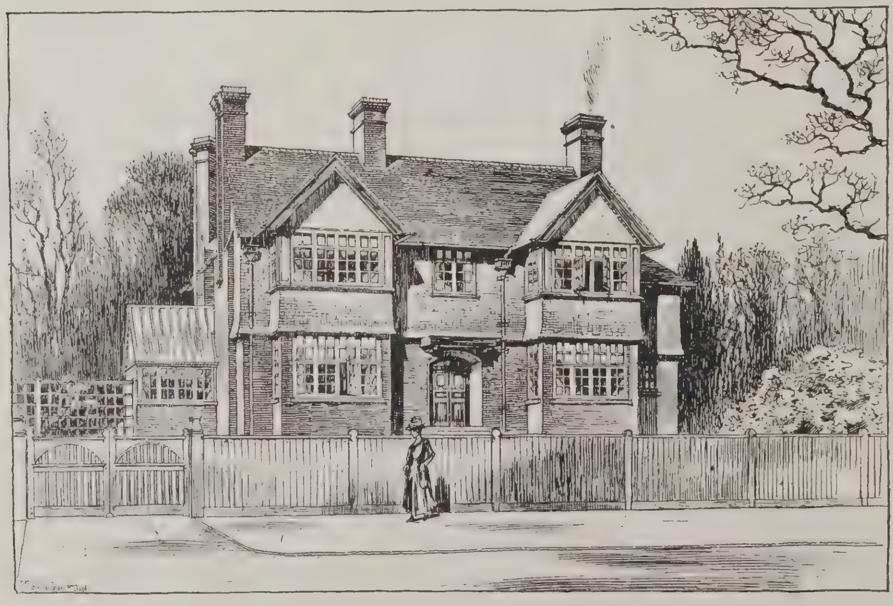
The following appointments to Standing Committees have been made by the Council in accordance with By-law 51:—

Art.—Messrs. T. Raffles Davison (H.A.), W. A. Forsyth (F.), Sir George Frampton, R.A. (H.A.), S. S. Reay (F.), Sir Aston Webb, C.B., R.A. (F).

Literature.—Messrs. Francis Bond, M.A.Oxon (H.A.), J. D. Crace, F.S.A. (H.A.), W. Curtis Green (F.), Sir A. Brumwell Thomas (F.), E. P. Warren, F.S.A. (F.).

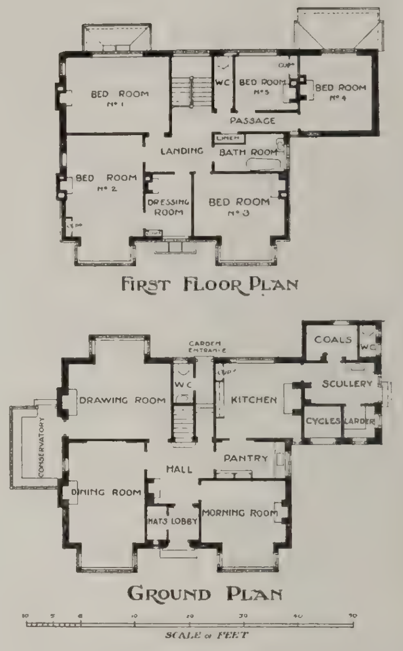
Practice.—Messrs. Ernest Flint (F.), A. W. Moore (F.), Herbert A. Satchell (F.), W. Henry White (F.), W. Gilmour Wilson (F.).

Science.—Messrs. R. J. Angel, M.Inst.-C.E. (A.), C. E. Hutchinon, (A.), F. N. Jackson (H.A.). F. T. Reade (H.A.), A. T. Walmisley, M.Inst.C.E. (H.A.).



This house is of a type similar to "Studland," Highgate, illustrated on the opposite page.

"PENKERROW," ENFIELD. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.



"PENKERROW," ENFIELD: PLANS.

ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

NEW BUILDINGS.

PROPOSED.

Aberdeen.—A meeting is to be called by the Bishop to set formally on foot the movement for a cathedral church in Aberdeen. The idea is to extend St. John's Church, and by acquiring some property secure an entrance from Crown Street. To carry out the scheme in an adequate manner, the cost, it is stated, will be about £30,000.

Denbigh.—The Denbigh Town Council has decided to apply to the Local Government Board for a loan to carry out a scheme for the erection of a new public hall and market, the sum not to exceed £12,000.

Holywell Green (Halifax).—The West Riding Education Authority have decided to erect a new school at Holywell Green, to accommodate 400 scholars, at an estimated cost of £4,800.

Lancaster.—At a recent meeting of the Lancaster Town Council it was reported that the Board of Education had approved the plans for a new elementary school to be erected on the High Street estate, at a cost of about £20,000, and that the Lancashire County Council would shortly proceed with the erection of a secondary school for girls, costing about £15,000.

Letterkenny.—A Local Government inquiry has been held in the Courthouse, Letterkenny, to a petition by the Urban District Council to the Local Government Board asking for an order authorising the acquisition of land and an application for their sanction to a loan of £5,800 for the purpose of erecting working-class lodging-houses under the Housing of the Working Classes (Ireland) Acts, 1890 to 1908, and the Public Health (Ireland) Acts, 1878 to 1907.

Lichfield.—A Local Government Board inquiry has been held at Lichfield into an application of the City Council to the Board for sanction to borrow £3,300 for works of sewerage extension at Gallow's Wharf, Berry Hill, Knowle Lane, and Short Butts Lane, a suburb of the city in the direction of Whittington Barracks.

Liverpool.—A beginning has been made with the building of the Lathom Memorial Chapter House of Liverpool Cathedral, which is to be erected by the West Lancashire Province of Freemasons in memory of the first Earl of Lathom (Grand Master of the Province), the estimated cost being £10,000.

London, E.—The tender of Messrs. Cubitt and Gotts, of Westerfield, near Ipswich, for the erection of an institute in connection with St. Michael's Church, Little Ilford, has been accepted, and building operations have already begun. Messrs. Cubitt's price was £2,100, being the lowest tender received.

London, W.—The foundation-stone of the new buildings for cancer treatment and research which are to be erected at the Middlesex Hospital, has been laid by Prince Francis of Teck. The buildings, which will be of brick and Portland stone, will cost about £50,000, and are intended to form the Barnato-Joel Memorial. Mr. Edwin T. Hall, F.R.I.B.A., is the architect.

London.—At the recent quarterly meeting of the magistrates for the County of London at Newington, the following resolution was unanimously passed:—(1) That it is absolutely necessary, in the opinion of this Court, that a central building for the Sessions of London should be at once constructed; (2) that any building on the south side of the Thames will not, in the opinion of the Court, be convenient for the purposes of the work of the county. The Local Government Committee of the London County Council had suggested a scheme for the rebuilding of the present Sessions-house at Newington, and declined on the ground of expense to select a site on the north side of the Thames. The justices had also informed the committee that unless the London County Council carried out their wishes they would exercise their power to the fullest extent, select a site, and erect a building, leaving the London County Council to pay the bill.

London, S.W.—At a recent meeting of the Middlesex County Council, at the Guildhall, Westminster, the Extension Committee presented a report regarding the proposed Guildhall enlargements, showing that the plans provide for two new courts, 40ft. by 36ft. and 40ft. by 32ft. respectively, with a public waiting hall 42ft. by 30ft. (the dimensions of the present courts are 36ft. by 31ft. and 42ft. by 24ft., and the existing public waiting hall is really only the corridor adjoining the courts); a new Council chamber 50ft. by 36ft., as against the present Council chamber of 36ft. Summarised, the total floor area of rooms available for business purposes in the existing buildings approximates 17,600 square feet, and the accommodation provided on the plans now submitted amounts to 42,491 square feet. The cost of the new buildings and the alterations to the existing structure is estimated at £68,000, and the time required to carry out the works will not exceed two years. The Committee recommended the adoption of the plans submitted, and that tenders be invited, to which the Council agreed.

Manchester.—The inadequacy of the Council Chamber of the Manchester Town Hall to meet the requirements of the present number of members has been under the consideration of the Town Hall Committee for several months. There have been at least two proposals—(1) to enlarge the Council Chamber and (2) to make arrangements for Council meetings to be held in the large hall. A sub-committee has had before it a proposal for the enlargement of the Council Chamber at a cost of £6,000. The consideration of this proposal stands adjourned.

Middlesbrough.—It is proposed to extend Albert Park by including 1,774 acres of meadow land belonging to the Middlesbrough owners on the east side of the park. The Middlesbrough owners have offered to accept £10,000 for it, and this in all probability will be accepted by the Middlesbrough Corporation. The proposed additional land is intended to be set apart for recreation and playground purposes.

Portobello.—The Edinburgh Town Council has agreed to purchase the property of Inverey House, High Street, Portobello, as a suitable site for a Town Hall for Portobello.

Sale (Manchester).—The Bishop of Chester has dedicated the new tower of St. Paul's Church, Sale, which has been erected at a cost of £1,700. Messrs. Roger Oldham and David Bird were the architects, and Messrs. Twyford and Sons, Stretford, the contractors.

Silsden (Yorks).—The Silsden Urban District Council and the Education sub-committee have decided to accept a plot of land off Skipton Road, for the erection of a proposed new school, the estimated cost of which is between £3,000 and £4,000.

Tunbridge Wells.—Further improvements to the South Eastern and Chatham Railway Station at Tunbridge Wells are foreshadowed, the Works Committee of the Town Council having received from the Company for consideration designs of what is suggested shall be carried out. The alterations concern the down side, and when completed should have a beneficial effect upon the general appearance of the Broadway. One of the most important of the proposals, it is understood, is the demolition of the old square clock tower, which has been a feature of the structure for many years. On this site something far more commodious will be erected, and it is intended to put up a row of shops and offices from that point towards Mount Pleasant.

IN PROGRESS AND COMPLETED.

Canton.—The Building and Sites Committee of the Cardiff Education Committee have accepted the tender of Mr. F. Bond, of Canton, amounting to £12,265 15s. 1d., for the erection of a new elementary school in Kitchener Road, Canton. The school is to accommodate 1,094 children.

Exeter.—A new United Methodist Church has just been erected at Mount Pleasant, Exeter, by Messrs. Westcott, Austin, and White, contractors, of Exeter, from the designs of Mr. Alfred J. Dunn, architect, Waterloo Street, Birmingham.

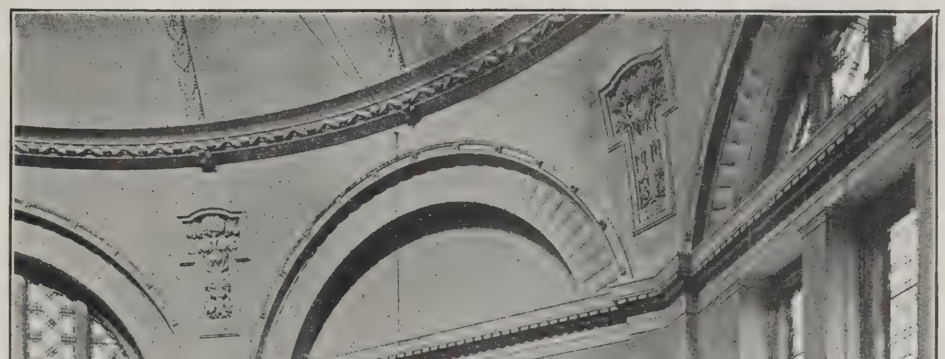
Keith.—The Post Office authorities have decided to build a new post office at Keith from the designs of Mr. F. D. Robertson, architect, Keith, and they have accepted the tender of Mr. William M'Connachie, Millwynd, for carrying out the work.

Leeds.—The foundation-stone has been laid of the new building for the Pearl Life Assurance Company. The total cost of the land and building will exceed £60,000. The work is being carried out from the design and under the superintendence of William Bakewell, F.R.I.B.A., architect.

Liverpool.—New buildings for the St. Paul's Eye Hospital, Liverpool, are being erected upon a site at the junction of Oldhall and King Edward streets. Mr. John Clarke, F.R.I.B.A., Liverpool, is the architect.

Llanrwst (N. Wales).—The following works are about to be carried out under the direction, and from the designs of Mr. D. Henry Roberts, architect, Llanrwst:—New residence for Mr. F. A. Charlton; alterations, and additions to the Glan Conway Cafe; alterations and additions to the Dafarn Fedw C.M. Chapel.

London, N.—The new infirmary, erected by the Edmonton Guardians on a site adjoining the workhouse, has been opened by Sir W. J. Collins, M.P. The premises consist, in addition to an administrative block, of two large pavilions of three floors, containing six double wards, with accommodation for nearly 400 beds, and an operating block. The contract price of the buildings was £72,724.



The panels in the spandrels of the dome were modelled by Mr. Richard Garbe, and illustrate the trees mentioned in the Bible.

KINGSGATE CHAPEL, HOLBORN. ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

London, N.W.—The new quarters of the Zoological Society in their Gardens, Regent's Park, have been built, after the plans and designs of Mr. John Belcher, R.A., near the northern end of Broad Walk. The buildings have been constructed, at a cost of about £17,000, of Portland stone for the lower storey, and of purple Luton bricks for the portions above, with a mansard roof covered with Delabole slates.

London, W.—The Duchess of Teck has laid the foundation-stone of the Church Army's new Central Labour Homes and Relief Depots in the Marylebone Road, which will involve a total expenditure of £21,000. The site was purchased some time ago for £12,000.

London, W.—The Cinema House, which has been erected by the London Cinematograph Company, Ltd., at 225, Oxford Street, has been opened by the Duchess of Portland. The building has been erected by Messrs. J. Chessum and Sons, from designs by Mr. Melville S. Ward, F.R.I.B.A. The frontage is of Portland stone on the main thoroughfare. The interior of the theatre has been carried out in the Jacobean style; the auditorium (which has a depth of 87ft. with a width of 65ft., and a height of 25ft.), being panelled in old oak (the work of Messrs. Elliott, of Newbury), relieved by a Xelstone frieze below the ceiling, and scrollwork in plaster by Messrs. Clark and Co., Westminster Palace Road; the floor will seat over 500 persons, while the cantilever circle affords accommodation for some 100 more. Access to the circle is provided by a staircase, leading up from the vestibule; while an additional staircase gives direct means of egress into Hill's Place. The plumbing and sanitary work was carried out by Messrs. Spooner and Smith, Aldgate, E.C. The electrical installation has been carried out by Messrs. Clements and Sons and Messrs. Vaughan's Engineering Installations Company, Ltd., 106, Fenchurch Street, E.C., while the wrought steel electroliers and other metal fittings are by Messrs. Peyton and Peyton. The upper part of the building contains a range of offices for the use of the company, and a restaurant.

London, W.C.—Messrs. E. A. Roome and Co., builders, of 36, Basinghall Street, E.C., and Urswick Road, Homerton, N.E., have secured the contract for the alteration and extension of the Italian Hospital, Devonshire Street, Queen Square, W.C., under the supervision of Mr. J. D. Slater, architect.

London, W.—Extensive additions to the Clarendon Hotel, on the Broadway, Hammersmith, are about to be commenced. The adjoining premises are to be converted into an entrance-hall, giving access to a new dining saloon connnected with the existing grill-room. The upper portion of the existing hotel will be taken down, and, in connection with the adjoining premises, converted into a Masonic Lodge room, with ante-rooms and banqueting hall. In the basement will be lavatory accommodation and cloak-rooms, heating chambers, cold storage, and wine cellars. The work will be carried out by Mr. A. E. Flexman, and the architects are Messrs. Lovegrove and Papworth, of Hammersmith, and Old Street, E.C.

London, S.W.—The building operations in connection with the new premises of the Michelin Tyre Company, situate in the Fulham Road, are progressing rapidly, and the building is expected to be completed towards the end of the present year. The site has an area of more than 22,000 square feet, and possesses four frontages.

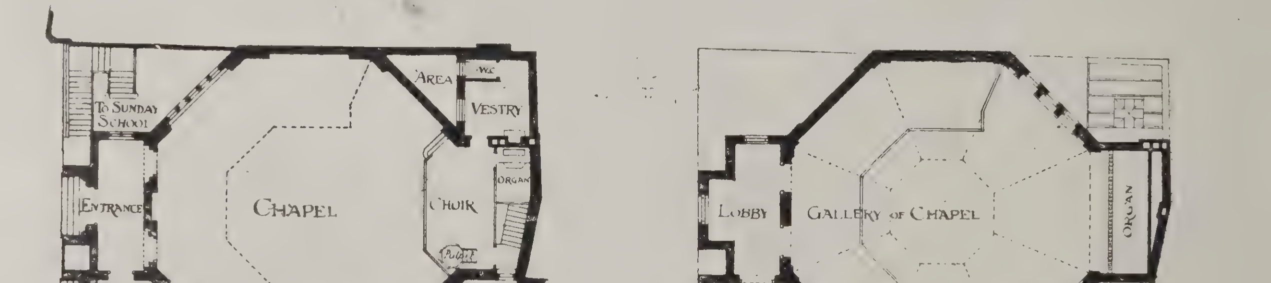
London, W.C.—The Palace Development Syndicate have completed arrangements for clearing the island site in the Strand, which has been acquired for the erection of a "Paris in London" Palace. There are many tons of old brickwork and rubbish to be removed before work on the foundation can be begun. The Palace will be the central part of the scheme, a permanent exhibition of French arts and industries will be housed in it, and a French club drawing its members from the French colony in London will have its headquarters there.

Lowestoft.—The building operations which have been in progress for many months past in connection with the General Post Office at Lowestoft, have now been completed. The building has been raised by the addition of a new floor its entire length, and other extensive additions have been carried out. Messrs. Charles Roper and Son, Ipswich, were the contractors for the work.

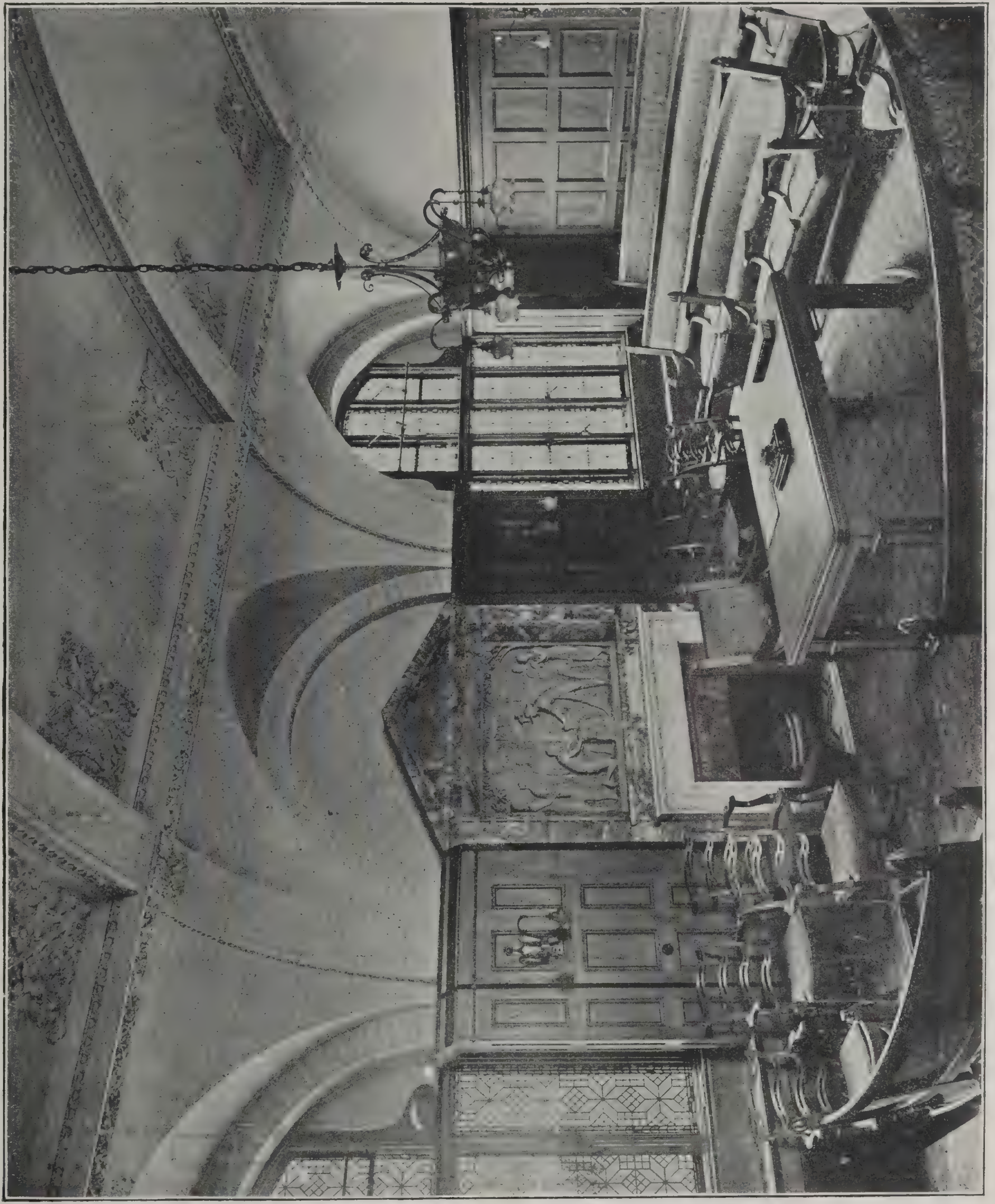
Macclesfield.—The completion of the tower of St. Peter's Church is being undertaken as a memorial to the Rev. William Sinden for many years vicar of the parish. The architect is Mr. Jabez Wright, and the builders Messrs. H. Berry and Sons.

Marsden.—A new elementary school, to accommodate 420 scholars, has been erected by the West Riding Education Committee, at a cost of £6,900. The building was designed by the committee's architect, Mr. J. Stuart.

Matlock Bath.—A portion of the new Kursaal, which is costing £11,000, or with the land over £20,000, has been opened to the public. The building stands in the centre of the town by the Fishpond, and has a front to the main road. Included in the Kursaal are the pump-room and a theatre, the pump-room being supplied by the local mineral thermal spring. The only part opened was the roller skating rink.



THE BAPTIST CHURCH HOUSE AND KINGSGATE CHAPEL, SOUTHAMPTON ROW, LONDON.
ARTHUR KEEN, F.R.I.B.A., ARCHITECT.



The walls have a dado of inlaid oak panelling, and the modelled plaster ceiling is the work of Mr. Laurence Turner. The terra-cotta panel in the chimneypiece is by George Tinworth.

THE BAPTIST CHURCH HOUSE, SOUTHAMPTON ROW, LONDON: THE COUNCIL ROOM.
ARTHUR KEEN, F.R.I.B.A., ARCHITECT.

Maidstone.—The Mayor has opened the new Council school situate in Union Street, which was erected at a cost of £13,418, and provides accommodation for 568 scholars. The building is of two stories, with a three-storey tower at the south-west corner. The walls are faced with red bricks, with Portland stone dressings, the roofs being covered with Nuneaton tiles. Mr. W. T. Burrows, Maidstone, was the contractor, and the heating of the school has been carried out by Messrs. J. F. Phillips and Sons, Westminster. The architect was Mr. T. F. Bunting, Borough Surveyor.

Middlesbrough.—206 houses are in course of erection at Middlesbrough, and 27 front streets and 35 back streets in course of construction.

Neath Abbey.—The foundation-stone has been laid of the Moriah Congregational Church, which is in course of erection at a cost of £1,200. Messrs. Lloyd and Martin, Skewen, are the architects, and Mr. Gorman, Neath, the contractor.

Penmaenmawr.—A new parish hall is in course of erection in the Vicarage grounds at a cost of £1,000. The architect is Mr. Harold Hughes, Bangor.

Porth.—A new wing to St. Paul's Church, Porth, has been consecrated by the Bishop of Llandaff, and will provide additional seating accommodation for 250 persons. The work has been carried out by Messrs. Bardoe and Cox, contractors, Cardiff, at a cost of £1,400, from the designs of Mr. G. E. Halliday, F.R.I.B.A., Cardiff, diocesan architect.

Romford (Essex).—The foundation-stones of the Carlisle Institute, in connection with Romford Congregational Church, have been laid. The building will be faced with Kentish rag and worked stone dressings. Mr. A. S. R. Ley, M.S.A., London, is the architect, and the contractors are Messrs. Dowsing and Davis, Romford.

Richmond (Surrey).—A recently completed extension of the sewerage works and additional pumping machinery constructed by the Richmond Main Sewerage Board were opened a short time ago. The new machinery has a capacity of 20,000,000 gallons daily. A new outfall has been constructed between the outlet channels and the river, doubling the capacity for discharge at high water. The new plant and sewers were designed by, and have been constructed under, the superintendence of Mr. William Fairley, Westminster, Engineer to the Board. The contractors were Messrs. L. W. Harrison and Co., Birmingham, and latterly Messrs. Monro and Co., Chancery Lane.

Royton (Oldham).—The new Parish Church Institute, built at a cost of £3,000 on a site obtained from Sir Joseph Radcliffe, has been opened by the Vicar of Royton. Mr. Ernest Woodhouse, of Manchester, was the architect.

Sheffield.—The new portion of the Glossop Road Baths was recently opened by the Lord Mayor. The improvement scheme in connection with the widening of Glossop Road provided the opportunity of acquiring the adjoining land, and the Council decided to erect first-class baths there, from plans prepared by Mr. Arthur Nunweek. Messrs. W. and A. Forsdike, Ltd., were the contractors.

Sheffield.—A new electric theatre has been erected in Union Street, from the designs of Messrs. Benton and Roberts. The contractors were: Messrs. Longden and Son, Ltd., Sheffield, building work; Messrs. Newton, Chambers and Co., Ltd., Sheffield, heating by low-pressure hot water on the patent "Cable" system; Messrs. Robinson and Hershaw, Manchester, constructional steelwork; and Mr. T. Peters, Sheffield, decoration.

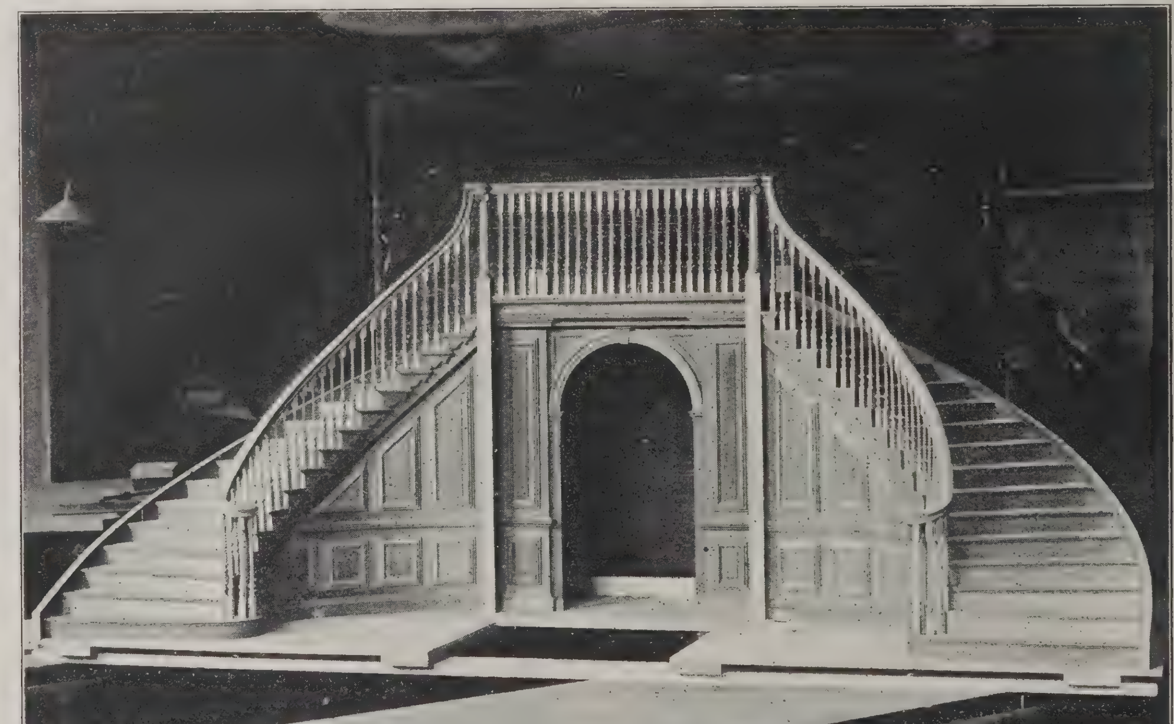
Stannington (Northumberland).—Considerable alterations and additions have been carried out in the Parish Church of Stannington, under the direction of Messrs. Fenwicke and Watson, architects, Newcastle. Part of the heavy wall on the north side of the chancel has been taken down, and an arch built to take its place, while a screen has been erected in the archway between the north aisle and the organ chamber. The building work has been carried out by Mr. Cuthbert, Stannington, the screen and carving being executed by Mr. Hedley, Newcastle.

Stirchley (Birmingham).—The foundation-stone has been laid of a new public swimming bath, situate on a site at the corner of Hazelwell Street and Bournville Lane, Stirchley, the gift of Messrs. Cadbury Bros. The exterior of the building will be of Accrington bricks and Grinsell stone, and the interior of glazed brickwork. The cost, inclusive of engineering, will be about £10,000.

Whalley (Lancs).—The contract for building the new asylum at Whalley has been awarded by the Whalley Visiting Committee of the Lancashire Asylums Board to Messrs. R. Neill and Sons, contractors, of Manchester, at the amount of £355,846. There were fifteen tenders. The contract is for the erection of buildings at the Asylum to accommodate 1,250 patients and for administrative building sufficiently large to deal ultimately with 2,000.

Winchester.—Extensive renovations have been carried out in the Chapter Room in the south transept of the cathedral, under the direction of Mr. T. G. Jackson, R.A. It occupies two-thirds of the west aisle of the south transept, the other portion, now choristers' practice room, being the treasury of the cathedral, and its arches of enriched Norman are presumed to be the work of Dr. Blois episcopate. The chapter-room floor had dry-rot, and had to be removed some months ago and the soil dug out. This has been done to the required depth, and the space filled with concrete, upon which are placed an oak-block floor. A Gothic wainscot has been designed round the walls of the area, but this does not in any way conceal the Norman arches, pillars, and masonry. At the south end are the sedilia for the dean and residentiary canons, and on either side are those for the greater chapter. The chapter-room proper is divided from the series of oaken cupboards by an open screen. The carved work is by Messrs. Brindley and Farmer. The flooring and the requisite attention to the old stonework of Norman time has been effected by Messrs. Thompson, of Peterborough.

Winnipeg (Canada).—The Board of Control of the City of Winnipeg has awarded the contract for a new bridge to carry Brown and Brant Streets over the Canadian Pacific Railway tracks at Winnipeg to the Cleveland Bridge and Engineering Company, Limited, of Darlington, the amount of whose tender for the superstructure was £41,000. The bridge will have a total length of 2,168ft., comprising one 340ft. span, two spans of 250ft. each, and five spans of 81ft. each, in addition to a number of small approach-spans. The bridge will accommodate a roadway 26ft. wide and two side walks, each of 6ft.



THE TRADES' TRAINING SCHOOLS. SPECIMENS OF WORK DONE IN THE HANDRAILERS' SHOP.

Whitley Bay.—The building of the new Theatre Royal has been completed, the construction being principally of ferro-concrete. Messrs. Davison and Miller were the contractors, and Messrs. Cackett and Burns Dick, F.R.I.B.A., the architects, all of Newcastle-on-Tyne.

Wilmslow (Cheshire).—The new Council schools have been opened and accommodation is provided for 700 scholars. The general contractors are Messrs. L. Brown and Sons, of Wilmslow, and the terra-cotta was executed by the Hathern Station Brick and Terra-Cotta Co. Mr. Herbert H. Brown, Manchester, is the architect.

Wrexham.—The new church of St. John the Baptist, built at a cost of between £6,000 and £7,000, the gift of Mr. John Jones, has been consecrated by the Bishop of St. Asaph. The edifice consist of a nave of four bays, with narrow ambulatories for aisles, and has a tower and a spire. It has a clerestory with tracery windows, and the ceiling is barrel-vaulted. The chancel is separated from the nave by a carved oak screen, the work of Messrs. R. L. Boulton and Sons, Cheltenham, who have also executed other sculptured work in the church. Messrs. Prothero, Phillott, and Barnard, Cheltenham, were the architects, and Messrs. Collins and Godfrey, Tewkesbury, the contractors.

Yarmouth.—The new grammar school for boys at Yarmouth has been opened by the Bishop of Norwich, Messrs. Olley and Howard, Great Yarmouth, being the architects. The contractors concerned in the erection of the school were:—Mr. J. D. Harman, building; the Bispham Hall Company, terra-cotta work; Mr. West, plumber, decorator, etc.; Messrs. F. Braby and Co., Ltd., zinc work; Messrs. Dawber, Townsley and Co., Ltd., slating; Messrs. G. N. Haden and Sons, hot-water warming; Mr. A. R. Pank, electric lighting; Messrs. Reynolds and Branson, Ltd., laboratory fittings; Messrs. A. C. W. Hobman, Ltd., tar paving.

CORRESPONDENCE.

[*The Editor declines responsibility for the statements made or opinions expressed by correspondents.*]

Licentiate R.I.B.A.

To the Editor of The Architects' and Builders' Journal.

Sir,—Your correspondent "K. K.," unless he thinks that the R.I.B.A. Council is working from a very exclusive basis (unlikely to be successful) for a Registration Bill, probably agrees with me in the opinion that the R.I.B.A. Council is not producing a Registration Bill in its usually accepted sense. In the event of the R.I.B.A. producing a Bill acceptable to the whole profession, it is practically certain that all who enter the profession will enter the Institute in some probationary manner, and thereafter qualify for membership. But registration is a measure (approved by a large majority of general practitioners) for the good of the profession and the protection of its members, and the use of an affix of any kind is a very secondary matter; and as in the medical profession to-day, many medical men do not use their "mystic letters," so, under registration in the architectural profession would the word "Architect" convey as much sense of responsibility and standing as "Physician" or "Surgeon."

"K. K." considers that anyone who can produce his articles satisfactorily endorsed should be elected a "Licentiate R.I.B.A." I heartily agree with "K. K."—with the proviso that the candidate produces testimonies of study and work, so that the Council may have something to go on before further endorsing his articles.

Unfortunately, as perhaps "K. K." knows, endorsed articles sometimes mean very little, and the three years he mentions, nothing at all—and then, who can imagine the Associates R.I.B.A. voting for such an augmentation of a class which they have already condemned in no uncertain terms in your pages?

I suggest that if the R.I.B.A. had invited qualified men to join its ranks without any affix, but given them a voice and vote in the solution of the registration problem and nothing else, even though it entailed an entrance fee and subscription for the privilege, instead of giving an affix with the class of membership to be written in full (a stigma which no other body gives its licentiates), and no voice whatever on any point affecting the management of the Institute or policy in the profession, it would have been more worthy of the R.I.B.A. and the Council.

Your correspondent "Tailless and Unashamed," in his letter in your issue of the 13th July, said, "that an alma mater is necessary to protect the children of architecture and elevate them to manhood of quality"; but there is a beginning to everything, and the R.I.B.A. may justly expect to be considered a respected alma mater when it has opened its heart and mind to counsels for a reasonable and just solution of those difficulties which degrade the profession, its productions, and the mode of producing them.

"K. K." suggests that "it would be advisable to get a Bill through Parliament to prevent builders erecting buildings without the professional assistance of a qualified architect," an excellent suggeston but for the fact that many builders are infinitely better qualified than the average three years articled and qualified architect of "K. K.'s" dream.

The R.I.B.A. has arranged in a most excellent manner a conference on Town Planning. Is it quite out of the question for the R.I.B.A. to arrange a conference on the important question of registration?

H. G. T.

London, E.C.

THE TRADES' TRAINING SCHOOLS.
SPECIMEN OF WORK DONE IN THE PLUMBERS' SHOP.

THE TRADES' TRAINING SCHOOLS.

The report of the judges upon the work done at the Trades' Training Schools of the Worshipful Companies of Carpenters, Joiners, Painter-Stainers, Plasterers, Tylers and Bricklayers, and Wheelwrights, at 153, Great Titchfield Street, London, W., has now been issued, together with particulars of the awards, which are as follows:—

Carpenters.

The judges are much gratified at the high standard of the work exhibited, which, in their opinion, is considerably in advance of previous years. The elliptical dome, to which the silver medal has been awarded, is of singular merit, and has been most conscientiously set out. In awarding the prizes, the judges have taken into consideration intricacy of work, and also the respective ages of the students. The Alexander Howard medal, for the best work executed in English oak, has been awarded to J. B. Graham.

Special prize of £2 in books (former recipient of the Banister Fletcher medal and silver medal): W. H. Gale.

Special prize of £1 in books (former recipient of the Banister-Fletcher medal and silver medal: E. J. Beesley.

Special prize of £1 in books (former recipient of the Banister Fletcher medal and siver medal): E. C. Owen.

Special prize of £1 in books (former recipient of the silver medal): A. W. Bailey.

Alexander Howard medal, silver medal and £1 in books: J. B. Graham.

Bronze medal and £1 in books: S. Lummes, C. Burle.

Certificate and 15s. in books: R. A. Lumeden.

Certificate and 10s. in books: A. L. Aston, J. G. Williams, E. V. Whicher.

Joiners and Handrailing.

The works exhibited this year are good, and, in some cases, of exceptionally high quality. The semicircular niche, with coved and fluted head, is an admirable specimen of curved panel work, and the curved sash window and oak reading-desk display considerable skill on the part of the craftsmen who have produced them.

Special prize of silver medal given by the Joiners' Company, and £1 in books (former recipient of the Banister Fletcher medal and silver medal): A. Duley.

Silver medal, and 21s. in books, given by the Joiners' Company (former recipient of the silver medal): R. J. Holley.

Bronze medal, and 10s. in books, given by the Joiners' Company: J. B. Heath.

Certificate, and 10s. in books, given by the Joiners' Company: E. Duckett.

Handrailing.

The examples of stair-building this session are far in advance of anything shown hitherto. The judges regret that there are not more specimens of handrail wreaths.

H. Durran exhibits one of the finest models that the judges have seen in this class since its initiation. He deservedly wins the premier medal for the best craftsman in the schools.

Banister Fletcher medal, silver medal and £2 in books: H. Durran.

Masons.

The work is considered by the judges to be in advance of that of last year. They are pleased to note that the honours panel has been completed and fixed in position. This was under consideration of the Banister Fletcher medal.

Silver medal: F. G. Beresford.

Bronze medal: H. G. Bush.

Certificate and 10s. in books: O. Jackson, W. F. Wells, S. Bysouth.

Painters.

The judges found that the specimens of general plain painting and varnishing were good. The graining, marbling, and signwriting evinced considerable application, but, with regard to the latter, they think that less florid forms might be attempted in the future, and more attention paid to the drawing and shading of the letters.

Silver medal (painting graining, and writing): J. H. Higgins.

Bronze medal (painting and graining): J. E. McCabe.

Certificate and £1 in books (painting and writing): H. P. Miller.

Plasterers.

There is an advance shown in the work of this class over that in previous sessions, both in subject and execution. The attendances also show a great improvement, which must be gratifying to the Plasterers' Company, who continue to take a keen interest in the welfare of the class.

Special prize of £1 in books (former recipient of the silver medal): G. Davies.

Bronze medal: P. Luker.

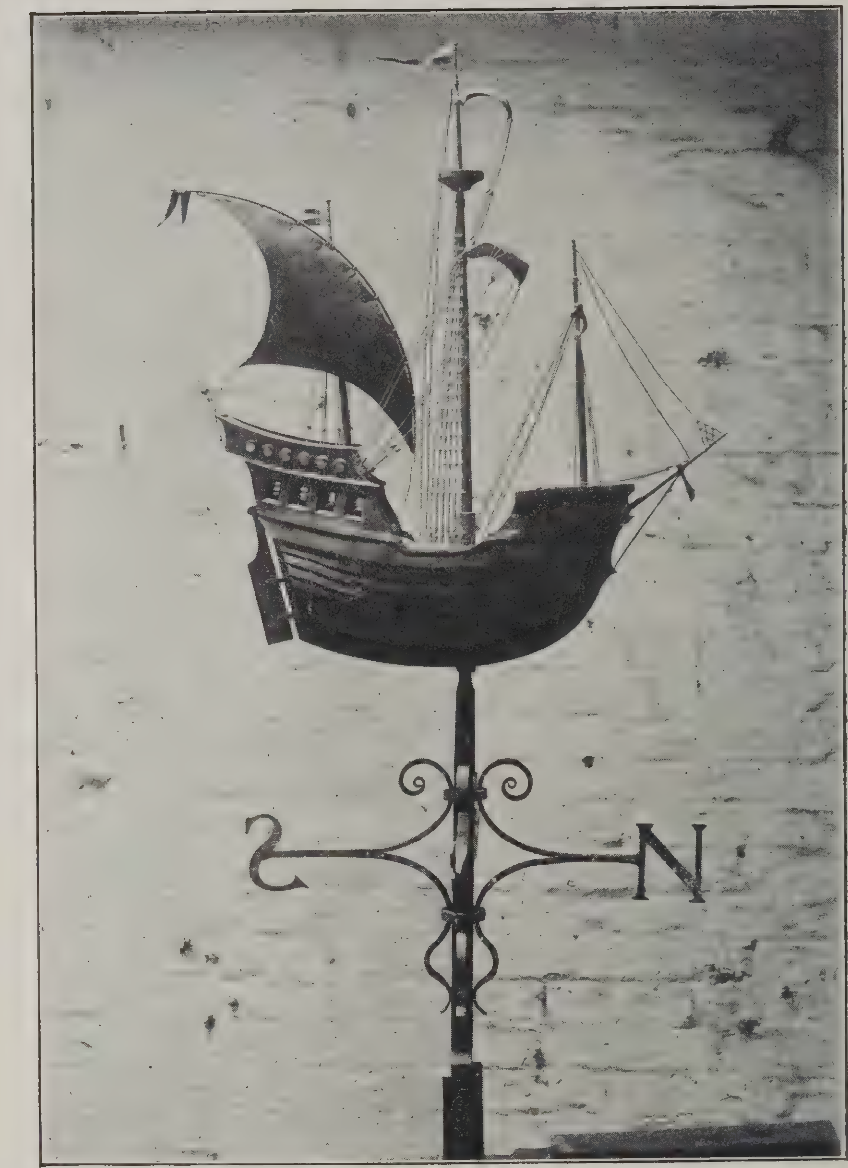
Certificate and 10s. in books: G. Cole.

Plumbers.

The work executed by this class during the session again fulfils the best expectation of the judges. There are some excellent specimens of branch jointing and bossing, and the cast lead work shows that the students are being kept well in touch with the modern developments of their craft.

Silver medal: F. Bardolph.

Special prize of £2 in books (former recipient of silver medal): E. Rowe.



THE TRADES' TRAINING SCHOOLS.
SPECIMEN OF WORK DONE IN THE SMITHS' SHOP.

Bronze medal: A. Kirkpatrick, J. D. Bates, P. Whitehead.

Certificate and 15s. in books: E. Gray.

Certificate and 10s. in books: L. Rodgers, G. W. Howlett.

Smiths.

The judges find it difficult to criticise the work exhibited by this class owing to the first-rate workmanship displayed, but they would be glad to see a few more finished examples. Some of the larger forgings executed by the students would do credit to an experienced smith, and prove the value of the instruction give in this class. The copper ship, mounted as a weather vane, shows considerable skill, both in design and execution, as do the side panels and wicket gate.

Special prize of £2 in books (former recipient of silver medal): W. Pinnock.

Silver medal and £1 in books, given by the Blacksmiths' Company: F. W. Porter.

Bronze medal: W. Cleveland.

Certificate and £1 in books: J. Batson.

Stone-carving.

The work exhibited shows that the impetus received in this class last year is being well maintained. The carved pilaster to which the silver medal has been awarded is a very creditable work, the exhibits generally showing a close application of the best principles of architectural stone-carving.

Silver medal and £1 in books: H. Bate.

Bronze medal and £1 in books: C. Limmer, T. Holmyard, M. Bartel.

Certificate and £1 in books: P. Barone, J. W. Drake, C. Watson.

Certificate and 10s. in books: E. S. Mertens. P. C. Rodgers.

Life Class.

Sir George Frampton, R.A., Messrs. Goscombe John, R.A., Ernest George, Banister Fletcher and Henry Tanner were glad to record the high standard of the work submitted this year. The vitality of this class is most encouraging, and the progress made in the last few years is appreciable.

Special prize of £2 in books (former recipient of the silver medal): P. Barone.

Silver medal and £1 in books: C. Cott.

Bronze medal and £1 in books: C. Watson, J. Allan.

Bronze medal: C. A. Austin.

Certificate and 15s. in books: H. Bate.

Tylers and Bricklayers.

The judges were again pleased to find a large number of exhibits for their inspection, many being the work of junior students, and showing great promise.

The cut brick font and gauged sundial are both excellent pieces of work, but, as both these students have formerly gained the silver medal, it was decided to withold this prize.

Special prize of £2 in books (former recipient of the Silver medal): R. J. Fever.

Special prize of £1 10s. in books (former recipient of the silver medal): H. G. Smith.

Bronze medal and £1 in books: F. J. Manley.

Bronze medal: G. A. Beard.

Certificate and 10s. in books: F. H. Wright, J. R. Wright, E. P. Smith, A. Churcher.

Certificate: G. R. Gorringe, W. J. Frigger, A. F. Walker, J. T. Pearson, H. Saul.

Wheelwrights.

The judges regret that, owing to unavoidable circumstances, the number of exhibits this year is below the average. The work, however, is of good quality, and equal to any which has been produced in former years. Some of the models are of a distinctly advanced type, and do credit to everyone concerned.

Silver medal and £1 10s. in books: B. Cavalier.

Bronze medal and £1 in books: D. Lee.

The Master's prize, £1 in books: W. Rowlands.

Certificate and 10s. in books: A. Gibson.

Wood-carvers,

The carving and preparatory plaster casts are more numerous this year, and embody the spirit which is aimed at in this class. Some of the drawings are excellent, and the choice of subject shows discrimination.

Silver medal (given by the Joiners' Company), and £2 in books (for carving): J. Cott.

Silver medal and £1 10s. in books (for carving): J Almond.

Certificate and £1 in books (for carving): A. Hammelt.

Certificate and 10s. in books (for carving): H. Glass.

Certificate and £1 in books (for modelling): F. Devisse.

Certificate and 10s. in books (for modelling): H. Crow.

Silver medal (for drawings): J. Eichberger.

Bronze medal and £1 in books (for drawings): J. H. Potter.

Bronze medal and £1 in books (for drawings): F. Roessli.

Certificate, and 10s. in books given by the Joiners' Company (for drawings): A. J. Harvey.

Certificate, and 10s. in books given by the Joiners' Company (for drawings): A. Austin.

Certificate and 10s. in books (for drawings): H. Povey.

Electric Wiremen's Work.

The practical work exhibited is of considerable merit, including, in an abbreviated form, the complete electric light and bell installation of a house, the different circuits being executed by different students.

The judges were very gratified at the success which has attended the establishment of this class.

The following awards were made for practical work and general knowledge, as shown by the students' note books, papers, and work exhibited:—

Bronze medal and £1 in books: W. Fathers.

Bronze medal and £1 in books: A. E. W. Forrest.

Certificate and £1 in books: A. G. Thwaites.

Certificate and 15s. in books: W. B. Wykes.

BUILDERS NOTES.

Dressed Stone Dispute.

The dispute between the contractor for St. Gabriel's Church, Sunderland, which is in the course of erection, and the stonemasons, with regard to the dressing of the stone used in the building, has been settled. It has been decided that the trade requirements that the stone should be prepared on the job instead of at the quarries shall be complied with. This will mean an extra expense, which the contractor and the church council have decided to divide between them.

Cork Master Builders' Association.

At a specially summoned meeting, Mr. A. Gaul (president) in the chair, the following resolution was unanimously adopted:—"That we tender to our much-esteemed fellow-member Mr. W. T. O'Mahony our very sincere sympathy in the great loss he has sustained on the death of his wife." The Hon. Sec. (Mr. Thos. Kelleher) was directed to convey the resolution of sympathy to Mr. O'Mahony. The meeting then adjourned.

Portsmouth Speculative Builders' Outing.

Members of the Portsmouth and District Speculative Builders' Association and a number of friends had an enjoyable outing to the Isle of Wight, and, despite the weather, greatly appreciated the drive from Ryde to Ventnor, via Brading, and thence to Carisbrooke, via Whitwell and Godshill. Halts were made for luncheon and tea, and the return route to Ryde lay through Newport and Ashey. Those present included Mr. A. Chase (president), Mrs. Chase, Mr. J. Brittan (vice-president), Mrs. Brittan, supported by members of the committee. The arrangements, which met with full approval, were left in the hands of Messrs. F. W. Winter, J. Williams, and M. Hart (secretary).

Peterhead Master Builders' Picnic.

The summer outing in connection with Peterhead Master Builders' Association took place recently, when the members of the Association accompanied by friends journeyed to Pitfour. The weather was dull, but remained dry, and a most enjoyable afternoon was spent within the beautiful grounds, permission to which was generously granted by Colonel Ferguson. Much of the success of the picnic was due to the efforts of Messrs. W. B. Taylor, president; A. L. Williamson, vice-president; and A. Clark Martin, the secretary.

Newport Builders' Excursion to Stratford-on-Avon.

A party organised by the Newport Master Builders' Association paid a visit to Stratford-on-Avon. The railway journey, embracing a circular tour via Cheltenham, Pershore and Evesham, took the party right through a veritable fruit garden. Dinner was served at the Unicorn Hotel. Mr. John Charles presided, and was supported by the Mayor of Newport (Mr. W. M. Blackburn, a past president of the Association), Messrs. R. W. Moon (vice-president), Robt. Lunn (town clerk of Stratford), Councillors Peter Wright, H. C. Parfit, W. Irwell, and Wm. Moore, both past presidents of the Association, and E. Hartley, of the Star Brick Co., Ltd., the company numbering 39. The Town Clerk of Stratford welcomed the Association and the Mayor of Newport to the ancient town of Stratford. He had, he said, heard a great deal of Newport, its magnificent docks, its commerce, the coalfields in its close proximity, and of the great future of the town as a great commercial and industrial centre. He wished Newport every prosperity, and associated with its prosperity "The Newport Master Builders' Association" and the Mayor. The Town Clerk also much regretted the absence from town of the Mayor of Stratford, who would otherwise have been present. After a photo group had been taken, the entire party, accompanied by the Town Clerk, enjoyed a delightful trip by electric launch on the Avon. All were charmed with its reaches and many windings. Upon landing, the party drove to Anne Hathaway's Cottage. A visit was also paid to the Collegiate parish church of Holy Trinity. The church in cruciform, 197ft. in length, 89ft. in width across the transepts; the breadth of the nave and aisles is 68ft., and the height to the roof 50ft. At the west end of the church is kept in a glass case the old parish register, with the entries of the baptism and burial of William Shakespeare. Shakespeare's birthplace was also visited. Newport was reached again at 10.20 p.m. The arrangements were carried out by the secretary of the Association, Mr. R. Richards, of Mount Eveswell.

Will.

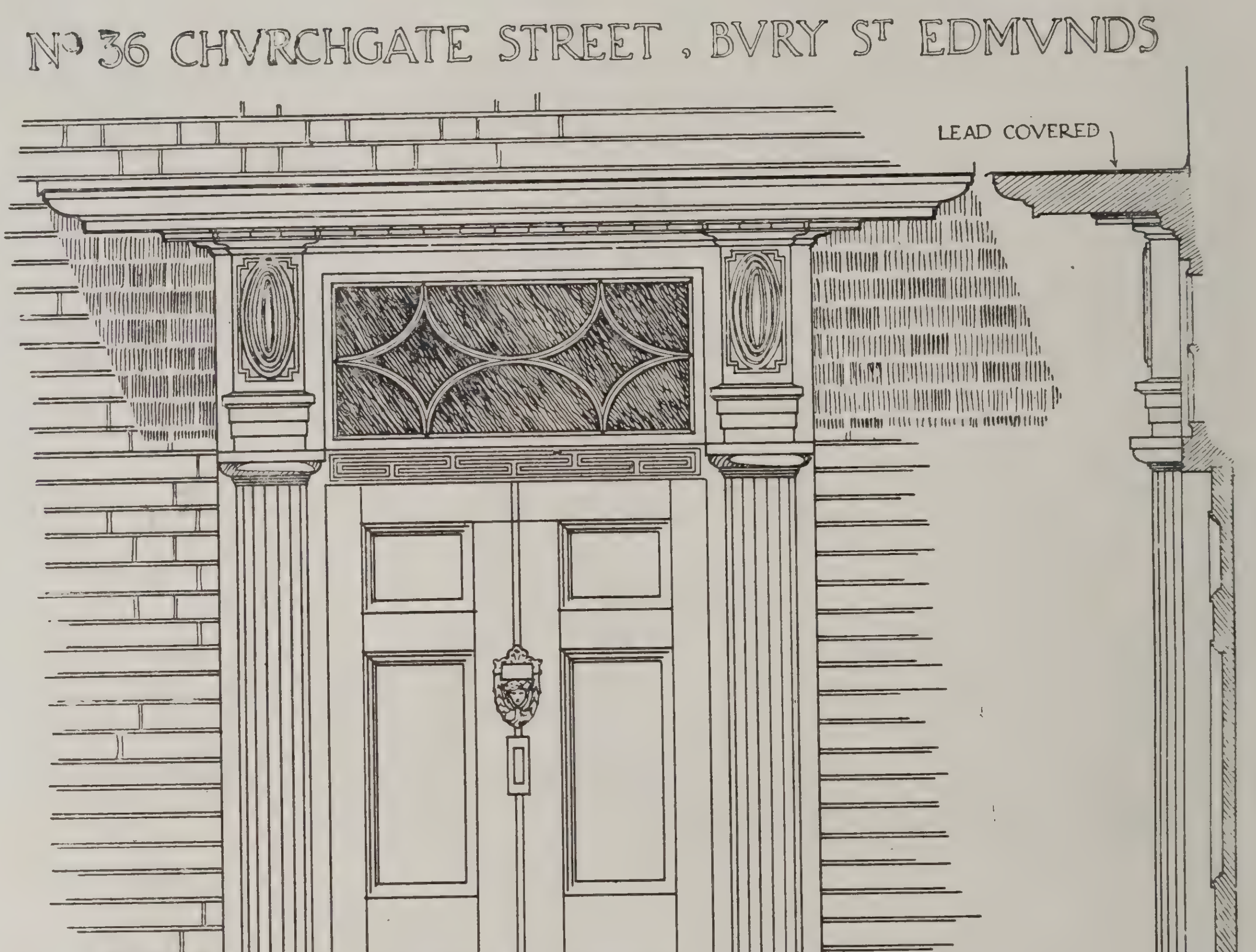
Mr. William Osment, of Sandford House, Clapton Common, N.E., builder, who died on April 24th last, aged 71 years, left estate of the gross value of £148,886 4s. 1d., of which the net personalty has been sworn at £101,055 5s. 1d.

Hull Painting Contracts.

The decision of the Hull Town Council to place in the hands of the Works Department the contracts for repainting work in the schools has drawn vigorous protests from the Hull and District Master Painters' Association and from the Hull and District Chamber of Trades. The letter to the "Hull Daily Mail," signed by Mr. H. F. Smith, the President, and Mr. J. S. Cant, the Secretary, of the Painters' Association, states that "For the moment we are concerned not so much with the general question of municipal trading as with the system which permits the Borough Engineer to give a low estimate for work against a trader, upon a definite specification, and afterwards allows him to do the work in such a manner as will enable him to show an apparent profit, irrespective of such specification." They give in parallel columns statements concerning work done by the Engineer's Department and by contractors, tending to show that while the former has been favoured, the latter had been harshly treated. They dispute that "the contractor receives equal treatment with the much-vaunted painting department of the Corporation." The Hon. Secretary of the Chamber of Trades states that his organisation is supporting the Master Painters' Association, and goes on to say that "As we understand it, the master painters are requested to tender for outside and inside work in connection with the public schools. In tendering for the work, account has to be taken of the fact that only so many days are given for its complete accomplishment. The master painter clearly understands that if he gets the contract the work must be done in a certain time, or otherwise heavy penalties must be paid. On the other hand, no such restriction attaches to the Corporation employees, who can leave over until next Christmas the inside work in these schools which they have not been able to finish. If we understand the position, it is a most unfair one, because it amounts to the tenders of two competing parties, one with a time limit and a penalty, and the other practically without either."

Bristol Builders' Outing.

The members and friends of the Bristol Master Builders' Association held their annual summer excursion on July 21st, the venue being "Shakespeare's Avon." There were present: Mr. F. Chown (president), Messrs. Audley Perkins (vice-president), Geo. Hayward (president, Bath Association), S. Ambrose (vice-president, Bath Association, E. J. B. Mercer (secretary, Bath Association), E. I. Neale (hon. treasurer, Bristol), Frank N. Cowlin, W. H. Brown, G. W. Humphreys, J. Lovell, C. C. Cowlin, A. S. Scull, Geo. Wilkins, E. W. Walters, W. Foster, J. Browning, W. Newton (Midland Railway), J. Coles, J. Harris, A. F. Farbrother, C. F. Bryant, D. Crombie, A. W. Parkman, W. D. Goodfellow, F. Greenway, E. H. Chapell, A. Clark, J. G. Wightman, Tom Harris, F. R. Arscott, W. Hall, T. Berry, H. J. Cox, C. Cornish, C. P. Cornish, F. R. Norris, A. Thatcher, W. G. Thatcher, E. W. Sweet, E. Preece, Jas. Cox, H. J. Tanner, A. Peacock, G. Crispin, F. H. Ridd, A. Langlands, F. Emery, F. Scource, S. H. Verran, W. J. Foster, F. Sampson, and A. J. Pitt (secretary). Early morning brought unpleasant weather, but after leaving Bristol by the 8.5 train for Evesham, the sun broke out. Evesham was reached shortly after ten o'clock, and the party wended their way to the Workman Pleasure Gardens, inspecting en route the old buildings in the Alley and Market Place. All Saints' Church, the Bell Tower, and various other places of architectural interest. Having embarked on the steam launch River Queen, a most enjoyable trip was commenced through the Vale of Evesham. Having arrived at Pershore at one o'clock, luncheon was partaken of, and later the Abbey Church was viewed. The party then re-embarked for Tewkesbury. Tea was partaken of at the Bell and Bowling Green Hotel, certain members indulging in the game from which the hotel derives part of its title. A special train from Tewkesbury conveyed the company to Cheltenham, and Bristol was reached at 9.45.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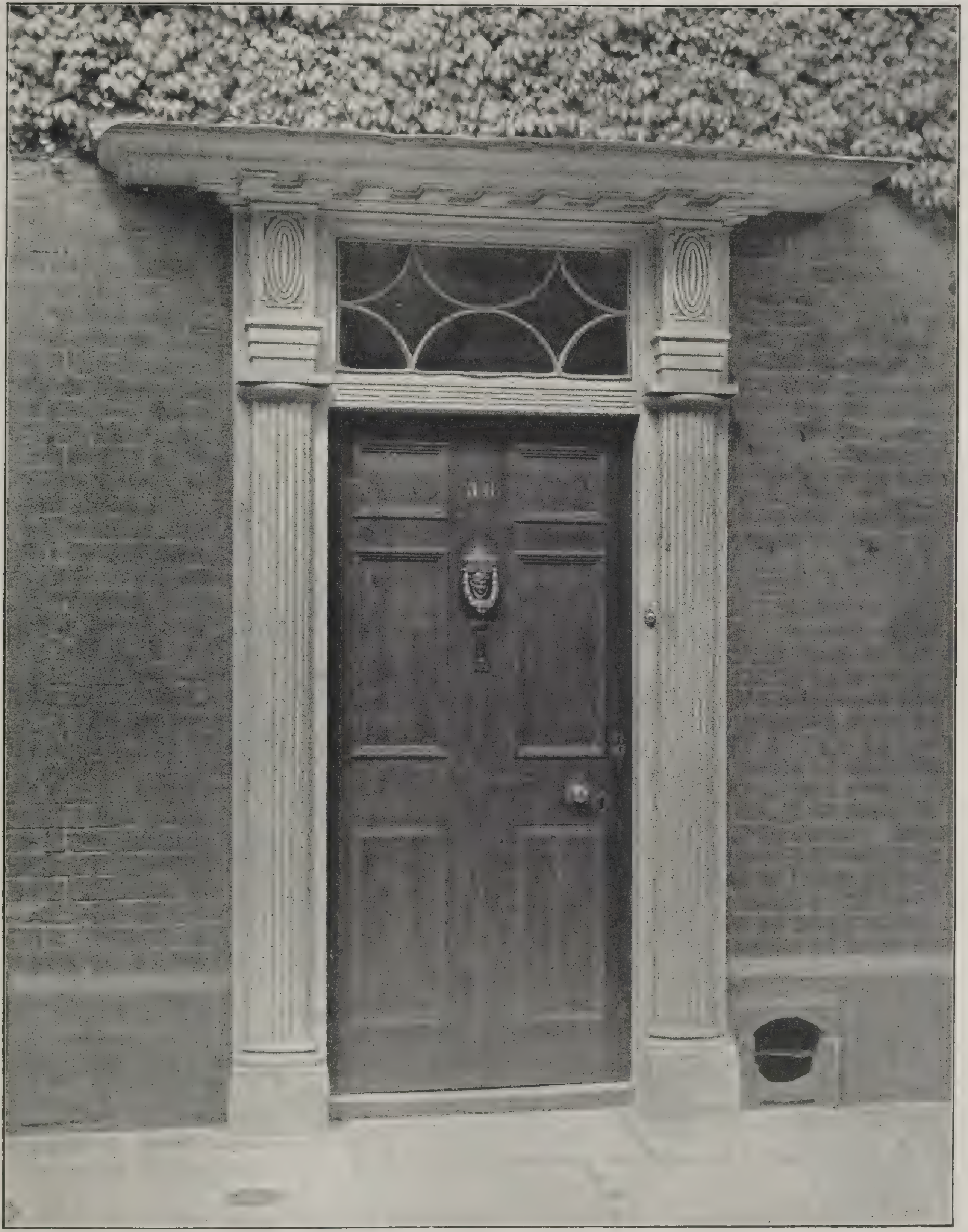
DRAWN BY EDWIN GUNN, A.R.I.B.A.



This doorway, executed in wood, is of early nineteenth century date, and exhibits the influence of Greek forms; but while bein delicate in treatment, it has none of the ultra-delicacy of the Adam period. The hood, moreover, is a thoroughly serviceable one.

DOORWAY, NO. 35, CHURCHGATE STREET, BURY ST. EDMUNDS.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

- ***(1) Enquiries about buildings to measure in particular towns and districts.***
- ***(2) Enquiries embodying questions which have been set in examination papers.***
- ***(3) Enquiries which ask for or require the preparation of special designs as part of the answer.***

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor, will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries sent must be on the express understanding that he is not to be held responsible or any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Constructing Sash Windows.

Brittany (St. Servan) writes: "Where can I procure working drawings to enable a local carpenter to make sash windows and frames of approved English pattern, with sash balances instead of cords and weights?"

—Information which would probably serve your purpose is given in Ellis's "Carpentry and Joinery," which is published at 15s. net by Mr. B. T. Batsford, 94, High Holborn, London, W.C.

By-Laws and Building Site.

In reference to the enquiry which appeared in our issue of July 6th last, we have received the following from a correspondent:—"Boundary has overlooked the by-law which allows public buildings, buildings of warehouse class, factories, etc., to be erected without rear space. It is only buildings of domestic class which require rear space, hence, Local Council have no jurisdiction as to depth of building plots or position of a new street."

Garden Wall.

T. H. W. (Bristol) writes: "The owner of a shop, as shown on diagram [not reproduced], proposes to cover a portion of the site with a ground floor extension. A 12in. division wall 5ft. high runs down the centre of the site, and there is a garden on either side. The wall is insufficient in strength and thickness for the purposes of the proposed building, and has no damp-proof course. (1) Is the owner of the property entitled to pull it down and build a new wall on the same line? (2) If so, may he dig the trench and project the footing? (3) What is the proper procedure in such a case? Is it necessary to give formal notice to the owner of the property which adjoins the shop on the other side of the wall? There is nothing in the deeds of the property to guide in the matter."

— Presumably the wall in question is a party wall, and each owner has an equal interest in it. Assuming that there is in the City of Bristol no local Act of Parliament dealing with party walls, I am of opinion: (1) That neither owner may pull down the present wall and rebuild it without the consent of the other. (2) The footings may not project further than they have been accustomed to do. (3) I suggest that the adjoining owner should be approached and that he should be allowed to see the drawings of the proposed new buildings, both in regard to the party wall and also with a view to avoiding any future question as to rights of light.

F. S. I.

Window Overlooking Adjoining Property.

F. A. R. writes: "The following is a covenant entered into by the owner of the residence shown on the enclosed plan [not reproduced]: 'That the purchaser, his heirs and assigns, will not in any building to be erected upon the said land hereby assured, make, or suffer to be made, any clear glass windows which shall overlook the adjoining property of the vendor, but that the only windows so made shall be of opaque glass, with no opening sash except a top fanlight to be hinged at the bottom, and to open inwards only.' The vendor and owner of the adjoining property shown on the plan now take objection to the window marked 'A' being glazed in clear glass, as he finds that a person inside, standing sideways against this window, can see a portion of his property. Yet, I take it that there is no limit to the size of the top fanlight, and it may open inwards completely, and still keep the letter of the agreement, although there would then be an open view of his property. However, the point I should be pleased to have your opinion upon is whether the window A is built to overlook, although it is built in a plane parallel to the front gable, and no objection is taken to the window. Has there been a similar case decided?"

—With regard to the first part of this query, it is clear that although the fanlight opens inwards, and, as appears from the drawing, is capable of being drawn right down, this constitutes no breach of the covenant. When a fanlight was permitted, the owner of the adjoining house must be taken to have considered all the consequences. As to the second question, this is by no means easy to answer, and there are no cases on the subject. It is conceived, however, that to build a window from which the adjoining property can be seen at all is a breach of covenant. The point may be tested in this way. Suppose the owner of the residence was claiming a right to the light entering this window, could he object to the light from the adjoining property being shut out? It has been held in a case relating to ancient lights (*National Provincial Plate Glass Insurance Co. v. Prudential Insurance Co.*, Emden's Building Contracts (4th edition) p. 294), that the alteration of the plans of a window do not amount to an abandonment of the right of light. A householder may claim the light reaching his window from whatever quarter it comes. By a parity of reasoning, if he agrees that he shall not have a window overlooking a particular direction, he must be taken to agree that no window shall be built from which a side view can be obtained. Cannot the difficulty be overcome by putting opaque glass in this window?"

Council's Excessive Estimate for Street Works.

E. F. C. (Frindsbury) writes: 104 provisional apportionment notices have been served on certain owners under the Private Street Works Act, 1892. The owners object to the estimate as being excessive, and desire to have tenders invited from contractors. The borough council wish to do the work themselves, and to this the owners would not object if they do it at a contractor's price. (a) Can the owners insist on tenders being invited, or, failing this, on the council doing the work at a definite price to be agreed on? (b) When the street was laid out the council required the formation, and accepted a system, of surface water drainage to cesspools. They now wish to do away with the cesspools and to lay a new drain at the owners' expense, and connect it to a sewer in a street constructed since the first street was formed (previous to 1892). The owners having provided one system, it appears inequitable for them to be called on to bear the cost of another (section 9 (1) of the Act "Incidental Works" is held to empower the council to insist on this). (c) The by-laws require a 24-ft. carriage way. A majority of the owners in number, value, and length of frontage wish this reduced to 20ft., to afford better space for trees on the edge of the footpath. Has the council power to consent to this? The street is not a main thoroughfare, and is 36ft. wide."

—As to (a), it is clear that, by virtue of section 7 (d) of the Private Street Works Act, 1892, owners may object to an apportionment on the ground that "the proposed works are insufficient or unreasonable, or that the estimated expenses are excessive." Although there appears to be no decision directly in point, it is apprehended that the fact that no tenders were invited would be strong evidence that the local authority did not take proper steps to do the work in the cheapest way. Objection could therefore be taken under section 8 of the Act. As to (b), the answer would seem to be in the negative having regard to *Winslow U.D.C. v. Sidebottom* (1906), 70, J.P. 537. The section can apparently only be put in force once for the purpose of carrying out improvements. As to (c), there does not appear to be anything in the Act of 1892, which enables the frontagers to have a voice in the decision as to the width of the road. This is a matter for the local authority alone.

X.

Gable and Chimney-Stack Enclosed by Adjoining Owner.

Curious (Newcastle, Staffs.) writes: "I am the owner of a detached cottage, and the adjoining owner has built up to the gable of my house. To do so he has cut off the projecting tiling to the gable, and, having carried up his wall (4½in.) about 2ft. 6in. above my roof, has enclosed 2in. of my chimney (which is corbelled out to the same projection as the tiles, viz., 2in.) within his wall, which will probably cause the chimney to smoke. What remedy have I? My property has been built about 50 years."

Presumably your verge and corbelled chimney-stack overhang your neighbour's ground (though you do not say so), but have acquired a right to do so, in the nature of an easement. If this be so, you have ground for action, though such a matter is best adjusted in a friendly manner if possible. The law appears to recognise no right to free access of air to chimneys, and has several times declined to interfere when neighbouring buildings raised higher have caused them to draw improperly. It is usual, however, for the building owner to raise the adjoining owner's chimneys when raising his building, as a matter of good feeling.

G.

Contractor's Right to See Bill of Variations.

W. F. (South Croydon) writes: "In adjusting omissions and additions, can a sub-contractor demand to see the bill of variations agreed to between the surveyor or architect and the contractor—so far as his work—the sub-contractor's—is concerned?"

—No, not unless he has been made a party to the contract by the terms in which the sub-contract was demanded and (or) accepted. The bill of variations relates to an agreement subsisting between the contractor and the building-owner, and is a private document between them. The fact that the contractor, in the exercise of power reserved to him, has entered into an agreement with a sub-contractor to execute some portion of the contract does not necessarily make the latter a party to the original contract; the adjustment, therefore, of any questions of omissions or additions which may arise between the contractor and the sub-contractor, must be either regulated by the terms of the agreement made at the time the sub-contract was accepted, or by subsequent mutual agreement, or by customary practice.

A. G. W.

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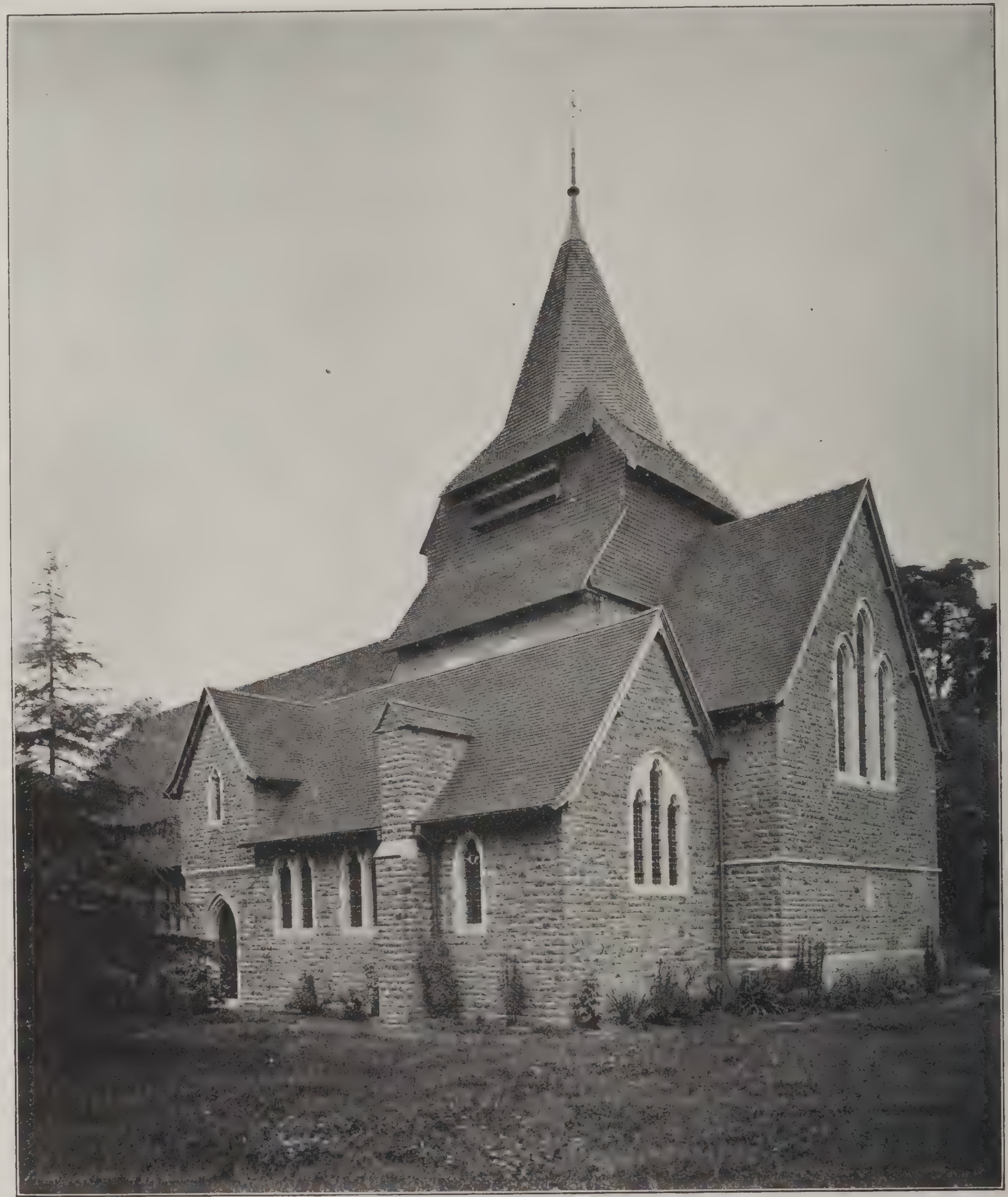

Photo: E. Dockree.

EXTERIOR FROM THE SOUTH-EAST.

ALL SAINTS' CHURCH, WOODHAM.

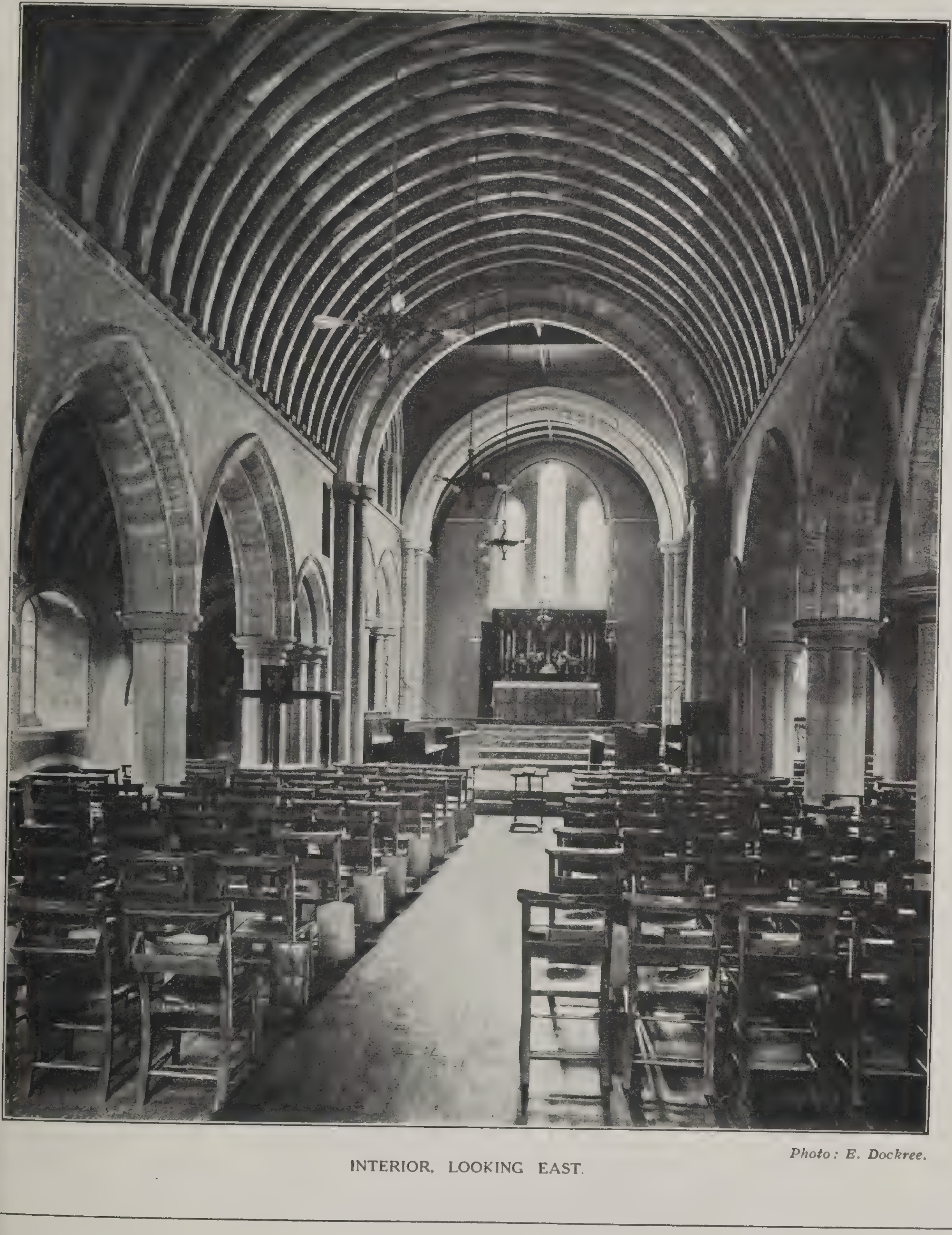

Photo: E. Dockree.

INTERIOR, LOOKING EAST.

UNSWORTH, F.R.I.B.A., ARCHITECT.

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THE ARCHITECTS' & BUILDERS' JOURNAL

WEDNESDAY,
AUGUST 17th, 1910.

Volume XXXII. No. 811.

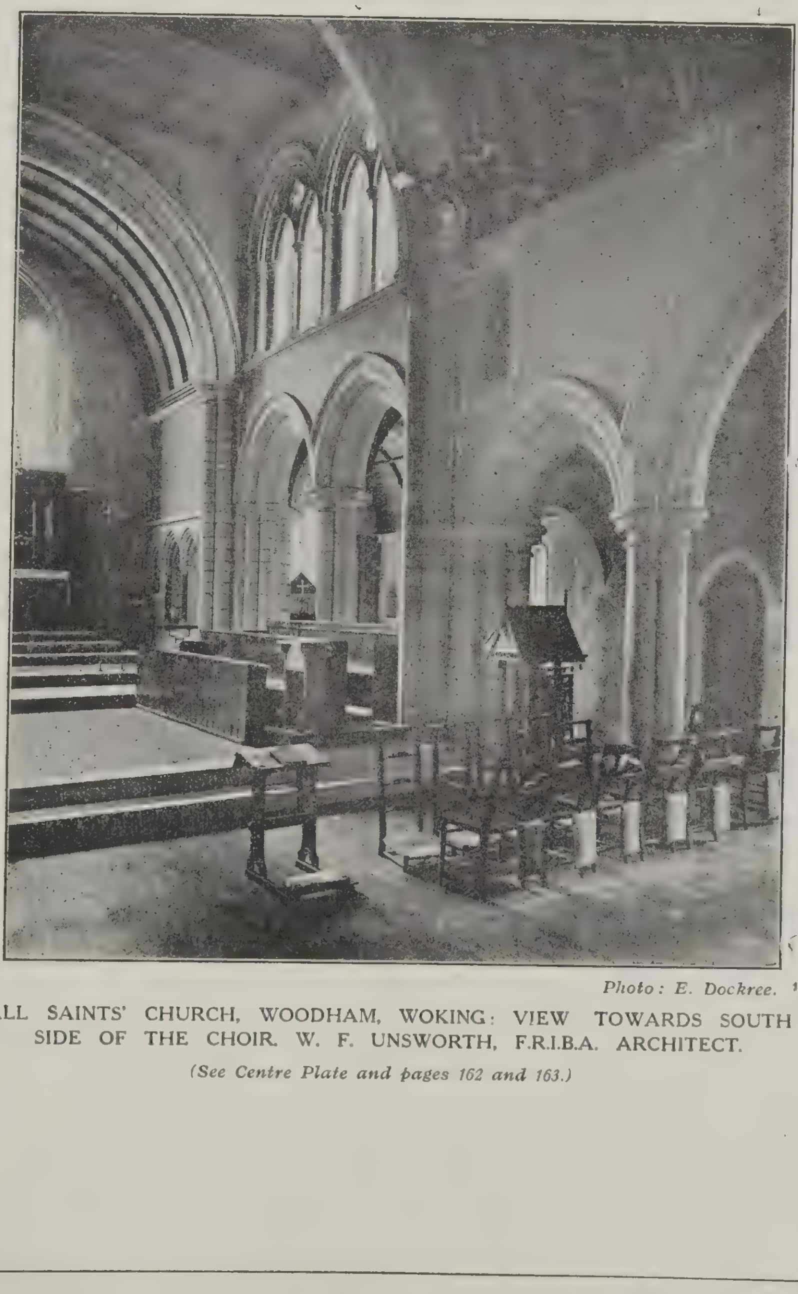
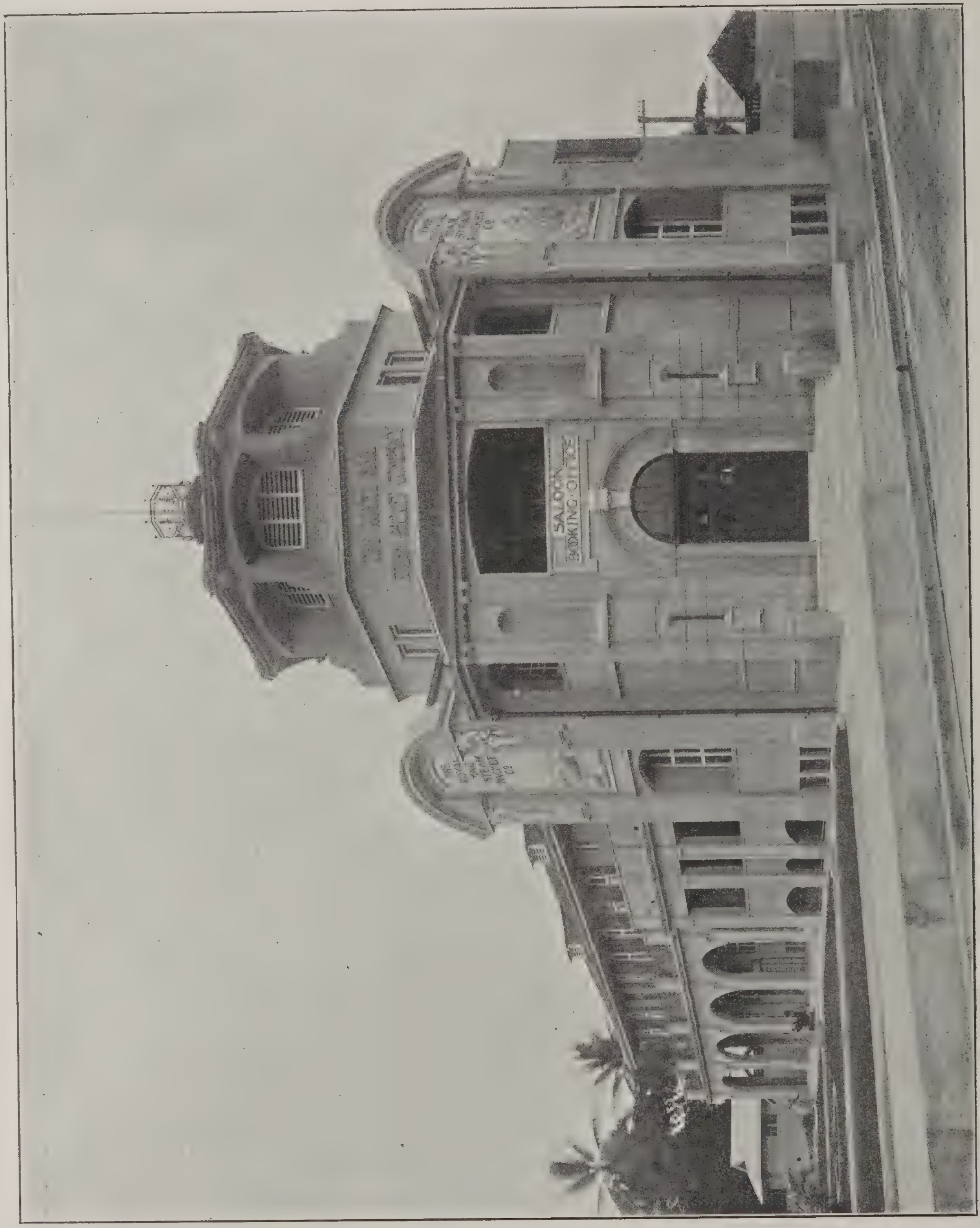


Photo: E. Dockree.

ALL SAINTS' CHURCH, WOODHAM, WOKING: VIEW TOWARDS SOUTH SIDE OF THE CHOIR. W. F. UNSWORTH, F.R.I.B.A. ARCHITECT.

(See Centre Plate and pages 162 and 163.)



This building replaces the former building destroyed by the late earthquake. It is of reinforced concrete and specially designed to resist shocks. Further illustrations and particulars concerning it will be found on pages 170 to 172 and 174 to 179.

THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: GENERAL VIEW.
LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

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Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Assessors.

ALTHOUGH it is many years since the appointment of professional assessors in architectural competitions was first practically insisted upon by the profession, or by all its leading members, as a condition of competing, there are still points of uncertainty in connection with the subject; and there has even been evident of late years a partial reaction in the profession against the method of deciding a competition by the verdict of an individual, who may, perhaps, quite honestly and reasonably, have a prejudice in favour of a particular style of architecture; or who, in the case of a building for a special purpose, may have a fixed idea in favour of one special principle in planning, and be consequently inclined to rule out—again quite honestly—any plans which do not conform to his pet ideal. He may very likely be right in his judgment, but it is possible that he may not be; and in any case, say the objectors, one does not want to see a particular style or a particular form of plan stereotyped as the only right one.

This result could only really come about under certain conditions which we will pass over for the moment, in order to consider the general question first in its broadest aspect. We may say at once that we consider it quite unquestionable that the appointment of a professional assessor in the majority of competitions, and the insistence upon this course by the Institute of Architects, has been of immense benefit both to the profession and indirectly to architecture. The younger generation of architects can hardly have an idea of the preposterous selections which were sometimes made in the pre-assessor days, and of the high-handed manner in which competitors were victimised. We can recall one very large competition for a municipal building, far in the dim past, where there were large sets of drawings sent in by nearly a hundred competitors, and where the borough surveyor, asked by the Council to advise them which they should choose, reported that none of them were very suitable, but that he thought that, out of the suggestions in some of them, he could evolve a building which would be more suitable for their purposes than any of the competition designs. This proposal was acted on, and the building thus evolved now stands; as might be expected, a thoroughly commonplace one. This was in a great provincial town; it would hardly be possible now anywhere except in Little Pedlington; and that degree of purification is to be traced to the recognition of the assessor. And in the present day, those who frequent exhibitions of competition designs know the figure of the intelligent Town Councillor who shakes his head over the assessor's choice, and buttonholes you to show you the design he would have selected —something in which tawdry commonplaces of architecture are set out in the glories of a captivating draughtsman's style. The assessor has delivered us from the intelligent Town Councillor at all events.

On the other side of the question, there are two opposite tendencies—we will not necessarily call them weaknesses—to which assessors are liable, and which are apt to give a rather one-sided effect to their decisions. There is the assessor who is an architectural enthusiast, and who is inclined to fix his choice on the best and most effective piece of architectural design, content if the plan will do fairly well for the intended purpose, without being the best possible or the best of the plans sent in; who will recommend a design in a swimming-bath competition as a fine piece of architecture that will be a credit to the district, without considering whether its arrangements as a swimming-bath are the best. There is so much commonplace architecture turned out in these days of restless building and rebuilding that one cannot but feel a great deal of sympathy with this type of assessor; but it must be admitted that the position is hardly a sound one. He is making a selection of what other people have to pay for, and he has hardly a right to select what does not suit their practical purposes because it approves itself to his architectural perceptions. But this class of assessor is in the minority. On the whole, architectural assessors seem at present to be for the most part honestly endeavouring to select the best plans among competition designs, and the danger is rather the other way; that somewhat commonplace architecture will be erected because the plan is satisfactory. We can recall one large competition in which the award was given to a design with undoubtedly a masterly plan, for a very difficult site, in regard to which the remark was made that "no plan would justify the erection of that building"; not that the architecture was objectionable or in bad taste, but that, for a great occasion, it was absolutely commonplace. In that case the competition came to nothing, as the proposed building was never carried out; but had it been, there would have been a general feeling that a great architectural opportunity had been lost. And on the whole, this tendency to lean too much to the utilitarian side is the more common weakness with assessors, if it is to be considered a weakness. Conscientious and scrupulous assessors, passing judgment on other people's property, like to be on the safe side. Those who have paid much attention to competitions, or have competed much, will probably agree that it is of little use to send in anything that is architecturally very original in a competition. Critics in the Press may praise the architect's genius, and editors wish to publish "your fine design"; but it will not be selected. In a competition the *juste milieu* is always the safest. And that possibly is an inherent defect in the whole competition system. Competition, as a rule, is not the way to get original architecture. Competitors go in to win, and originality is too risky.

The conditions referred to at the outset, under which the assessor system may have the effect of rather stereotyping architectural style and plan, are when one distinguished architect gets rather a name for acting as an assessor, and is engaged right and left in that capacity by public bodies, and thus has practically the selection of the architecture of the principal new public buildings in his own hands. That actually was the case for some years in the days when Waterhouse was invited to fill the post of assessor for one competition after another. He was an admirable assessor, with a keen eye for the main points of a plan and design, and made some excellent selections; but there certainly was a feeling that the selection of designs in competition was becoming too much of a personal matter; and there is a strong feeling at the present time among many of the younger competing members of the profession that there is a tendency to repeat that state of things. Whatever the eminence of a universal assessor, and whatever respect may be felt for his character and acquirements, it is not well that the choice of the architecture for the majority of our important new buildings should be ruled by one individual will; and the position, we have reason to know, does not satisfy those who are in the habit of competing. The proper course would be for all public bodies to apply to the Institute to appoint assessors. They have a long list of members competent to act as assessors, and could make appointments, according to the importance of the occasion, so as to bring as many minds as possible to bear on the subject, which is a better condition of things.

There are cases in which what we may call sub-assessors ought to be appointed to assess the assessors. In the case of such a thing as a swimming-bath, for instance, already referred to, the architectural assessor would judge of the style and the general planning of the building, but he ought to have joined with him an adviser conversant with the engineering provisions of a swimming-bath, which are special and complicated. In the case of the Usher Hall, as was pointed out in a signed article last week, the second premium has been awarded to a form of plan which is radically bad for a concert-room, and the third to one in which the organ is placed in a position which would be condemned by every conductor at once. In the case of all concert-rooms a musical expert should be joined with the assessor, to advise him on such points. Even the most eminent architect cannot be expected to know everything. Theatres are, unfortunately, seldom the subjects of competition, or we might perhaps have some better theatre architecture than we have; they are generally "jobs"; but in the case of a theatre competition any architectural assessor ought undoubtedly to be sub-assessed by an experienced stage manager. The principle applies to all buildings which include some provision quite apart from ordinary problems of planning and construction.

The question is still undecided in many minds whether an assessor is an arbitrator or an adviser. The Institute, in its regulations, takes the line that he is an arbitrator, and is to impose a choice on the committee. That he should impose his choice on the committee is quite desirable; but there are different ways of doing it. In a court of law an "assessor," when appointed, is certainly not an arbitrator; he is a person to assist the Judge by his special knowledge; and that is what the word "assessor" means. We cannot help thinking that the profession would be in a better position with the public if that meaning of the word "assessor" had been recognised and acted on from the first; that he is a person not ostensibly to impose a choice on a committee, but to advise them in a right choice. Committees would welcome him much more heartily on that footing. If it is urged that then there would be no certainty of the right choice being made, our reply would be that any man with a thorough understanding of the subject and a power of explaining its points clearly and persuasively, would carry a committee with him; and that if he could not do so he would not be suited for the position. The tendency of committees to give a wrong award is much more often the result of ignorance than of bad faith. The majority of them would wish to do right if they were shown the way. It is the assessor's business to show it them.

It should be added that it is of the greatest importance that an assessor should be quite decided in his own conclusions as to the respective merits of designs, and should express them in a clear and definite manner. We can recall one instance in which an assessor was thrown over by his committee because he was vacillating in his expressions and did not seem to know his own mind, and the committee (excusably) declined to pay further attention to him: an unfortunate result in every respect.

The Brussels Exhibition Fire.

THE disastrous fire which destroyed, on Sunday night last, the Belgian, British, and French Sections will have a paralysing effect on this Exhibition in particular, and on International Exhibitions in general. For in our section alone we have lost one of the finest collections of antique furniture ever sent out of this country. One large court was filled with valuable specimens lent by the Victoria and Albert Museum, and, in addition, there were many choice examples from private collections. Well-known English decorating firms had also sent fine exhibits, one firm showing some genuine carvings by Grinling Gibbons. The pottery exhibits, which included picked examples of every English make, have also gone. Tudor panelling, belonging to the Toronto Museum, two large Morlaix tapestries, and priceless Chinese flowered wall-paper, are individual exhibits mentioned in the reports as having been destroyed. The loan collection is said to have been insured for £100,000, but as the articles can never be replaced, it is impossible to estimate the loss on a monetary basis. The fire, at first reported to be due to the fireworks which are a feature of the Exhibition, is now stated to have begun as the result of a short circuit in the illuminated device over the portico of the Belgian Section. The actual consequences of the fire upon similar exhibitions like that next year at Turin has yet to be seen. Exhibition buildings are, of course, intended to be merely temporary structures; but it has been assumed that they are fire-resisting, and that they will afford some protection for the priceless treasures which will be housed in them. The rapid spread of the flames negatives that idea in the present instance; and an enquiry is imperative not only into the cause of the outbreak, but also into the reason for the wholesale destruction and the apparent absence of firemen and fire-fighting appliances. By three o'clock on Monday morning the fire was reported under control, and it was then ascertained that in addition to the sections already stated to have been burnt, the Italian Exhibit was badly damaged, and that the Danish, Russian, Norwegian, Austrian, Japanese, American, Turkish, and Swiss Sections had suffered in part. The loss is estimated at £4,000,000 by the Brussels correspondent of the "Matin," a large stock of diamonds and jewellery having been destroyed. In the face of such tragic losses one is dumbfounded. But if future exhibitions are not to suffer there will have to be a radical alteration in the construction of their buildings, in the adoption of fire-preventive methods, and in the provision of firemen and fire-fighting appliances. No one will lend priceless art treasures under such risk as is shown to have been incurred at Brussels. From private sources we know that wood was very largely employed in the Brussels buildings; and wood, even when covered with plaster, has here proved useless to stay the spread of fire. Concrete and steel, wired glass, sectional divisions, and fire-doors must have their part in the future. It may involve greater initial expense, but it will be less costly in the end.

Another problem which will have to be considered seriously in future exhibitions of valuable antiques is the question of lighting. At the Japanese-British Exhibition the fine art sections are closed early in the evening, thus obviating the necessity for keeping the lights going at night, though we believe we are right in saying that owing to the velarium used in each room the lights often have to be lit during the day. The National Gallery closes at dusk, and there are no lights. Great care has recently been expended in making this latter building absolutely fire-resisting, new floors and roofs now being constructed, and the wooden sashes on the front now being replaced by metal ones. With exhibition buildings, the illumination of the exterior—if not the interior—is a feature at night time. The indiscriminate ringing round of buildings with many lights is bound to be productive of danger if the buildings themselves are not constructed of fire-resisting materials.

NOTES AND NEWS.

The R.I.B.A. Town-planning Conference.

At the International Conference on Town Planning, to be held in the second week in October, the R.I.B.A. has secured the galleries of the Royal Academy at Burlington House, for the important exhibition of drawings, maps, and illustrations of the most important schemes of town-planning that have been, or are being, carried out, or are proposed. Conspicuous among these will be the designs for the re-planning of Chicago by Mr. Daniel Burnham, by whom the reconstruction of Washington has been largely carried out. Plans for the remodelling of the old quarters of Berlin, and for the great scheme to which the Municipal Council of Paris is committed, including the completion of the Boulevard Haussmann, will also be shown. The international character of the conference is emphasised in the papers to be read. Among the authors are Dr. Rudolf Eberstadt, of Berlin, M. Augustin Rey and M. Eugène Henard, writer of "Les Transformations de Paris," two very distinguished French architects, and Mr. Burnham and Mr. Mulford Robinson from the United States. A paper on "The Planning of Khartoum and Omdurman," from Mr. M'Lean, the city engineer of Khartoum, should be of particular interest as showing what can be done with a clean slate. The King has consented to become patron of the conference, and Mr. John Burns will deliver the opening address. There is no doubt about the keenness with which these questions are being followed in Europe. A single architectural society in North Italy, for instance, has applied for 300 tickets. The Institute is anxious that the British attendance should be on a corresponding scale.

Architectural Departments.

The resignation by Mr. Reginald Kirkby of his post as city architect at Bradford has again let loose the flood of controversy which burst forth when Mr. Edwards resigned the post to assume a similar position in Bradford. A correspondent of the "Yorkshire Daily Post" calls for the costs of the architect's department, and asks three questions:—(a) The question of cost to the public; (b) the use which has been made of such official; (c) a comparison of his work in the city and that done by other architects. He answers them himself, by recording that no statement of cost has been made since the appointment of Mr. Kirkby, that few prominent buildings have been associated with the name of the official architects, and that other buildings of a public and private nature have been erected during the last eight or nine years by Bradford architects, which are as creditable to the architectural beauty of the city as anything done by the city officials. The correspondent adds that the condition of the building trade in Bradford has been deplorable for years, and probably the percentage of the unemployed among our architects is greater than among any other group of workers. As ratepayers, and as capable men, they are entitled to a fair share of that kind of Corporation work which they are able to do, and are justified in objecting to the bread being taken out of their mouths by the creation of unnecessary officials—unnecessary in the sense that the work can be done equally well, to say the least of it, and at less cost to the public. This is looking purely at the material side of the question. On higher grounds we have deprecated the appointment of official architects, not once, but many times. The scheme starts with the idea of saving on the already meagre fees of practising architects; and it excludes the architects of the district from any opportunity of adding to the embellishment or amenities of their own town.

The Housing of the Clerk.

There appear from time to time in the public Press grumbles about the lack of housing accommodation for the clerk, or the man earning £3 or £4 a week. From the pretty constant complaints — one occurs last week in the "Daily Mirror" — it seems evident that the speculative builder works only in very narrow and unenterprising grooves. There are but two types of houses for him, the semi-detached type, ranging in rental from £40 upwards, and the terrace house, with a rental of from £20 to £28 a year. If you cannot afford the semi-detached house you must live in the other. The correspondent in question says that while there is this difficulty for him, dwellings for the man with 30s. a week are getting more and more cheap and sanitary. He complains that "either one has to live in a street where it is an insult to one's friends to ask them to visit you, where dirty little barefoot children play on your very doorstep, or you must live in an ornate 'Laburnum Villa,' the maintenance of which—rent, rates, and taxes" (and one must not forget season ticket) "swallows up all one's available cash." At the bottom we fear this complaint is grounded on the old antagonism of the washed to the unwashed. Probably the clerk is making little if any more money than the workman, but that does not prevent him resenting the want of care in the latter's appearance, or the workman's want of supervision over his children's behaviour. We fear in such case there is little the man of refined temperament can do except to choose his district. Though social reformers may deplore the segregation of rich and poor in different districts—a fact that they usually attribute to the snobbishness of the rich and well-to-do—it is a fact that the number of clean, respectable poor people seems to be on the decrease; and the antagonism between the respectable middle class and the rougher and less respectable elements of the community is not likely to be bridged over by sophistries about the brotherhood of man. At the same time there is a great dearth of houses at a rental of from £30 to £40 a year; and this is a fact that building speculators might bear in mind for the future.

Architecture at Hull.

A correspondent of the "Hull Daily News" suggests the formation of a local body (affiliated to the Royal Institute of British Architects) for the furtherance of the study of the beautiful art of architecture. Says the writer:—"Why cannot we have a Hull and East Riding Architectural Society? Truly in this area we have some of the most celebrated gems of architecture. Who in the profession, no matter in what vicinity, knows not, or has not heard of, Beverley Minster, Bridlington Priory, and the churches of Hedon, Patrington, and Howden? Most of our leading authorities have, in their text books on Gothic art, referred to one or another of them. Besides these there are lesser known examples, containing equally fine details, surely, in the shape of a porch, or a font, or some particular moulding pleasing to the practised eye. There are many men in Hull of repute in the profession, who by virtue of their connection with the R.I.B.A. as Fellows or Associates, could give the necessary impetus required to start a society." What do the Hull architects say?

The Paris of To-day.

According to Mr. William Woodward, F R.I.B.A., London now leads Paris in architecture. Recalling in an article of "The Observer," the Paris of 1869 and 1871, Mr. Woodward records, with great regret, "the gradual but sure detoriation which forces itself upon one at every turn." Generally speaking, the matters in which Mr. Woodward finds La Ville Lumière lacking are mainly those of municipal administration and cleansing; also the nonchalance of the authorities in clearing off debris and unsightly hoardings round the various excavations for underground railways, etc., which obstructions have become almost a feature of the city. Mr. Woodward also attacks the upkeep of the public buildings. "Where has Paris been during the last fifty years, and wherein has London beaten her during that period? We have beaten her in our roads, in our tube railways, in our underground conveniences, in our shops, in our hotels, in our restaurants, in our public buildings, in our health, in our municipal works generally, and in our traffic regulations. We cannot beat Paris in anything that appertains to art—that is bred and born in every Frenchman and Frenchwoman—and a visit to the Salon and to the Royal Academy this season proves it. No Frenchman could be guilty of placing the Royal Artillery Memorial, just erected in St. James's Park, about six feet out of the centre line of the Duke of York's Column, and I am sure no Frenchman could be accused of paving the walk round that monument with memorial tablets of the dead heroes. Let Paris get rid of her incongruities; let her administrators remember that money expended upon the city is returned by the money expended by charmed visitors; deal with her contractors as we deal with ours; stop her handbills; clean and water her streets better; and, although one would have not dared to have breathed it fifty years ago, let her take some lessons from London, and we will return to our old love."

The Liverpool Sketch-Book.

The great lack, generally speaking, of a thorough grounding in monumental work is one of the defects of English architectural training, and more or less explains the failure of English architects when confronted with a problem to be solved in the "grand manner." The School of Architecture at Liverpool University, under Professor Reilly, has become closely identified with the modern and growing movement for a closer study of monumental architecture, and we need hardly emphasise here (seeing how frequently we have done so in the last few years) the importance of such study. By arrangement the publishers of "The Architects' and Builders' Journal" have arranged to issue in September next, under the above title, the first annual of the Liverpool School, a quarto volume, containing some 112 illustrations, at the modest price of 2s. 6d. nett. This will contain designs and measured drawings by present students of the school, through the work of its travelling scholars, of its old students, and others connected with it directly or sympathetically. For the first time there will be published detailed drawings fully shaded and rendered of St. George's Hall, Liverpool, (Elmes and Cockerell), the Taylor and Randolph Museum, Oxford (Cockerell), also measured drawings of the Bank of England, Manchester (Cockerell), the Customs House, Dublin (Gandon), St. Mary-le-Strand (Gibbs), the Palazzo Gran Guardia Vecchia, Verona (Cortoni), and many others. The book will be most valuable to architects and students alike, and is within the reach of all. We have no hesitation in recommending readers to obtain copies, but as the edition is strictly limited, they must order them early. Further particulars and an order form are given on page iii. of our advertisements.

More Vandalism.

Professor Baldwin Brown writes to the "Times" complaining bitterly of the destruction of two fine trees at Coldharbour, Dorking. These two trees were in juxtaposition to the School House. One of them, an elm tree, focused the whole of a uniquely picturesque view. It was "one of the most conspicuous ornaments of the village, sound and undecayed," but it has been felled; and a still finer tree, a Spanish chestnut, has also shared the same fate. The reason for this is stated by the Professor to be the reconstruction of the said school. The coal shed of the master's house is to occupy the site of the elm tree; and the school latrines are to occupy that of the chestnut. There seems to have been no particular reason why those buildings could not have been placed elsewhere and the trees saved. "I am not craving space for these lines," writes Mr. Brown, "merely to complain of what has been done, though the matter is lamentable enough to excuse this, but I would ask, if possible, help to make this sort of thing less easy for the future. The Government has recently shown its solicitude for our older architectural monuments by the appointment of Royal Commissions for the survey of them, and the time will probably not be long before it follows the example of the Prussian and other European Governments, and takes measures in the interest of the preservation of the natural beauties of the land. Till this comes about it is incumbent upon all who look on these matters from the public standpoint to do their best to prevent these local aberrations. The architects for this school reconstruction, a London firm of standing, surely did less than their duty as members of an artistic profession; surely the Surrey Education Committee were not fully mindful of Surrey interests when they failed to impress on the local authorities the need of considering seriously what they were doing. The Education Department takes a small view of what education really should mean if it is quite careless as to amenity in the surroundings of schools, and passes by on the other side" when architecture or natural beauty falls into unheeding hands.

A German Archæologist.

The death is reported, from Strasburg, of Professor Adolf Michaelis, the German archæologist, at the age of 76. Dr. Michaelis, who had travelled considerably in Greece and Italy, was the author of a large number of works on archæological subjects, and from 1872 until 1907 held the post of Professor of Classical Archæology at Strasburg University, where he organised the archæological museum. Professor Michaelis has also held the posts of Professor of Archæology at the Universities of Greifswald and Tübingen. He was an LL.D. of Cambridge and Edinburgh Universities.

The Meteorological Office.

The Press has chronicled the appointment of Mr. R. G. K. Lempfert, M.A., to the position of superintendent of the Forecast Department of the Meteorological Department—or as our contemporaries facetiously term it—to the post of Clerk of the Weather. This department is, by the way, to inhabit a new building now being erected for it in Exhibition Road, South Kensington. Gradually the collection of unsightly iron sheds is being removed to make room for more reasonable buildings. One wishes, however, that the department could as easily move the causes for our bad summers as it can itself be moved.

All Saints' Church, Woodham, Woking.

A mile to the north of Woking Station lies the Church of All Saints, Woodham, built from the designs of Mr. W. F. Unsworth. The church lies nestling among thick pine woods, and the idea of the architect has been to produce what is essentially a village church, simple in its lines and low in its proportions, with an oak-shingled central spire in true old Surrey fashion. The church is entered on the south side by an oak porch of ample proportions with broad oak seats. As regards the interior of the church the scale that should belong to a village church has been preserved throughout. The nave arcade consists of five bays of clustered columns, and next the chancel are two smaller arches of 4ft. span, over which the rood-screen is to be constructed, approached by a staircase and steps crossing the aisle, giving access to the rood screen through two openings; the same stairs lead to a muniment room over the entrance to the Lady Chapel. The choir is arranged with a clerestory arcade in the north and south aisles. The altar front and rails are carried out in olive, oak, ebony, and cedar, the former from the Mount of Olives. An arch in the south side of the choir opens to the Lady Chapel, with seating accommodation for about thirty. The west window of the nave, designed by Professor Moira, represents the Archangels of Light triumphing over the Powers of Darkness. It is a fine work, showing a powerful draughtsmanship and a masterly use of colour. The external walls are of Bargate stone carefully coursed in scale with the building; hand-made tiles have been used for the roof, and Monks Park Stone has been used for the windows. A few works still remain to be carried out, including the reredos, rood and choir screens.

NEWS IN BRIEF.

The Commissioners of Works give notice that the hours of closing the Picture Galleries at Hampton Court Palace on public days will in future be as follows: 6 p.m. in the months of May, June, July, and August; 5 p.m. in the months of March, April, September, and October; and 4 p.m. in the months of January, February, November, and December.

* * *

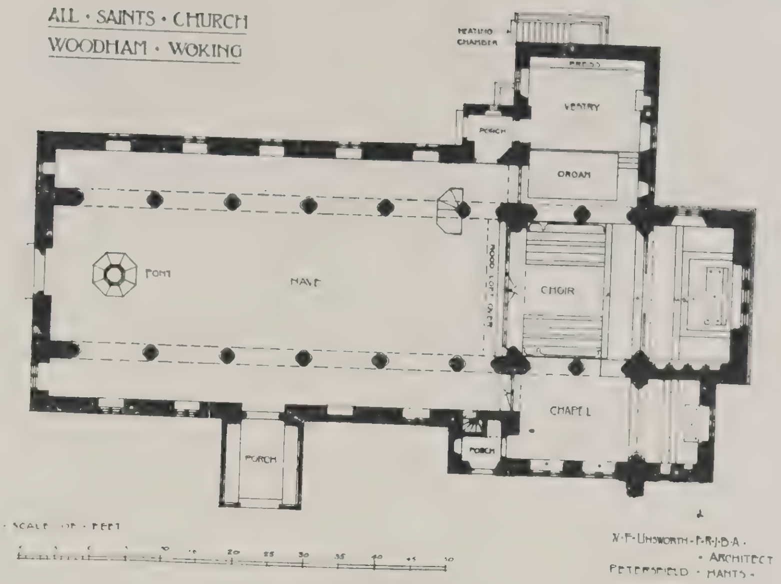
The eastern portion of the crypt under the Guildhall, London, was opened to the public on Monday week. The western crypt, which is believed to have collapsed during the great fire, and to have been restored by Wren, is still used as a storehouse, and next year being the quincentenary of the Guildhall, it is suggested that it would be a suitable date for its restoration. The eastern crypt is open from ten to five daily except Sundays.

* * *

The Guildhall, Westminster, the office of the Middlesex County Council, and the Middlesex Sessions house, which stands facing the north front of the Abbey, are to be extended at a cost of about £68,000.

* * *

The new Paul's Cross, which has been erected in the garden of St. Paul's Churchyard, with a sum of £5,000 bequeathed by the late Mr. H. C. Richards, K.C., has been completed; but the opening ceremony will not take place until after the vacation. The column, which is 30ft. in height, is surmounted by a bronze figure of St. Paul holding a pastoral staff. The memorial is erected, to all intents and purposes, on the exact site occupied for many centuries by the famous Paul's Cross.



The death is announced, on August 5, of Mr. Samuel Jackson, Architect and Surveyor, of Bradford. Mr. Jackson, who had been in feeble health for some years past, was well known in his district and had considerable experience in arbitration work.

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Mr. Paul R. Montford, R.B.A., who is executing the statue of the late Sir Henry Campbell-Bannerman for Westminster Abbey, has nearly finished the mould. There remains the work in marble and the casting of the bust in bronze. The decorations also will be in bronze. The bust will stand in a niche of black marble, the pilasters of which are decorated with thistles in token of the nationality of the late Prime Minister. The pedestal upon which the bust will stand is to be of red marble, with laurel wreath in bronze.

Photo: E. Dockree.

ALL SAINTS' CHURCH, WOODHAM, WOKING: THE MORNING CHAPEL.
W. F. UNSWORTH, F.R.I.B.A., ARCHITECT.
(See Centre Plate.)

* * *

The memorial to Mr. John Boyd Dunlop, the inventor of the modern pneumatic tyre, is to be erected in the Princes Gardens, Edinburgh. Mr. H. S. Gamley, A.R.S.A., is the sculptor. The memorial will stand upon a raised platform architecturally with twin flights of steps leading up on either side. It will be surmounted by a classic female figure seated on the globe, her right arm resting on an ornamental motor wheel, emblematic of its universal use over the world, speed being indicated by the figure of Mercury held in the left hand.

* * *

A building to shelter the "Nigg stone" at Nigg, which contains the earliest Celtic designs known, has been erected by Mr. Andrew Carnegie.

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A serious crack has developed in the wall of No. 9, Staple Inn, Holborn, E.C., and the house has been shored up for the purpose of repair. This house, rebuilt in 1729, faces the entrance from Holborn and is over the archway leading to the inner court by the Patent Office Library.

* * *

Mr. Edward Robert Robson, F.S.A., F.R.I.B.A., F.S.I., being now free from all public appointments (except that of architect to the Royal Institute of Painters in Water Colours), announces that he has taken as junior partner Mr. Joseph Harold Gott, and that the practice will henceforth be continued under the title of "E. R. Robson and Gott," at Palace Chambers, 9, Bridge Street, Westminster, S.W.

* * *

The Guardians of St. George-in-the-East, London, are inviting applications for the position of architect to their Board. Applicants, who must be duly qualified and certificated architects, will be required to prepare plans, specifications, etc., to attend meetings of the Board and committees when required, and to supervise alterations and repairs, etc., at the Guardians' establishments. The architect appointed will be paid a retaining fee of £52 10s. per annum, and a commission of £5 per centum on all contracts not exceeding £2,000 per contract carried out under his supervision. Applications, stating particulars of qualifications and experience, must be forwarded to Mr. R. M. Lochner, clerk, Guardian Offices, Raine Street, Old Gravel Lane, E., by 10 a.m., on August 25.

* * *

A company in Queensland has an arrangement with the Government by which it is to erect a large mill for the purpose of making spirit from pine trees, and, in consideration of a concession, has agreed to pay royalty at a reduced rate on the tops of trees, which hitherto went without payment. The arrangement will only come into force when the Nananga railway line is built, and the first sod has just been turned. The idea underlying this arrangement was that timber should not be cut and wasted until it could be hauled to market. Pine deteriorates as soon as it is cut, and after a very little time is quite useless unless protected from the weather.

* * *

An International Hygiene Exhibition is to take place in Dresden next year. A notable British Committee, with H.R.H. Princess Christian as Patroness, Sir Thomas Barlow, Sir William Bennett, Mr. Henry Butlin, Sir William Church, Mr. J. M Cotterill, Mr. Andrew J. Horne, Mr. W. A. Jamieson, Surgeon-Gen. Sir Alfred Keogh, Mr. D. N. Knox, Sir John Lentaigne, Sir Thomas Oliver and Sir William Treloar as Vice-Presidents, and nearly every hygienist of importance as members, will organise the Scientific Department, and will exercise a strict censorship over goods submitted for exhibition, while, in addition, the Administration in Dresden reserves to itself the right of refusing any undesirable exhibit. Thus the merit of articles displayed in the Exhibition is *ipso facto* established. Further information can be obtained from the London offices of the International Hygiene Exhibition, 47, Victoria Street, S.W.

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The Willesden Paper and Canvas Works, Limited, has declared dividends at the rate of 15 per cent. on the ordinary shares, and 10 per cent. on the deferred shares for the year ending June 30.

* * *

The late Professor George Aitchison, of 150, Harley Street, London, W., R.A., past-president of the Royal Institute of British Architects, aged 84 years, left estate of the gross value of £13,077, including £10,974 in net personality. The testator bequeathed £100 to the Royal Academy Fund for Architects' Pensions. £100 to the Royal Institute of British Architects Benevolent Fund. His two University College of London prizes to the Royal Academy. His Royal gold medal (after the death of the survivor of trustees) to the Royal Academy of Arts. To his friends Timothy Holmes, Thomas Armstrong, C.B., Benjamin Inglelow, W. J. Locke (late secretary of the Royal Institute of British Architects), Henry Sweet, and J. J. Shaw, £5 5s. each, for a mourning ring. £50 to his clerk, Walter Homewood. £50 to his former housekeeper, Eliza King.

* * *

The total value of the buildings erected in Winnipeg during the first six months of the present calendar year amounted to nearly ten million dollars, an increase of two and three-quarter millions over the highest previous record. Building operations in 25 Canadian cities during May, 1910, show an average increase of 50 per cent. over the figures of May, 1909.

* * *

The committee which deals with the Bradford City Architect's Department met recently under the presidency of Ald. H. M. Trotter, and considered the position created by the resignation of the City Architect. Mr. R. G. Kirby. It was decided to advertise for a successor at £300 per year, which is £50 less than the previous salary. The chairman endeavoured to get the question postponed for six weeks, and maintained that by a general move upwards in the office the position could be satisfactorily filled and money saved, but the committee decided otherwise.

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Mr. W. J. Devlin, A.R.I.B.A., late of 12, Buckingham Street, Strand, London, has removed to 156, Union Street, Aberdeen.

* * *

Messrs. William and T. R. Milburn, F.R.I.B.A., Architects, have removed from 20, Fawcett Street, Sunderland, to 3, Park Terrace, Toward Road, Sunderland.

* * *

Mr. J. T. Ashton, architect, of Ashton-on-Mersey, died recently. A few years ago he was a prominent public man at Altrincham, and had been chairman of the district council.

* * *

At a meeting of the City Corporation in regard to the proposal to sanction the erection of an iron and glass shelter over the main entrance to Cannon Street Station (Metropolitan District Railway), Mr. W. W. Green pointed out that such shelters were often a great annoyance, as the public ran under them the moment there was a shower, and pedestrians were in consequence hindered. Mr. J. Gunton, chairman of the Streets Committee, agreed that the point was an interesting one, and accordingly took the report back.

* * *

The R.I.B.A. Office and Library will be closed from the 22nd August to the 3rd September owing to alterations necessitated by the extension of the Institute premises. Party-wall notices, forms of building contract, and other R.I.B.A. publications may be obtained during this period from Mr. B. T. Batsford, 94, High Holborn, W.C.

* * *

The Lord Mayor, at a meeting of the Court of Common Council at the Guildhall, in calling the attention of the Court to the action he had already taken in trying to advance the apprenticeship and training of the young, said he would preside at a conference of representatives of all classes of industries and millions of workers to be held in the Guildhall, but had stipulated that the gathering should be thoroughly national in character and non-political, and that the proceedings should be arranged so as to focus the conclusions of the conference in the best form fitted to promote the important object in view. The Court then proceeded to nominate six members to work with the Lord Mayor as a committee representing the Corporation, namely, Sir George Woodman, Sir T. Vezey Strong, Sir Richard Stapley, Deputy Morton, M.P., Mr. A. J. Hollington, and Mr. George Briggs.

* * *

The City Corporation has voted £30,000 towards the cost of completing the widening of Bishopsgate Street Without. The London County Council agreed to contribute to the cost of the widening at the junction of Bishopsgate Street Within and Cornhill, the sum not to exceed £3,000. The estimated cost of the improvement is £7,000. About £80,000 was voted for street improvements and in other directions in which the ratepayers are interested. The cost of the large subway for pedestrians at the foot of Blackfriars Bridge was reported to be £25,869, which has been paid by the London County Council in return for the widening of Blackfriars Bridge. The Court adjourned for the summer vacation.

* * *

Mr. Frederick Christian Wellstood has been appointed secretary and librarian to the trustees and guardians of Shakespeare's birthplace in succession to Mr. Richard Savage, who retires from the office in October. Mr. Wellstood, who is now superintendent of the new reading-room at the Bodleian Library, has been since 1902 a senior assistant there. There were 182 candidates for the post.

* * *

Mr. Frederick Chance has laid the foundation-stone of the Stanwix Institute to be erected in the memory of Mr. Miles MacInnes, of Rickerby. There was a large gathering of friends from Carlisle and the county, over which Mr. Henry Howard, Chairman of the County Council, presided.

* * *

Mr. Paul Montford has completed the clay model of the bust of the late Sir Randal Cremer, which is to be placed in the Palace of Peace at The Hague in commemoration of his work for international peace. The bust has been inspected by the President of the Local Government Board.

* * *

The restoration of the ancient moat and bridge at the west front of Hampton Court Palace was delayed in consequence of the death of the late King. At that time the question of the designs of the castellated parapet along the front of the moat and the pillars and finials on the bridge were under consideration. The work, which has been put in hand, is expected to be finished in about two months. There were sufficient thin red bricks recovered from the excavations to complete the walls of the moat where they were defective, and the freestone coping and embrasures are being made to harmonise with the rest of the buildings. The bottom of the moat was sown with grass seeds in the spring, and now presents the appearance of a well-kept lawn, access to which is obtained by a doorway placed in one of the towers abutting on the moat.

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The old castle at Newcastle, known more familiarly among archæologists and antiquarians as the Norman Keep, is once more in the hands of the repairers, and is being surrounded by scaffold poles. It was built between the years 1172 and 1177.

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Messrs. E. A. Roome and Co., builders, of 56, Basinghall Street, E.C., and Urswick Road, Homerton, N.E., have secured the contract for the erection of Nos. 37 and 29, Marchmont Street, W.C., under the supervision of Messrs. Young and Hall.

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The committee in charge of the scheme for a monument to ex-President Cleveland have decided that it shall take the form of a granite tower of novel construction at Princetown University. The estimated cost is £20,000, of which £15,000 has already been received.

* * *

The French President has awarded medals to the following architects, among others, for services rendered during the recent floods at the capital: Silver medals, first class to M. Jalabert, Paris; M. Pichot, Meudon; M. Pray, Architect-in-Chief, Prefecture of Police; a silver medal second class M. Mancel, Saint-Ouen; and a bronze medal to M. Batton, Argenteuil.

Mr. J. Taylor, Chairman of the Lordship Lane Progressive Association, writes to "The Star" to say that the decision of the L.C.C. Housing Committee is a wise one, "for a large portion of the estate is absolutely unsuited for the erection of working-class dwellings, owing to the distance at which it is situated from any line of communication. The present Housing Committee have done more to develop the estate and make it attractive to residents than any previous committee. Had the estate been developed upon the lines which the first Progressive Housing Committee started, it would have been an ugly, barracky, depressing conglomeration of houses; now it is an ideal spot."

* * *

The directors of the Hampstead Garden Suburb Trust, Limited, in their report to the shareholders, state that villas and houses have been, or are being, erected on seventy-four plots at a cost of £46,000. The Garden Suburb Development Company have undertaken the construction of houses valued at £139,000, and the Hampstead Tenants, Limited, have erected buildings to the value of £172,000. Other buildings have been erected at a cost of £40,000. The church, St. Jude's-on-the-Hill, will be consecrated by the Bishop of London when it is completed, and the building of the Free Church will, it is hoped, be commenced in the autumn. It is hoped that a first-rate secondary school for boys up to 12 and girls up to 18, with special relations with the University colleges, may be provided later.

* * *

The statue of Dr. Samuel Johnson, erected outside St. Clement Danes Church, was unveiled at a late hour on Thursday week by Mr. Percy Fitzgerald, the donor. The Rector of St. Clement Danes (the Rev. Septimus Pennington) died a few days before, and it was thought appropriate to unveil the statue, in the erection of which he was greatly interested, before his interment. The statue is a life-size figure in bronze, and the face is copied from Reynolds's well-known picture. It stands on a granite pedestal, and the inscription is as follows: "Samuel Johnson, LL.D., critic, essayist, philologist, biographer, wit, poet, moralist, dramatist, political writer, talker. Born 1709, died 1784. The gift and handiwork of Percy Fitzgerald, F.S.A., and erected by the Rev. S. Pennington, M.A., Rector of St. Clement Danes, 1910."

* * *

A total of £2,813 was realised in the sale of the contents of Parnham, the Dorset residence of the late Mr. Vincent Robinson. A German sixteenth century armoire made 70gs.; a three-tier sideboard from Godstone Priory and Nonsuch Palace, 120gs.; an old Italian draw table, 33gs.; two old Italian chairs, 80gs.; a French early seventeenth century armoire, 43gs.; an early seventeenth century cupboard, 60gs.; and an old Chinese black and gold lacquer work cabinet, 135gs.

* * *

Canon Benham, the rector of St. Edmund King and Martyr, Lombard Street, a well-known antiquary and authority on Old London, died recently.

* * *

The chairman and members of the Shoeburyness Council on August 3rd formally opened eight cottages erected by Mr. Michael Simpson, exclusively for old age pensioners. Each cottage is intended for two persons, and is let at 3s. per week, inclusive of rates and taxes.

Messrs. Stockdale Harrison and Sons, Leicester, the architects for the Usher Hall, Edinburgh, and Mr. H. H. Thomson, who is associated with them, have done much important work in Leicester, notably the new bank for the Stamford Banking Company, which cost £20,000, and the Vaughan Working Men's College. Mr. Thomson won in competition the Isolation Hospital for the Corporation of Leicester, which cost £56,000, and his design was placed first for a new Masonic Hall in Leicester.

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Mr. J. F. Holden, architect, of Manchester, is dead. Mr. Holden was the Hon. Treasurer of the Manchester branch of the Dickens Fellowship.

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Mr. Cecil Bernard, a young architect, of Burton-on-Trent, has been presented with the Royal Humane Society's medal and certificate for saving the lives of two ladies who were in danger of drowning. The presentation was made by the Mayor.

* * *

Owing to a stack fire at the Old Priory Farm, Dartford, Kent, the remains of the Old Priory, founded by Edward III. in 1344, very narrowly escaped destruction, but the building was saved by strenuous efforts.

* * *

The Royal Commission appointed under the chairmanship of Sir John Rhys, Principal of Jesus College, Oxford, to make an inventory of the ancient and historical monuments and constructions of Wales and Monmouthshire, issued their first report on Wednesday week. The report describes the methods which the Commissioners propose to adopt in making their inventory, and the hope is expressed that the visits made by the Commissioners to different centres will arouse a general interest in antiquarian research, and a desire to preserve the ancient monuments of Wales from destruction.

* * *

Mr. J. W. Synnerton, sculptor, has died in the Isle of Man at the age of 62. He first attracted attention by his statue "Cain," exhibited at the Royal Academy in 1873, and he has been a regular exhibitor there until recent years.

* * *

The remains of 30 bodies have been discovered by the explorers who are delving on the site of the ancient Roman city at Caerwent. The bodies were found generally in rows from east to west above some of the Roman masonry. As there was an early monastery there, it is suggested that there may also have been a burial-ground, and that the remains may not be Roman, but may belong to the monastery burial-ground.

* * *

Important extensions are to be carried out shortly at Port Talbot Docks, Swansea, at a total cost of £136,000. Of this amount £86,000 is to be expended on new sidings and lines to accommodate between 3,000 and 4,000 wagons, or from 30,000 to 40,000 tons extra traffic. Parts of the dock area are to be deepened, and new wharves, tips, and power stations are to be erected.

* * *

The fine old Tudor mansion Porters Grange, Southend, at one time the residence of Disraeli, has been sold, and the estate is to be developed for building purposes. An effort is to be made by the townspeople to save the estate.

It is reported that in regard to the opening to the public of the Crypt at the Guildhall, Mr. Sydney Perks, F.R.I.B.A., the City Surveyor, states that the whole of the building was erected at one time. It was begun in 1411 and completed in 1425, the porch being added last of all. No discoveries of Norman work have been made. Everything found—including windows, staircase, and passages—helped to fix the date as the fifteenth century. The Roman remains now exhibited were stacked away like rubbish in a back yard, and until they were recently unpacked no one knew how fine they were.

* * *

A famous fourteenth century window of priceless local and antiquarian interest in the Parish Church of Ashton-under-Lyne has been smashed, it is alleged, by a man and boy in order to rob the offertory boxes. The window represented a scene from the old family life of the Asshetons, one of whose members figures in a legend as "the Black Knight" who got rid of a succession of wives by rolling them down hill in spiked barrels and whose effigy is still every Easter Monday carried round the town and burned. Last Easter "the Black Knight" was the central figure in a town pageant.

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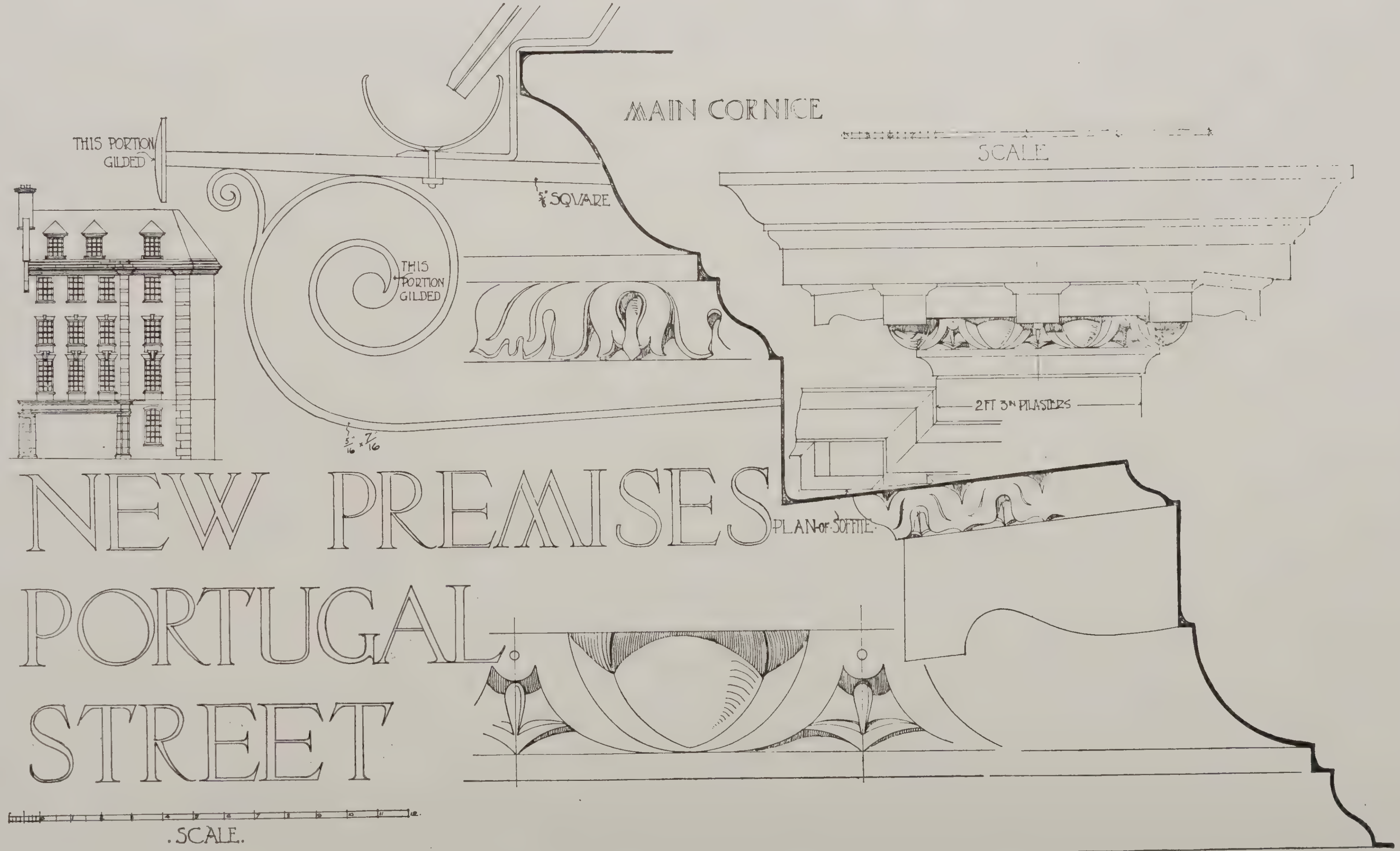
The partnership, existing for 21 years, of Messrs. Young, Tinker and Young, builders and contractors, of Monsall Street, Queens Road, Manchester, was dissolved as on June 1, 1910, owing to the failing health of Mr. Daniel Young. The business since that date has been carried on by William Tinker and Robert Young under the style of Tinker and Young, and for family reasons the business has now been converted into a private limited company under the style of Tinker and Young, Ltd. The assets and debts of the old firm are taken over by the new company.

* * *

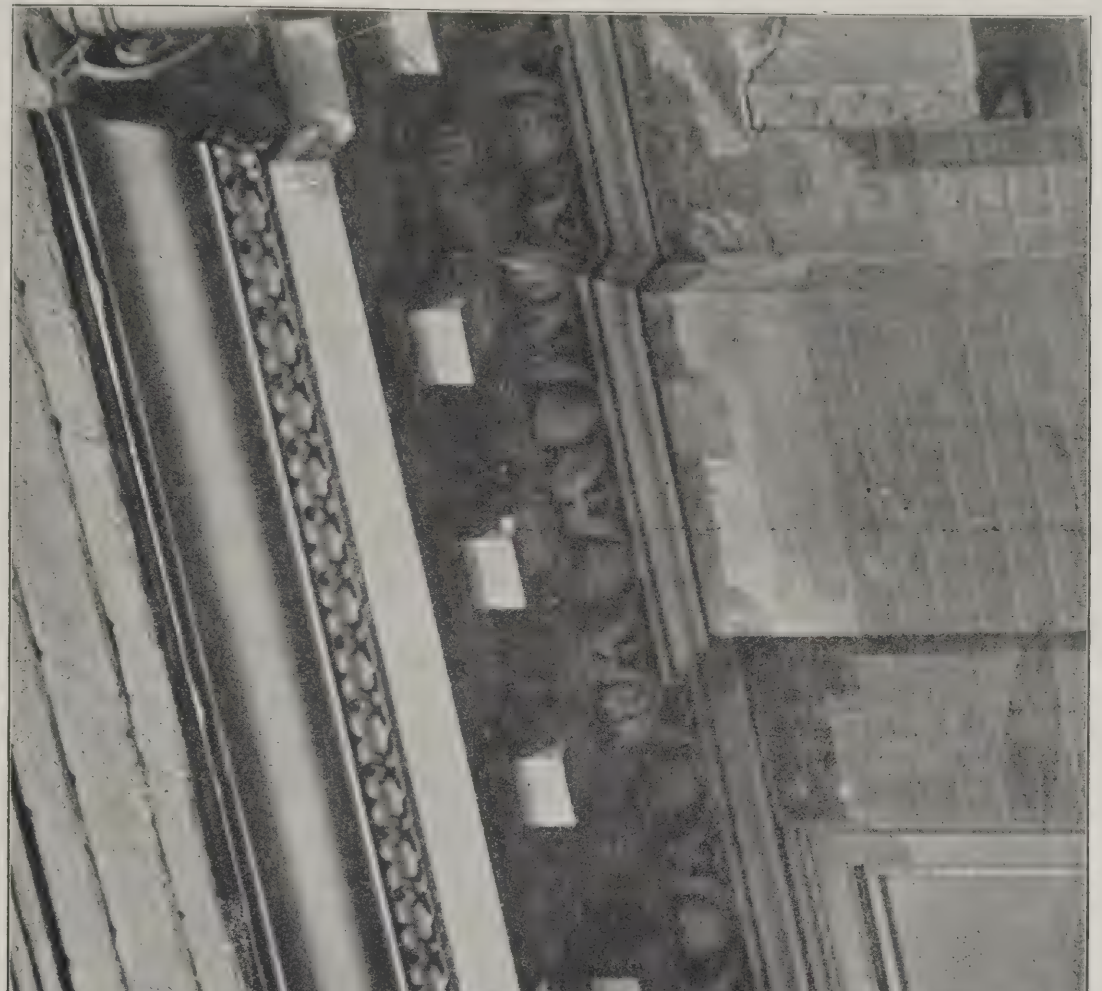
The architect for the Middlesex Guildhall extension is Mr. J. S. Gibson, F.R.I.B.A., and he, in conjunction with the County Surveyor, has submitted a scheme in which two new Courts, with a public waiting hall adjoining, are to be provided on the ground floor. On the first floor will be the committee rooms and offices, with a wide circular corridor giving direct access to every room. The present Council Chamber, seating 78, is to be replaced by one with accommodation for 105 members, with galleries for reporters and the public. The Special Building Committee are authorised to obtain tenders for the work from not less than 12 contractors approved by the Council. The new buildings are to be in red brick and Portland stone.

* * *

Consumers of gas in the district of the Gas Light and Coke Company will be glad to note that in the speech of the Governor (Mr. Corbett Woodall) at the meeting of the shareholders on the 5th inst., it was foreshadowed that there would be a further reduction in the price of gas at the end of this year, making the seventh reduction in eight years. This continuous decrease in the price charged by the Gas Light Company is very welcome alike to the consumers, who benefit to the extent of nearly £100,000 a year by every reduction of 1d. per 1,000 cubic feet; to shareholders, whose dividend can only rise as the price falls; and to the employees, whose share of the profits also varies inversely with the price of gas.



This drawing gives details of the cornice shown on the opposite page and of the wrought-iron gutter brackets.
CORNICE ON PREMISES IN PORTUGAL STREET, LINCOLN'S INN FIELDS, W.C.
HORACE FIELD, F.R.I.B.A., AND E. SIMMONS, ARCHITECTS.



This cornice is on the building occupied by "The Church Times" and Messrs. George Bell and Sons, the Publishers. It is executed in cement, painted. The mouldings are of good outline, and the whole cornice is bold in effect.

CORNICE ON PREMISES IN PORTUGAL STREET, LINCOLN'S INN FIELDS, W.C.
HORACE FIELD, F.R.I.B.A., AND E. SIMMONS, ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

MEMORIALS TO THE LATE KING.

Cromer.

At a meeting of the parishioners of Cromer, in the Parish Hall, it was resolved to support the scheme for the extension of the Norfolk and Norwich Hospital, to which half the funds to be collected will be devoted; the other half to go to the Cromer Cottage Hospital.

Windsor.

An appeal is being made for sums towards the memorial fund here, which is to clear the Edward VII. Hospital, Windsor, of debt, to endow the same, and to erect a statue to the late King in the grounds in front of the Hospital.

Manchester.

Opinion here is at present divided between the erection of a Consumption Hospital and the erection of an Art Gallery on the Piccadilly site, including the laying out of the latter.

Felixstowe.

A town meeting has been held at which alternative proposals to erect a statue or to contribute towards the Croydon Hospital were discussed. The matter was deferred for consideration in October.

Warwickshire.

At a meeting at the Shire Hall, Warwick, it was decided that "the best form of memorial is the establishment of an open-air hospital for the treatment of an instructional character of persons suffering from consumption." A large and influential committee was formed to carry out the scheme.

Ealing.

A town meeting has decided to dedicate the new hospital now building as a memorial; and the Mayor is now seeking permission for the use of the name "King Edward Memorial Hospital."

London.

On the invitation of the Lord Mayor, the following have joined the Mansion House Committee for providing a memorial in London to King Edward:—The Archbishop of Canterbury, Viscount Iveagh, Sir Thomas Barlow, Mr. Henry T. Butlin, Mr. W. H. Winterbotham, Sir Edward Poynter, Sir Edward Hain, and the Chief Rabbi.

Scotland.

Feeling in Edinburgh favours a scheme for the improvement of Holyrood Palace. It is understood that Glasgow may agree to the scheme, particularly if Holyrood is so improved as to be habitable by the King and Queen for a little while each year. The movement for a Scottish National memorial was started at a private meeting of representative citizens in Edinburgh in June. The meeting, which was called by Lord Provost Brown, approved of the proposal, and the co-operation of the local authorities is now sought.

Oxford.

The memorial scheme will probably take the form of a sanatorium for the treatment of tuberculosis for the City and County of Oxford. Plans for this have already been prepared, and the committee have in view a favourable site at Shotover.

Darlington.

Nothing definite has yet been decided, but the suggestion most favoured is that the Feethams Field, which the Corporation recently purchased, should be utilised in some manner—possibly by the erection of a monument or by the building of a Town Hall and municipal offices of which the town is in need.

Chard.

Three suggestions have been made as to the nature of the memorial. One is the erection of baths and wash-houses, which are badly neded; the second that a pleasure ground be laid out, and a third that the Jubilee Homes, erected to commemorate Queen Victoria's Jubilee, should be extended.

MAGAZINES & REVIEWS.

The "Architectural Record" (New York) is entirely taken up with illustrations of "American Seaside Homes," coupled with a short introductory article on the subject. Both are disappointing. Seaside homes, regarded as a class, should have a certain definite character suggested by their situation. There is no hint of such an idea in the article, and nothing of a special character in the houses, with the exception, the "new house at Buzzards Bay," of which Mr. Harry B. Russell is the architect. This has the character we want (in some degree at least), in its simplicity, low proportions, and plain masses of chimney-stacks. The rest of the designs published have no special character at all; they might be villas anywhere. A seaside house should suggest the seaside, either in an appearance of strength to resist gales, or in some character of design, not easily to be defined in words, suggestive of sea and shipping. One very good example we know; the terrace designed by Mr. Prior, at West Bay, Dorset. This is close on the sea, and there is an indefinable suggestion of ship construction about it which is very unusual; it looks as if made for the situation. But we seldom hit on anything like this in English seaside houses; and the Americans do not seem to get on any better. Some of the houses illustrated would do very well for lake houses, but not for seaside houses. There is (or should be) all the difference between the two.

The "Berliner Architekturwelt" is also largely occupied with a special class of designs—exhibition pavilions and kiosks for the exhibition of special classes of building materials and patents. Many of these are very interesting and original, and might be noticed with advantage for new hints for English exhibitions. There are also a series of designs, some of them very good for terra-cotta stoves—a specially German institution.

"Moderne Bauformen" seems to go on with a never-ending variety of illustrations of furniture and interiors—for, in spite of its title, it deals much more with these than with actual architecture. There is less of eccentricity and more of real design and character in these things than there used to be in this publication; a great deal of the simpler furniture is very good and contains what may be called new ideas.

The "Burlington Magazine" gives two studies of curious quasi-classic capitals, both consisting of Ionic volutes with a Corinthian abacus above and Corinthian leafage below. One of these is from a print by Giovanni Antonio di Brescia, the other from an etching by Altdorfer; both in the British Museum. They are obviously the same object drawn by two different hands, and present some curious differences of detail along with general resemblance of type. The original was apparently a capital from one of the Latin basilica churches. In an article on the Munich exhibition of Mohammedan art, Mr. Roger Fry draws attention to various details in Mohammedan art bearing a resemblance to details in Assyrian art. "It would be possible," he says, "by the help of exhibits at Munich to trace certain Assyrian forms right through to mediæval European Art." We should think it very likely; the point has been mentioned before in literature of Art, but Mr. Fry adds some new observations to it. In connection with the subject we may mention that the Italian mediæval device of columns resting on the backs of animals is found in an Assyrian bas-relief representing a palace. The "Burlington" contains also an article with some illustrations of English mediæval alabaster work—sculpture; also an illustration of a very fine bronze crucifix, from a private collection, attributed to Benvenuto Cellini.

The "Art Journal" contains an article by Mr. Yockney, entitled "An artist's holiday," which seems to be mainly a peg on which to hang a number of illustrations of nature by different well-known painters, ancient and modern. If we do not quite see the point of the article, or its connection with the illustrations, the latter are at all events an interesting set, and include a full-page plate of a landscape by that now rather unduly forgotten artist J. D. Harding. A fine illustration is given of a Dutch painting, "Avenue in a wood," by Hackaert, a seventeenth century painter whose style and composition remind one of Hobbema; or is it that two painters of Dutch landscape necessarily resemble each other? Mr. A. L. Baldry contributes the second of his articles on "Embroidery and Needlework," with some good illustrations, but why did he include the landscape with stags drinking, by the "Decorative Needlework Society"? The society ought to have been better employed than in work so entirely alien from the proper aims and methods of embroidery. Not a word is said in the article to point out the error; in fact, the work is referred to with implied praise, as showing the wide ground the society's work covers. A great deal too wide; embroidery has its own limits, and realistic landscape is outside of them; an "Art Journal" ought to point that out, instead of encouraging such an error.

The "Century" has an article on "Studying Earthquakes," by Professor Jaggar of the Massachusetts Institute of Technology, which has one piece of direct architectural interest in the shape of an illustration of "an earthquake-proof building at the University of Tokio." It is a small brick building to contain seismographs, and it is noted that "the walls have a parabolic curvature, theoretically correct, to withstand a strong earthquake"; the curve is in the section of the outer face of the wall, spreading toward the base; what is the section of the inner face is not shown; presumably perpendicular, but it would have been more to the purpose to have given a section of the whole building instead of a mere picture of it.

The "Fortnightly" has an excellent article by Professor Hartog on "The teaching of nature-study" in schools, and the right use of pencil and brush in connection with it.

In the "Antiquary," Mr. Fryer concludes his article on "Fonts with representations of the seven sacraments," with some illustrations; and Mr. Geo. Bailey commences a series on "Some curious carvings found in old churches." He takes some of the heads in the misericorde carvings as being of value as illustrations of the aspect of people living in those days. Mr. Tavenor-Perry contributes an important article on the interesting subject of "The Shield of Venice" and the history and meaning of its devices.

The "World's Work" contains an interesting article on the running of a big hotel, with particulars of the engineering plant now considered necessary for such a building.

ARCHITECTS UNDER EXAMINATION.

The passion for architectural symposiums in the general Press increases. In "The New Age" for August 11th, Mr. Huntly Carter has fired the following leading questions at a number of eminent architects :—

1. Have recent developments, in your opinion, shown any advance in the direction of increasing the beauty of domestic and public architecture?

2. Do you think that the artist, as distinguished from the artist-architect, should have a real place in the modern practice of architecture?

3. Do you believe that this place should be limited to design, decoration, or any one department of the practice of architecture?

4. Would you say that the causes which prevent artists occupying this place are to be found in the artists themselves or in the public administrators, or does the main cause lie in the limitations of our social life?

5. Have you any suggestions?

The results are various. Mr. Norman Shaw expresses his interest, but regrets that age and ill-health prevent him taking an active part in the discussion. Mr. Ernest Newton says "an architect is an artist or he is not an architect at all. Curiously enough, though we in England have a school of Domestic Architecture which more or less sets the pattern for the rest of the world, the English public, speaking broadly, are completely unaware of the fact, and would be quite uninterested if they were. To them an architect is a professional gentleman, sometimes quite respectable, who is an authority on ancient lights, ground values, etc., with some small skill in drawing plans. To this section of the public art is painting, and an artist is a painter; they have no desire for architecture and no appreciation of it, while on the Continent an architect of repute is accepted as an artist as a matter of course.

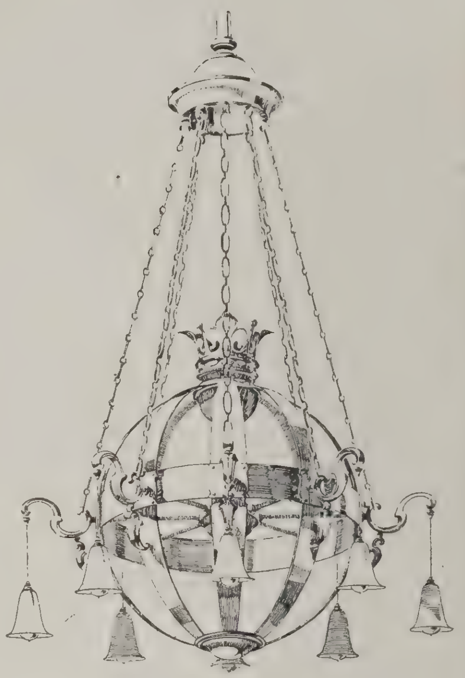
"This total want of understanding either of the meaning of architecture or the aims and accomplishments of the architect naturally produces a class of men who exploit this great art very much to their pecuniary advantage and greatly to the detriment of London and other big towns. Possibly ninety per cent. of the buildings put up in London at the present time are the work of men who have been selected quite at haphazard, because they are somebody's cousin or brother-in-law, or for some equally fantastic reason; no questions are asked—they are architects, and that is sufficient.

"Here and there a few buildings proclaim themselves as the work of accomplished men; and undoubtedly there is a gradual awakening to some sort of appreciation of the art of building. Many of the big commercial firms are now realising that a beautiful building is an asset. There is also a decided increase in the number of those who take a keen, appreciative, and intelligently critical interest in domestic architecture.

"We want no advisory bodies. A bad painter or sculptor simply drops out; a bad musician is of no account, not because there are committees of taste, or censors of art, but simply because the public have sufficient appreciation of those arts to demand and so to create a high standard. If they will only learn to show the same appreciation of architecture there will be no occasion to ask any of these questions."

Mr. G. L. Aitken, F.S.A., of Edinburgh, answers the questions categorically at some length. His main opinion concerns the want of originality in modern work, which he presumes to be due to public indifference.

Mr. C. R. Ashbee also answers categorically. In his opinion there are no new movements since the Arts and Crafts started twenty-five years ago. Its architectural development is best seen in the work of men like Lethaby, Ricardo, Lutyens, Holden, Vorpey, etc. He thinks there has been a set-back and checking of artistic architecture, which is best seen in the fashion "that has grown up for Georgian decoration, excellent, no doubt, in its way, especially when in the hands of good artists like Reginald Blomfield, Lutyens, Belcher, etc., but not really progressive and not useful for the craftsman whose business it is to carry out details and do this inventively." Answering question 2, Mr. Ashbee finds no development in public work; but answers "Yes, as regards domestic building." To question 3 he answers: "No, certainly not." Question 4 he thinks hardly admits a clear answer. "Roughly, much more should be done for (1) education, for (2) bringing artists more together compulsorily (e.g., Parliamentary registration of architects), (3) artists and craftsmen should be given public facilities for showing their work in municipal galleries rent free." To question 5 he answers: "Ignorance, conservatism, and want of imagination."



R.S.M.P. PREMISES, KINGSTON, JAMAICA: ELECTROLIER IN DOME. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT

Professor Reginald Blomfield says :—"I have unfortunately mislaid your letter. It must, I think, be obvious that unless a painter, or whoever it may be, has received a thorough training in architecture, he is not qualified to design architecture, in other words, that only a trained architect can be an architect; and this is more than ever the case under modern conditions of practice."

Mr. T. G. Jackson, R.A., answers :—

1. I think the best of what has been done in London lately is better than any preceding modern work, but for the most part vulgarity, ostentation, and the abuse of ornament have made serious advances, and appear to command popularity.

2, 3, 4. I confess I do not understand the distinction you draw. Architecture is an art or it is nothing. And architects should be artists or they have no right to the title of architects at all.

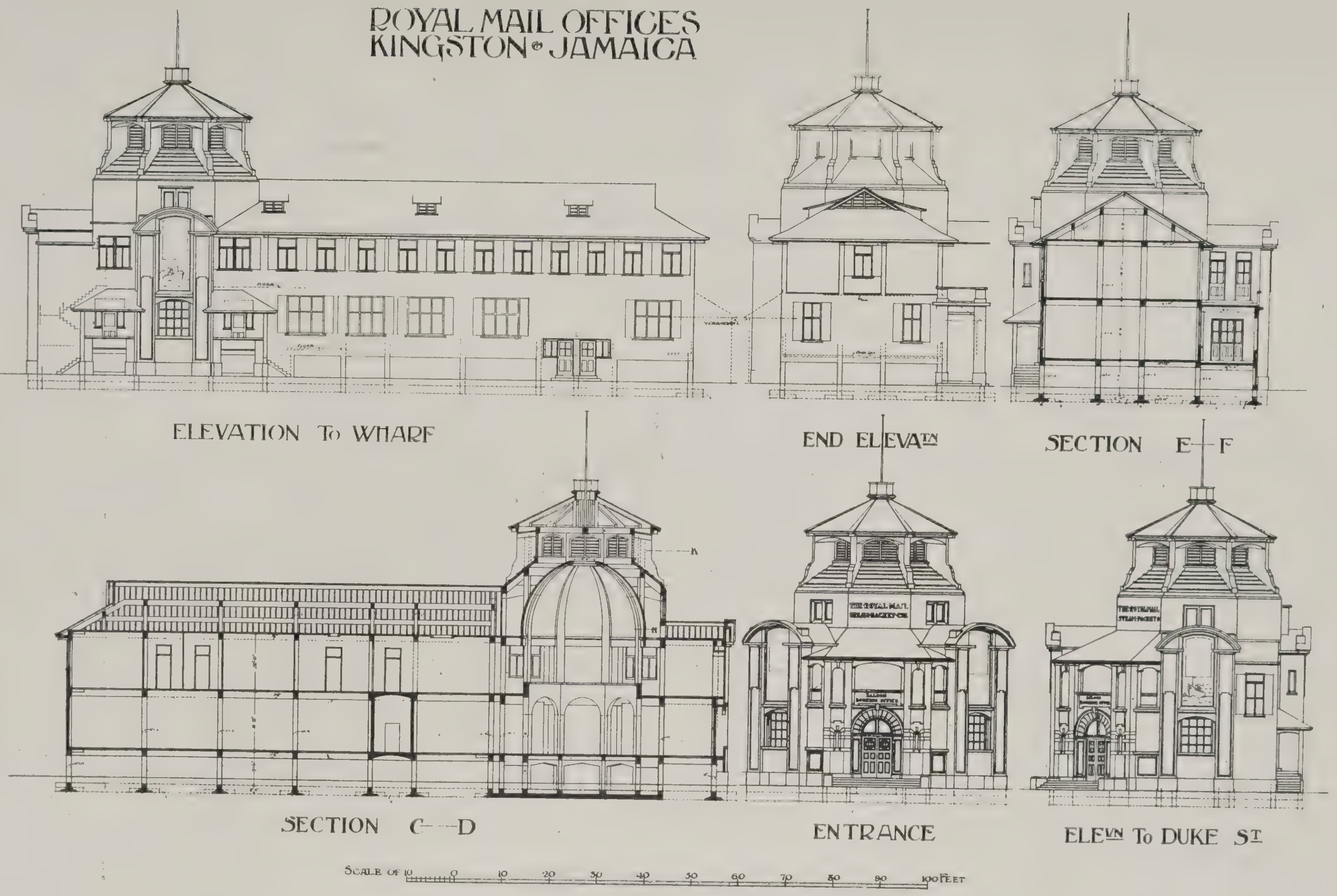
I do not understand what is meant by "the artist as distinguished from the professional architect."

On pointing out the sense in which the word artist is here used, Mr. Jackson replied :—

The co-operation of a studio artist with an inartistic builder would make things worse and worse. Architecture and construction are inseparable if any good result is to be obtained. Consequently a studio artist is *ipso facto* incapable of architecture.

THE ROYAL MAIL STEAM PACKET COMPANY'S PREMISES, KINGSTON, JAMAICA: INTERIOR OF BOOKING HALL. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

(See *page* 174.)



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: SECTIONS, ETC.
LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

(See page 174.)

Professor W. R. Lethaby finds some difficulty in answering the questions. "We always think of one who is really an architect as an artist. Certainly I think a Board of such architects and sculptors and painters is desirable for directing City improvements. Won't someone interested in the formal "economic" way of looking at things, tell us something as to the relation between 'cost' and beauty of the city? How is a city like Munich paid for, and does it pay? How are East, South, and North London paid for, and do they pay better than if they were better? Evidently cost is to some degree a matter of taking money from one pocket and putting it into another. Yes, but if you increase building you drain from other industries. True, but buildings remain; they are tools for further increase; they are productive capital, and labour would be absorbed into fine forms of craftsmanship. Net result, a beautiful city, with more masons and carpenters, and fewer shopkeepers, and the shopkeepers are going anyhow."

Professor Beresford Pite answers shortly:—

"1. Yes; doubtfully.

"2. No; decidedly.

"3. To Arts supplementary to building.

"4. Yes; to all.

"5. Education in Art of a broad and general character."

Mr. Halsey Ricardo is also brief, confessing that he does not understand the thesis propounded. "Artists are not employed designing beautiful buildings. By artists do you mean painters and sculptors as differentiated from architects? Every good architect is an artist." But Mr. Ricardo insists on this thorough and sympathic knowledge of materials, and his training in the science and craft of his profession if he is to deserve the attribute.

Mr. Thackeray Turner thinks, in many ways, architecture is going back as a necessary step to a further advance. He insists that Art is Creation—not copying; inveighs against the foolish restrictions on building resulting from the by-laws, and feels that the only possible line of advance must be in the education of the public.

Mr. Raymond Unwin thinks the forthcoming of a Town Planning Exhibition, by the Royal Institute of British Architects, may afford material for answering some of the questions. "I can only say generally that I think we are only beginning in this country to realise the importance of civic art, and that perhaps the municipal public realises it less than anybody."

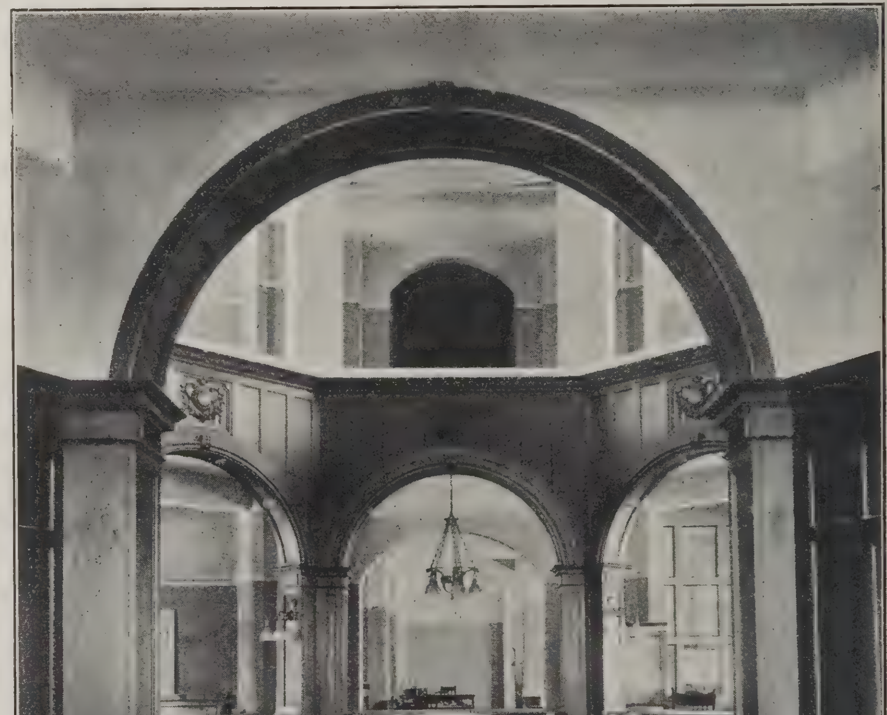
HOTEL ENGINEERING.

Some idea of the fitting up of a modern mammoth hotel may be gleaned from the description of the engineering plant at the Le Salle Hotel, Chicago, as described in "Power and the Engineer." This building, constructed of steel and concrete, faced with stone and brick, is erected on a site measuring 168ft. 6in. by 178ft. It consists of 22 storeys above the level of the pavement, and is supported on 105 concrete caissons which extend to 110ft. below that level. The entire area of the sub-basement is occupied by the power plant, which mainly consists of five boilers, each of 400 h.p. working at 160lb. pressure, and provided with chain grate stokers, supplying steam to three engines connected to 250 volt dynamos. The normal load is about 500 kw., and the distribution is effected on the three-wire system. The building, which contains 1,172 rooms, is heated throughout by the exhaust steam, regulated by a thermostatic control to maintain an even temperature, and the ventilation is so arranged that on the average the air in the various apartments is changed every six minutes. In hot weather cool air is distributed by means of a 40-ton refrigerating equipment, while a similar plant, but of 50 tons capacity, is employed for general purposes. A pneumatic tube system with 42 stations is installed throughout the building for the transmission of letters, etc., and the speed of the motors which drive the blowers is automatically controlled so that the despatch of a carrier puts the motors into operation, while its arrival at its destination shuts off the power. A vacuum cleaning plant consists of three steam aspirator units, each of sufficient capacity to operate six power sweepers simultaneously, and here also the power control is automatic. When one of the units is operated up to its full capacity the second, and if required the third, are cut in to supply the necessary vacuum. The total cost of working this plant was guaranteed by the makers not to exceed 5 cents per sweeper per hour. Six hydraulic lifts are used for passengers, and three for goods, the hydraulic power being generated by special pumping engines; several small lifts, electrically driven, are used for conveying the food from the kitchens to the dining rooms.

LEGAL.

South Shields Town Hall Contract.

The case of Neill and Sons against the South Shields Corporation and Mr. E. E. Fetch, A.R.I.B.A., the architect, which is a dispute concerning a contract to build the Town Hall, was again before Mr. Justice Joyce in the Chancery division on a motion by the plaintiff to have the action referred to an official referee for trial on the ground that it involved prolonged examination of documents. Mr. Hudson, for the plaintiffs, said that the Corporation had wrongfully condemned the materials, knowing that they were wrong in doing so. He thought the official referee should see what had been substituted. Mr. Hughes, K.C., for the Corporation, opposed the application on the ground that there were important points of law which must be decided by a judge. Mr. Norman Craig, K.C., for the architect, also strongly opposed on the ground that very serious charges were made against his client, which must be heard in open court. His lordship said he could not possibly make the order asked for until the action was ready for trial, and adjourned the motion until then. He advised counsel to come to some arrangement as to what points should be tried in court, and what should be referred.



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: VIEW ACROSS BOOKING HALL. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

(See page 174.)

CONCRETE AND STEEL SECTION

(MONTHLY.)

Lectures on Reinforced Concrete. We learn that a very complete course of lectures on Reinforced Concrete Theory, Design and Practice has been arranged for the eight months' session commencing at the end of September, at the London County Council School of Building, Ferndale Road, Brixton, S.W. The lecturer appointed is Mr. H. Kempton Dyson, the Secretary of the Concrete Institute. The course of lectures will be arranged in two sections, namely, practice and theory, the students of the latter taking the former as well; but students not wishing to design work themselves, only desiring to learn about the practical execution of reinforced concrete work, such as builders, quantity surveyors, estimators, clerks of works, foremen, and others, will only need to attend the practical lectures and the laboratory and workshop practice. The fees for the course will be most moderate, being just the ordinary school fees which include every subject taught at the school; these amount to 10s. the session for those earning over 30s. per week, or 4s. 6d. for those earning less than 30s. per week.

Retaining Walls. There is no dearth of theories for the calculation of the stability of retaining walls. Many engineers and mathematicians have applied their minds to the subject, and yet we still seem to be without a satisfactory solution, and probably we shall remain ignorant until a good many experiments have been made. It is really strange that so little has been done to ascertain the actual pressures and direction of line of thrust by actual experiment on a practical scale; indeed, little has been done on a laboratory scale. Yet retaining walls are not modern structures by any means, and one would have thought that engineers long ago would have made certain of the problem.

Some attention has recently been given to the subject by American engineers, and novel theories are being put forward to account for some of the divergencies in practice from older theories. The former theory was that the earth tended to slip down on some inclined line at the back of a retaining wall and push over the wall by sliding thereon. This resulted generally in regarding the earth as equivalent to a liquid, with the greatest pressure at the bottom. But in deep trench work it has been a matter of practical experience that the greatest pressures have been on the struts at the top. Now the American theorists suggest that this is due to an arching of the material of the backing, which applies a thrust near the top that causes that at the bottom.

But such a theory can only be true if the material is allowed to escape, if ever so slightly, at the bottom, which it would do in trench work, so as to allow the backing to settle and wedge itself into arch formation. The truth in a retaining wall may lie with both theories. If the material cannot escape at the foot of the wall (sometimes large weep holes or imperfect filling might allow of its escape), then the wedge theory holds good. If it does escape, then the other newer theory seems a good one. The problem, therefore, may possibly be solved by designing a wall to resist either tendency. Of course, cohesion generally gives a considerable factor of safety, but we do not generally rely on the questionable quality of cohesion in designing a retaining wall, though that will often account for practice giving results divergent theoretical calculations; still it does not upset the wedge theory, which, fully developed, allows for cohesion. The latest theories, however, explain some peculiar failures that have occurred; and if there is any danger of material escaping at the foot of a retaining wall, as where running sand is met with, it would be as well to calculate the walls for stability by either theory.

Loans for Reinforced Concrete Work. It is interesting and important to record that Mr. P. C. Cowan, D.Sc.Ed., M.Inst.C.E., the Chief Engineer to the Local Government Board for Ireland, stated at the Congress of the Royal Institute of Public Health in the course of a discussion on a paper recently read by Mr. Arthur C. Auden, M.Inst. C.E., on "Reinforced Concrete," that the Local Government Board for Ireland had definitely decided that the time for repayment for loans upon work in reinforced concrete in Ireland should be the same as for other building materials. Our readers will recollect that an agitation has been proceeding for some time to get a similar common-sense view taken by the Local Government Board in England, but unfortunately without success; though once again Irish officials lead the way, just as they have done in agriculture, and remove an altogether undeserved ban on reinforced concrete. The Local Government Board in England can have no reason for still holding out against a system of construction the durability and resistance of which has been thoroughly well established. It is indeed of the nature of a public scandal that officials should be able to hold out against a consensus of conservative professional opinion in favour of any system of construction and prevent the public obtaining the benefit of economy through local authorities being granted freedom to use the same. Considering that most of the other State Departments use reinforced concrete extensively, the attitude of the Local Government Board is ridiculous as well as aggravating. If those responsible for the attitude have any legitimate reasons therefor they can surely not object to giving them the light of day and letting them be subjected to criticism; but if their secrecy is dictated by ignorance and pigheaded conservatism then their attitude is perhaps understandable, if reprehensible.

A Concrete Institute Visit. The members of the Concrete Institute paid a visit on July 23 to the London works of the British Improved Construction Co., Ltd., at Stevenage Road, Fulham, where they were received by Mr. Alec. Matheson, the Managing Director of the Company, Mr. P. B. Jagger, the inventor of the process, and Mr. B. Livingstone, engineer to the Company. The Jagger process of manufacturing concrete, which these works are designed to exploit, is, in short, one which turns out work rapidly and embodies various features tending towards that end. First, attention may be drected to a special form of shaking table which causes the concrete to be violently agitated in the moulds, the motion of the particles being confined to a vertical direction however, so wedging the particles of aggregate together and removing air bubbles and rejecting the lighter and inefficient parts of the cement, and securing maximum density, which means great strength and durability. The face of the finished work is free from air bubbles, and the aggregate is right on the surface, which is also very free from holes. The moulding is effected in a few minutes; they are then removed to hot air chambers so as to become dried out and the casts are removed from the moulds in 24 hours. The moulds are, by a few ingenious contrivances, quickly opened out and the work left exposed to continue hardening in the open air, and the work undergoes as little handling as possible. The quick release of the moulds is, of course, economical.

Credit deserves to be awarded for the rapidity with which the works have been erected and put in working order. In 12 months the site of the works, which adjoins the Fulham Football Club grounds, has been converted from a swamp, buildings erected for offices, engine sheds, works, and steam cranes, tramways, river wharf, etc., installed.

The Concrete Institute members were first shown the moulding of plain and reinforced concrete pipes for the Corporation of Southend's main sewerage scheme. The materials, consisting of four parts crushed Guernsey granite to one part Portland cement, were mechanically mixed in Ransome mixers. The time taken to fill the moulds on the Jagger patent shaking table was 4½ minutes for a 3ft. length of a 3ft. diameter pipe 2½ins. in thickness. By means of two vibrating tables, 25 pipes per hour can be manufactured. A length of pipe two months old was tested before the members and broke with a load of 37 cwt. distrbuted on a line along the crown. The members were also shown the process of moulding and manufacturing reinforced concrete sleepers for the London and North-Western and Great Northern Railways. The reinforcements were prepared in great part by machinery, and the moulds were filled on the shaking tables. The method of spiking a rail chair to a sleeper was shown, and the great resistance of the sleepers to blows from a heavy sledge hammer was shown. The cost of the reinforced concrete sleeper is about 6s. The manufacture of partition slabs is also undertaken at these works, the rate being 100 yards super per hour. The moulds are formed with a batch of divisional iron plates, so that a block of partition slabs is moulded at once on the vibrating tables. Then they are removed to the hot air chamber, and can be emptied in 24 hours.

The members of the Concrete Institute were entertained to tea afterwards, and a vote of thanks was accorded the Company on the proposition of Mr. William G. Kirkaldy, Assoc.M.Inst.C.E. (member of Council), seconded by Mr. J. Wager, A.R.I.B.A., architect to H.M. Office of Works. Mr. Alec. Matheson replied.

THE R.M.S.P. CO.'S OFFICES, KINGSTON, JAMAICA.

This block of offices provides accommodation for two Cable Companies and the Royal Steam Packet Company's Jamaica staff, having been built to replace buildings destroyed by the earthquake. It has been placed well back from original building line, having grass plots in front with king palms planted in same. The building is constructed upon a ferro-concrete raft with flanged beams, and inverted reinforcement, designed to withstand upward shock. The ground floor is 6ft. 6in. above the road level, which gives greater stability to withstand earthquake shock, as the building was required to be fairly high in order to afford a land mark from the Harbour; this also gives a current of air under the floor, which is very essential in the Tropics. The whole of the material has been shipped from home with the exception of the electric light installation, which has been carried out by a Canadian firm. Great credit is due to Mr. Fuller Clark, the resident architect, who has also superintended the reconstruction of wharf, pier, etc., and to Messrs. the Empire Stone Co., of Thanet House, Strand, W.C., who have carried out the ferro-concrete work and fixed material sent out from England by the various sub-contractors.

The interior woodwork to the booking hall was carried out in West Indian mahogany, the ground floor walls being lined; the spandrels and soffits of the eight arches panelled and supported by panelled pilasters. Over the centre of the arches are carved panels bearing the monogram of the Company and various dates of interest in its history. The wall linings are surmounted by a richly carved foliated cornice moulding. The counters, also in mahogany, have brass mountings, and there are panelled and glazed screens to two offices. The carved entrance doors and frame are of teak with copper glazing, and there are two teak doors in carved frames in vestibule also with copper glazing. The whole of the woodwork, which was executed by H. C. Cleaver, Ltd., of Willesden, N.W., was coated with a preparation to resist the attacks of white ants, and finished with linseed oil.

The flooring of the hall is paved with Sicilian and Swedish green marble squares, and the walls of the vestibule, etc., are lined with Sicilian marble, the skirtings being of Swedish green. The treads of the steps are of Sicilian marble. The marble was supplied by the Art Pavement and Decorations, Ltd., of London.

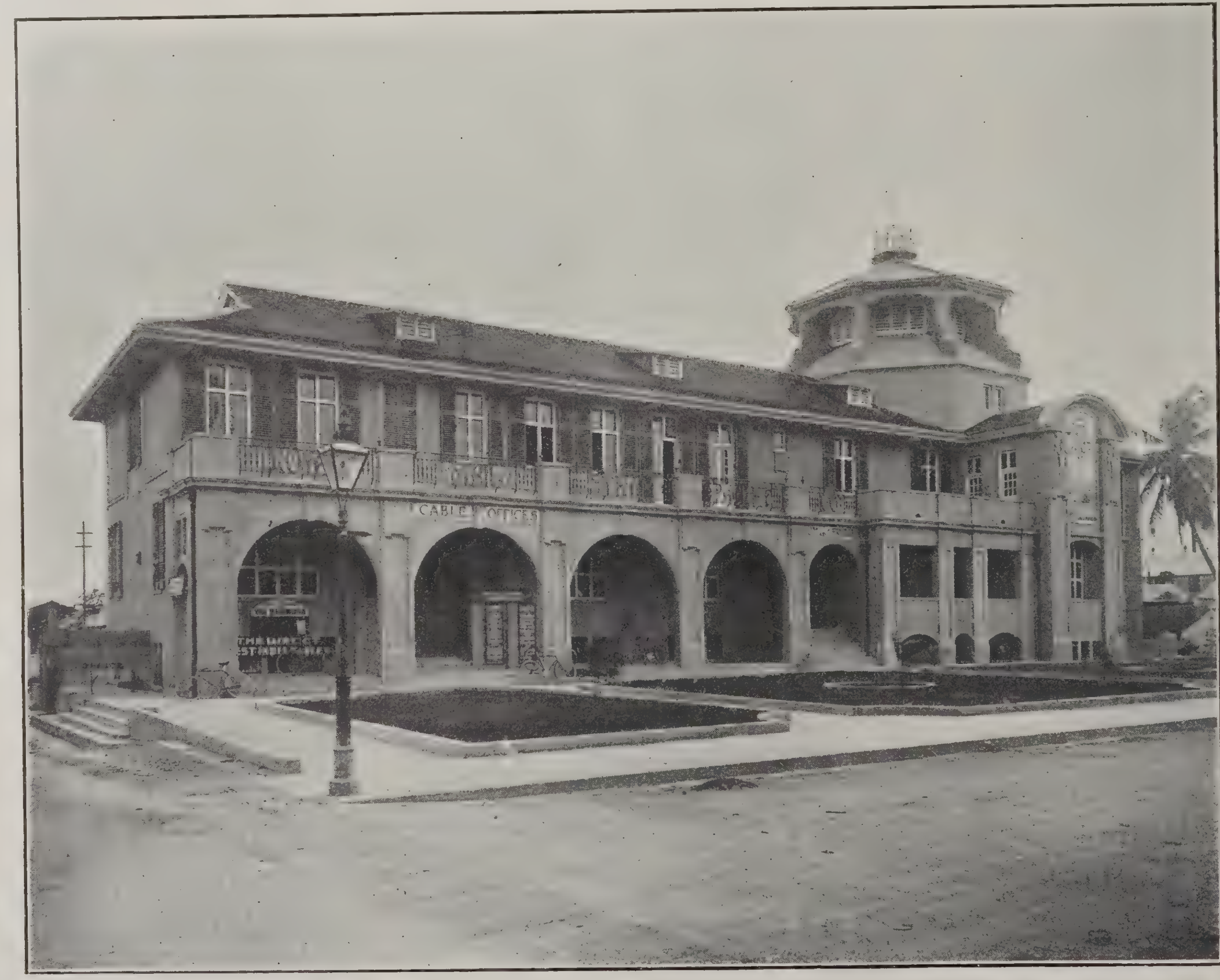
Among the other works were four steel framed iron store sheds, each to hold 1,500 shipping tons. The materials for these were sent out, ready, from the works of D and J. Main, Ltd., London, and fitted together without any trouble by a local contractor, S. J. Streadwick.

The electric fittings were designed and executed in real bronze by the General Electric Company, 67, Queen Victoria Street, E.C. The electrolier illustrated on page 170 is suspended from the dome. The fitting consists of a spherical body, having a diameter of 30in. round, which are eight cast arms, from which depend Osram lamps under translucent shades, bringing the total spread to about four feet. The crown is used emblematically in several of the fittings, and in the case of the electrolier is situated at the apex of the sphere, under which is glass dish containing a light.

Other materials were supplied by the following firms:—Faience work, Doulton and Co., Ltd., London; copper roofing, by F. Braby and Co., London; door furniture, etc., by James Gibbons, Wolverhampton.

The roof is covered with ordinary shaped 10½ by 6½ English roofing tiles, green glazed on the exposed surface by chemical process, the colour as we are informed not being apparent until after the tiles have been through the kiln. These tiles were supplied by Roberts, Adlard and Co., of Bermondsey Wall. The effect in such a climate as Kingston is very picturesque, and they would doubtless be used more frequently in this country were they less costly. The same firm quite recently sent out tilers to cover the roof of the Kingston branch of the Colonial Bank, Bishopsgate Street Within, with similarly coloured tiles, though of different shape; and as a consequence of this work were employed to cover the roof of the new Roman Catholic Cathedral in Kingston with similar tiles. The red 6in. by 6in. floor tiles laid on the office floors are of English manufacture, and were also supplied by Roberts Adlard and Co.

That reinforced concrete can lend itsel to architectural effect will be seen from the illustrations. It will be noticed from



The whole of the building is constructed in reinforced concrete to withstand earthquake shocks. The former offices were destroyed in the recent earthquake.

THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: GENERAL VIEW OF THE BUILDING FROM PORT ROYAL STREET. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

the drawings that in the foundations, floors, and roof, continuous beams are formed in both directions to thoroughly tie the building together. By this method of construction in the foundations the entire building practically stands on a raft formed by series of continuous beams. The whole of the roof trusses and purlins were formed in reinforced concrete and left ready to receive the rafters and tiling. A feature of the offices is a tower which is also entirely constructed in reinforced concrete. The main booking hall is surrounded by a double circle of columns supporting the inner dome and the tower. All mouldings, domed ceilings and arches were formed in-situ, and after removal of the centering the work was cleaned down and the whole given a finish to match artificial stone, which, with the coloured roof tiles, gives an effective appearance. The interior was given a fine plaster finish. The work was carried out by the Empire Stone Company's own workmen sent out from England.

The building, including the demolition of wrecked premises, took fifteen months to complete from the date of signing the contract in England.

CONCRETE BOOKS.

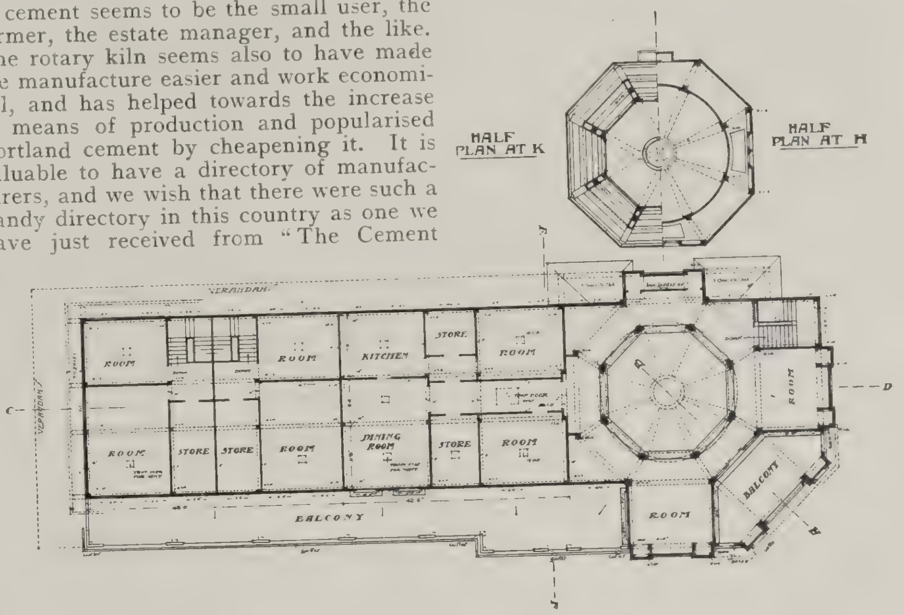
The Composition of Concrete.

A book written by an American technical author is usually pretty thorough, and this book, by Mr. H. F. Porter, and others associated with our American contemporary "Concrete Engineering" is certainly in the category deserving of praise. It is a most useful attempt to furnish some really scientific information regarding the chemistry and physics of cement and concrete making with an explanation of the principles of the basic process of the concrete industry. The data given in this book for concrete making, such as proportions, shrinkage, etc., are based on practice and are thoroughly reliable, so that it is just what the specialist and the general practitioner alike require. Cement and its manufacture are dealt with, as also the testing of the same, with laboratory and works procedure, then the aggregates receive detailed attention, next the proportioning, and finally such side issues as the effect of mineral oil on concrete.

"Concrete: Its Composition and Use," by H. F. Porter and other authorities. Published by "Concrete Engineering," Cleveland. Price $2.

Trade Book.

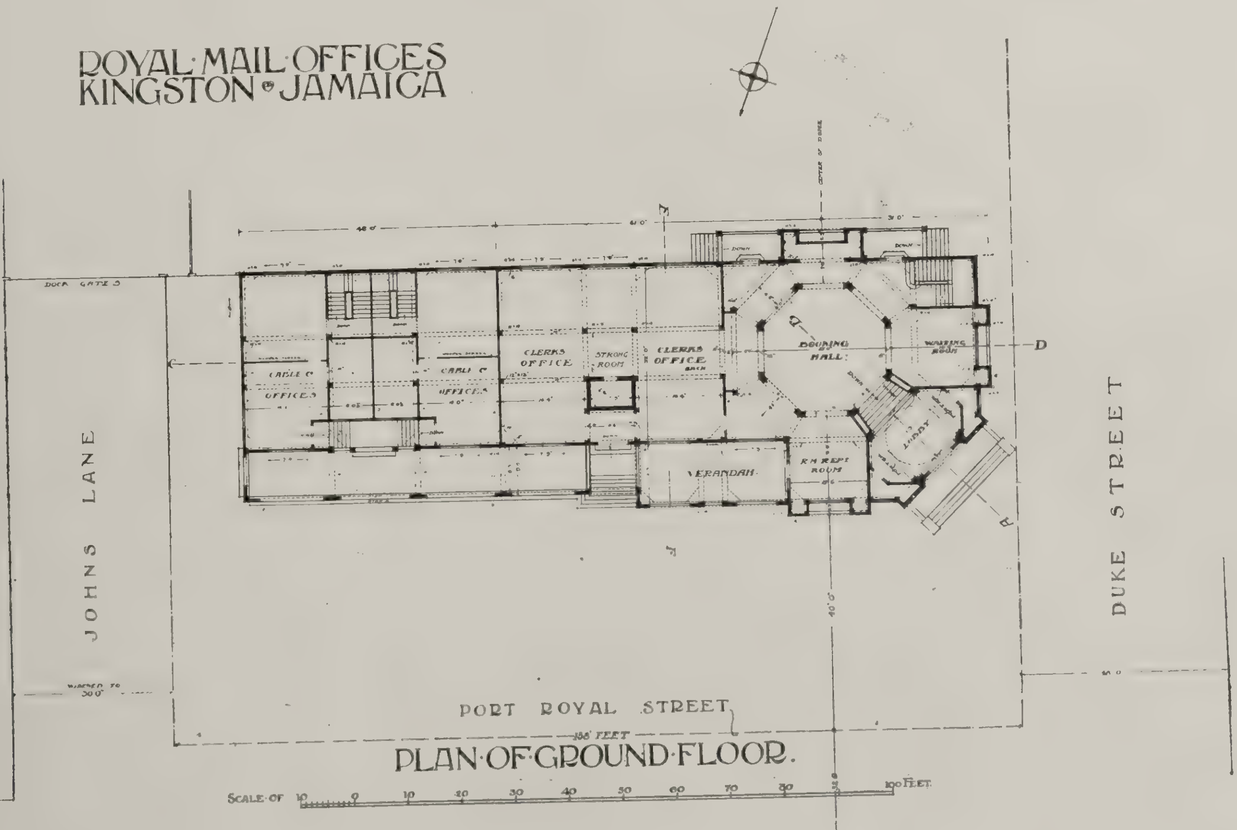
The cement industry is a large one, both the capital absorbed in the building of cement works and the production of cement in England, France, Germany, and America being very considerable. The production of cement in America has indeed been growing by leaps and bounds these last few years. There are various reasons for this, though the chief consumer of cement seems to be the small user, the farmer, the estate manager, and the like. The rotary kiln seems also to have made the manufacture easier and work economical, and has helped towards the increase in means of production and popularised Portland cement by cheapening it. It is valuable to have a directory of manufacturers, and we wish that there were such a handy directory in this country as one we have just received from "The Cement Era" of 842, Monadnock Block, Chicago, entitled "Directory of Portland Cement Manufacturers, together with Manufacturers of Gypsum and Lime." This 1910 edition is priced at one dollar, and is neatly bound in morocco. This directory gives the names of the officers of each company, the capital, the capacity for production, the number of kilns and the nature of the process of manufacture, viz., "wet," "or dry." There is also included an alphabetical list of the officers, superintendents, and chemists of cement companies. Such information is most valuable to the consumer. The directory is published annually.



PLAN·OF·FIRST·FLOOR

SCALE OF 10 0 10 20 30 40 50 60 70 80 90 100 FEET

ROYAL·MAIL·OFFICES
KINGSTON·JAMAICA



PLAN·OF·GROUND·FLOOR.

SCALE OF 10 0 10 20 30 40 50 60 70 80 90 100 FEET

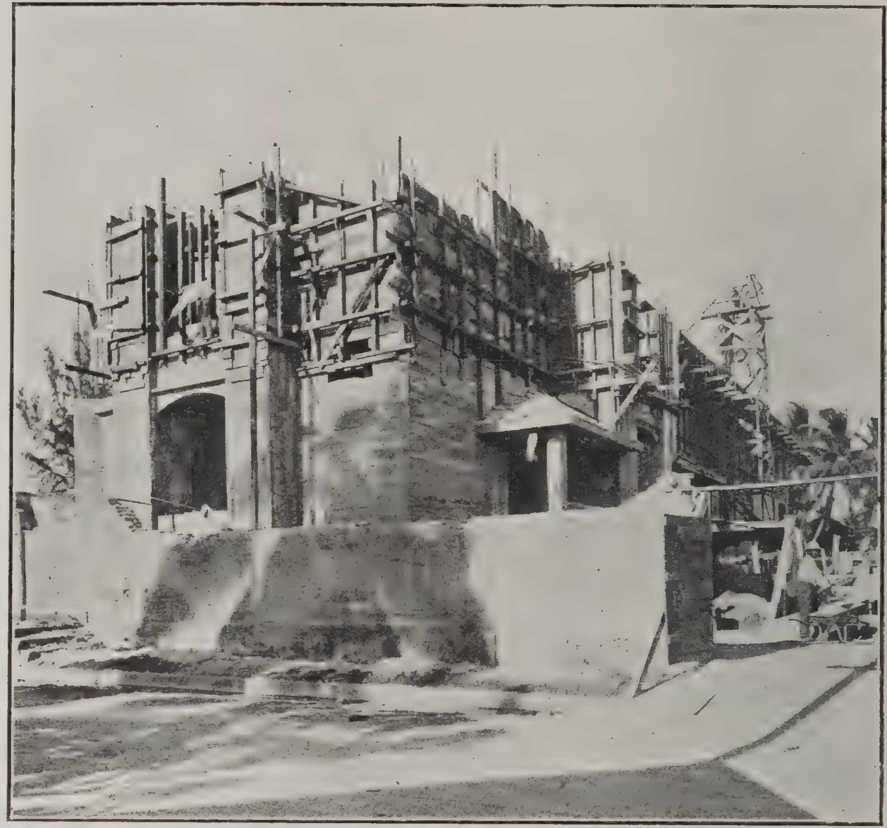
CONCRETE PACKING.

By THOMAS POTTER.

Packing—the only name by which the writer knows it—is any kind of rough unshapable quarry waste, old stone and bricks from buildings in process of demolition, or any clean, imperishable, and hard material for which cement has an affinity, which can be used for embedding in concrete foundations, concrete walls, and monolithic concrete of a massive character, such as retaining walls, bridge piers, abutments, etc., the primary object being to economise the concrete, and by so doing to reduce the cost without diminishing the strength.

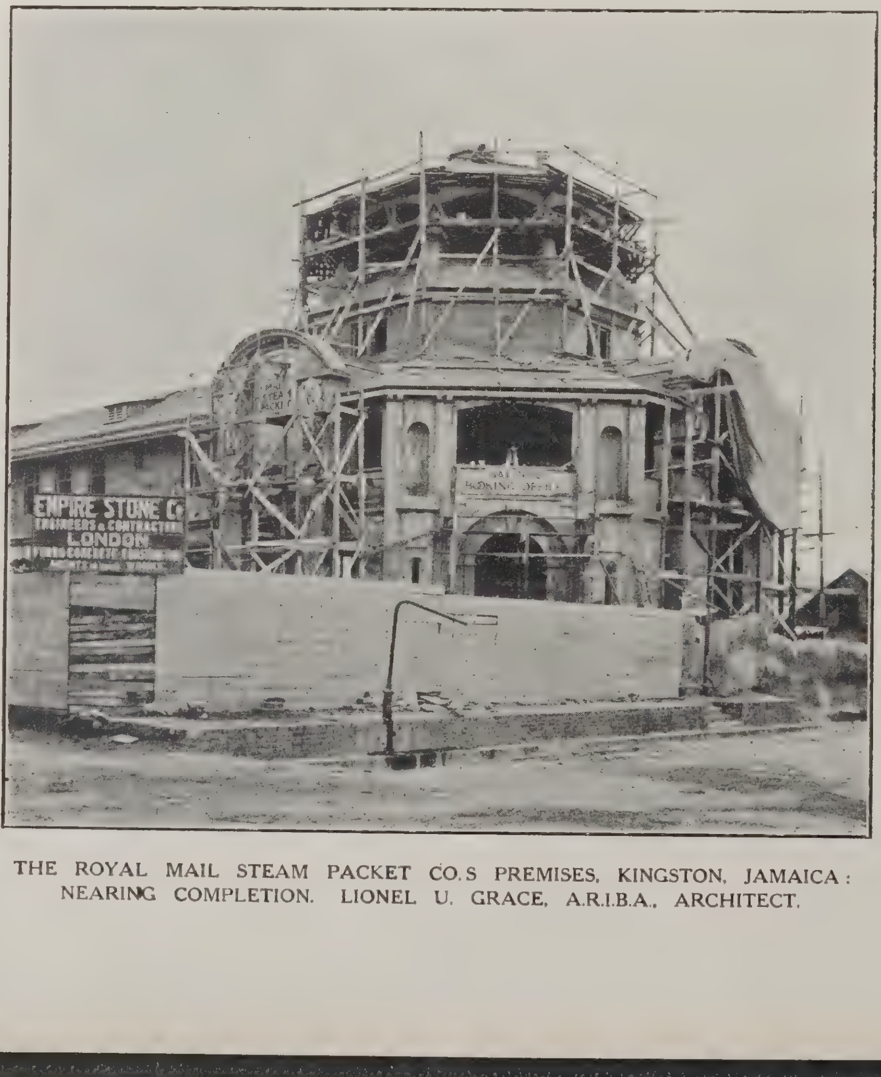
Packing has not been used to any extent in this country, the principal objection being that it is assumed to weaken the strength of the concrete. This assumption, however, is incorrect, provided the material is judiciously employed.

A specification may state that a fixed amount *pro rata* to the volume of concrete—perhaps 25 or 33 per cent—may be used, but it is a difficult matter to determine how this is to be arrived at when no two pieces may be alike in shape or size. Measurement is out of the question; the only way, apparently, would be to deliver the fixed amount on the site for the work it is intended for before the latter is commenced, but this would not ensure equable distribution. The human equation—a trustworthy man, if he can be found, to embed the right amount approximately in the work as it progresses, and in the way in which he has received preliminary instructions, or has had previous experience—should answer best.



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES. KINGSTON, JAMAICA: DURING CONSTRUCTION. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

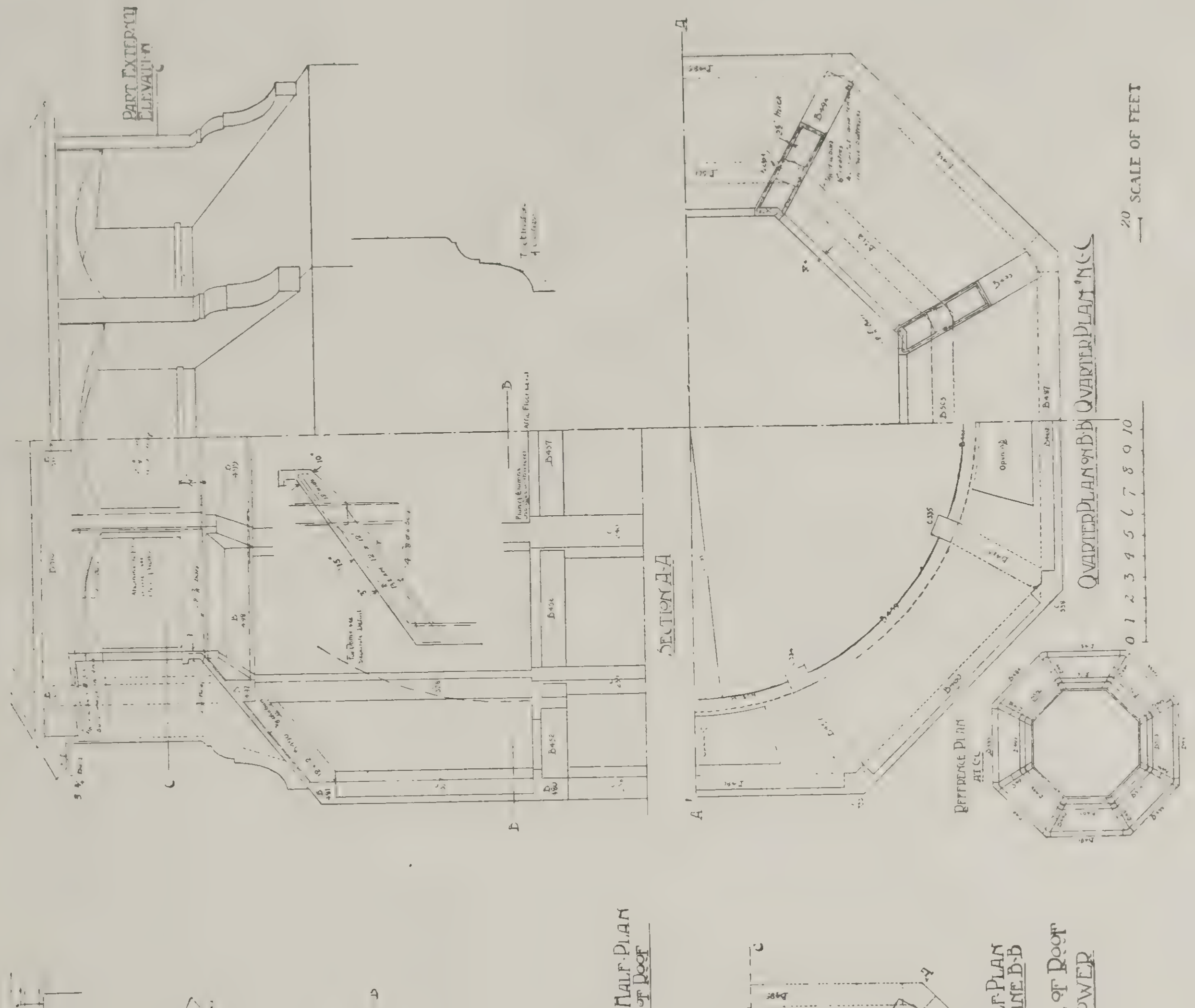
The best packing material undoubtedly is quarry waste of the size—if procurable—adapted to the purpose for which it is required. The more bulky the concrete, the larger it may be; and being usually irregular in shape, it obtains a firm grip of the concrete. It is also clean, which is an important consideration. If old stones and bricks are used, it is necessary to cleanse them thoroughly from mortar or other substances, not simply knocking off the looser portions with a trowel or hammer, but clearing them as thoroughly as if they were going to be re-used in building new work.



THE ROYAL MAIL STEAM PACKET CO.S PREMISES, KINGSTON, JAMAICA: NEARING COMPLETION. LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

If not disposed of in this way, the brick and stone débris from buildings in course of demolition may have to be carted away; whereas they could more economically be partly crushed for concrete and partly used for packing for new buildings to be erected on the same site. In my own experience I have been in this way able to dispose of the entire walls and chimneys of buildings being demolished, and in so doing have effected a considerable saving. The size of packing may be roughly determined by allowing no portion to be nearer than 2 or 2½in. of the faces of walls and foundations. The depth or thickness and shape are immaterial; for if they are irregular in this respect, the better they tie or bond to the concrete. The largest surface area of packings, if they vary in shape, should form the bottom or bed side, and be well rubbed into the concrete as the latter is being deposited, similarly to the way in which bricks are rubbed into the mortar beds of brick walling. Violently dumping them into the concrete, or dropping from a height, is not advisable, as this would disturb their beds. Packings should either be well saturated with or soaked in water, more especially when they are of an absorbent nature.

For 9in. walls, or other forms of construction of a similar thickness, packings can be used but sparingly; but the thicker the work or the broader the base, the more advantageous it becomes in every way. The distance between the packings is to some extent a question of the amount available, but should never be less than from 3 to 6in. in order that the concrete may readily find its way between and around them without leaving voids; nor does any



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: DETAILS.
LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.

increase of the spacings increase the strength of walls or foundations to any appreciable extent, any more than extra thick cement joints increase the strength of brick walls.

In packed concrete walls that had to be removed, the packing was found to be inseparable from the concrete, and the labour of taking down a packed wall was as much as with walls where no packing had been used

No hard-and-fast rule can be laid down as to the amount of packing that should be allowed, as the wider the base or the thicker the foundation or wall, the greater the proportion admissible Perhaps 20 and 40 per cent. of the amount of concrete would represent the minimum and maximum proportions. The concrete may be looked upon as a rough mortar uniting the irregular and larger solid masses together.

Packed concrete, from a constructional point of view, is not far removed from the common Roman method of forming thick walls by building a skin of masonry or brickwork on both sides, roughly filling up the space between with waste stone and mortar, and grouting the mass with liquid lime and sand. More comparable still is the Continental method of forming foundations with béton, consisting of lime and sand made into a thin mortar and mixing it and the aggregate together, but this is not practicable with Portland cement as a matrix. The béton is deposited in the trenches a foot more or less in thickness, and upon this a layer of stones, then another layer of béton, and so on to completion.

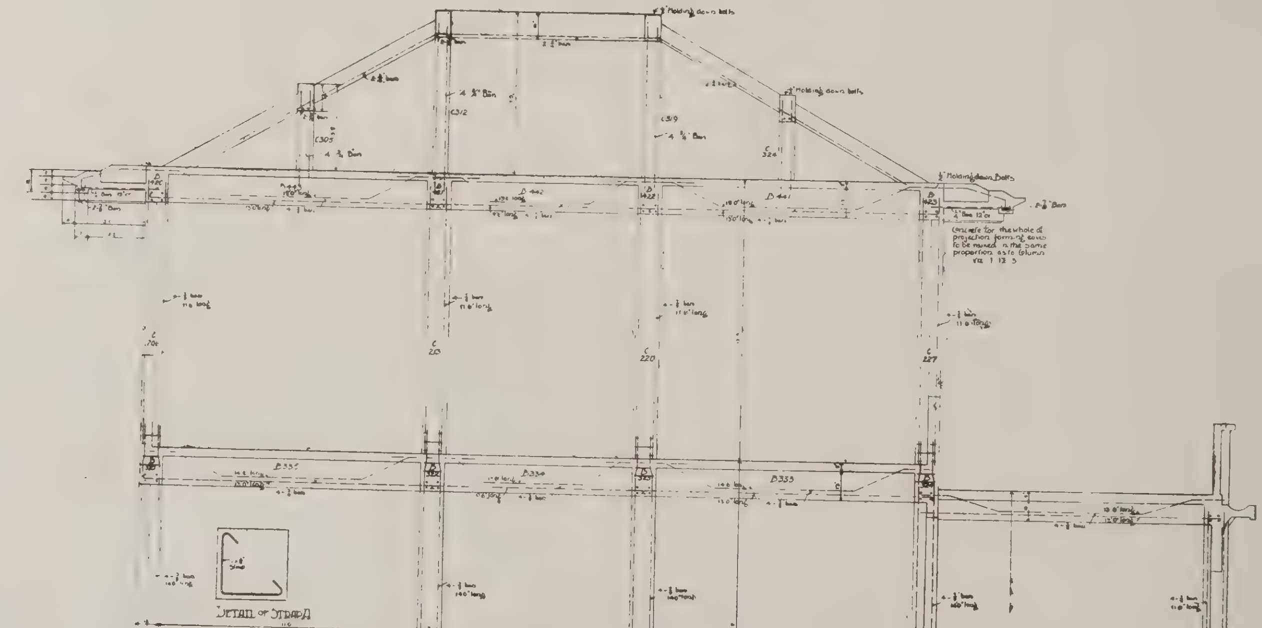
The formula of Mr. Tall, who, in 1865, invented an apparatus for building monolithic walls, was 100 per cent. of packing in ordinary house walls, and upon this he based his estimate for the cost of concrete in a general way. Practically as much as 40 per cent. may be used in foundations and heavy work, and 30 per cent. in walls over 9in. in thickness, with no loss of strength. Even in 9in. walls packing may be used to advantage if of a small description, and this is available at times in screening the aggregate, which may contain a portion too large for use in the aggregate. Dr. John S. Owens says that packing—called in the United States "plums"—may be considered as forming a part of the aggregate, and is quite admissible when proper precautions are observed; and Mr. H. F. Porter, a consulting engineer, of Bridgeport, Connecticut, writes that in the construction of a new concrete bridge across the Rocky River at Cleveland, huge masses of rock as large as could be swung into place with a derrick, were introduced into the piers and abutments at intervals.

It is claimed by some who have used packing in concrete construction, that it forms a bond-tie, and therefore strengthens foundations or walls, or any other form of concrete construction. Theoretically, this should be so, especially if it is of ample size. It is also claimed that packing prevents the slignt cracks which often occur in concrete walls through variations of temperature. I know of a concrete building, one of the walls of which has an unbroken length of 180ft., except for a few windows. It was built in 1869, and considerably packed, and has never developed cracks. Iron hoop to a moderate extent was, however, used laterally for reinforcement.

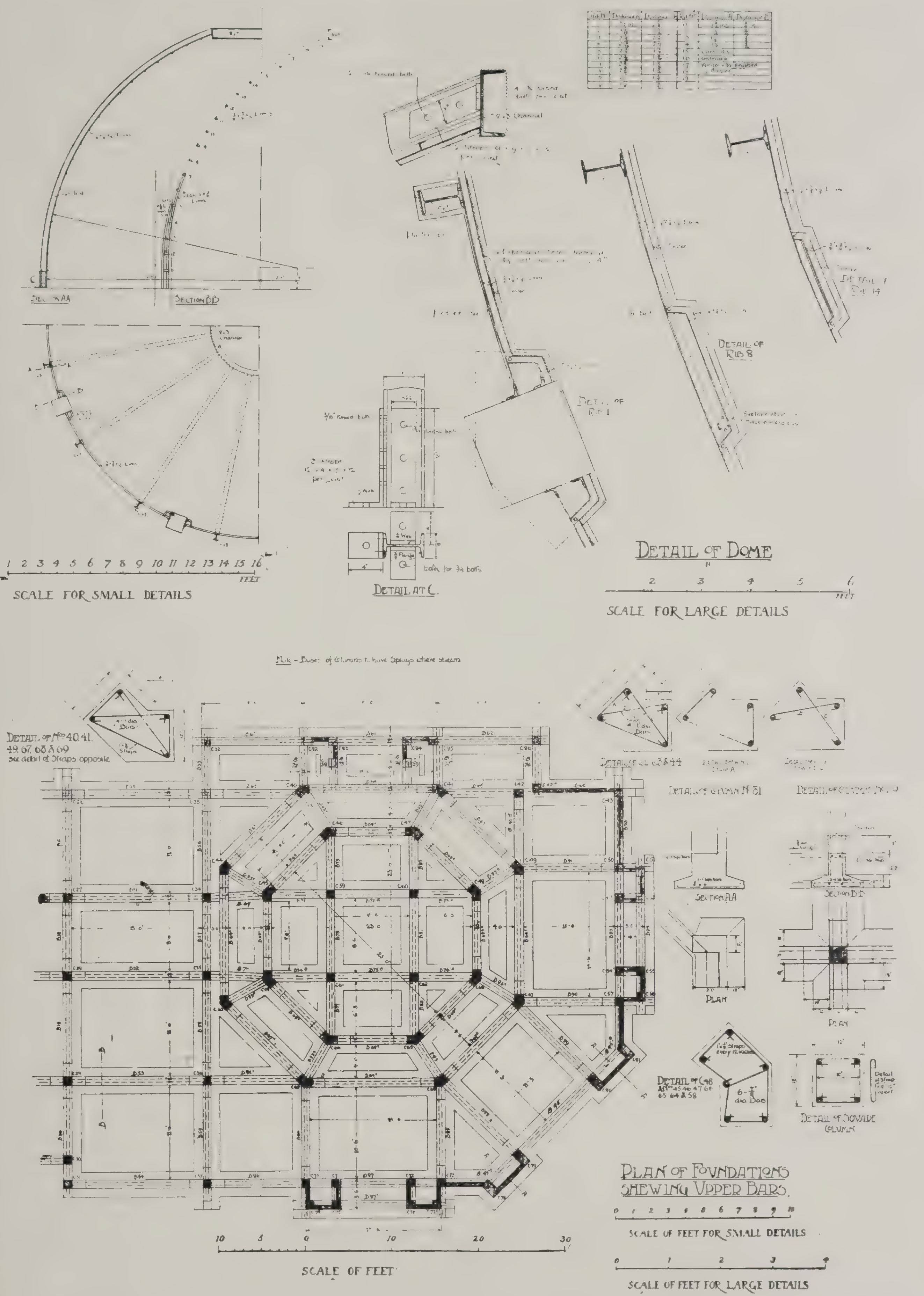
Packing concrete offers a strong inducement where the work is being done by contract to exceed the proportion specified, and for this reason probably is not looked upon very favourably. It means constant surveillance, and possibly some friction between the clerk of works and contractor's foreman. But when the work is not being performed by contract, and no object is gained in evading instructions, packing is a factor in reducing the cost of concrete, with no corresponding disadvantages.

Obviously, it is unsuitable for floors, beams, etc.

To ensure freedom from voids, and to obtain cohesion of the concrete and packing, a sloppy consistency of the former is preferable to a sticky condition. It has been assumed that only as much water should be used in mixing concrete as would enable the materials to adhere to each other; but United States experiments have proved that a sloppy condition causes a quicker movement of and sliding together of the particles, causing homogeneity, which the slow movement of concrete of a sticky nature is unable to obtain.



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: DETAIL
LIONEL U. GRACE, A.R.I.B.A., ARCHITECT.



THE ROYAL MAIL STEAM PACKET CO.'S PREMISES, KINGSTON, JAMAICA: DETAILS.
LIONEL U. GRACE, A.R.I.B.A., ARCHITECT

CONCRETE NOTES.

A Moist Closet for Cement Tests. A moist closet, designed expressly for maintaining a constant temperature and a constant degree of moisture for setting tests of cement, has been in use by the Department of Railways and Canals, Canada, on the Lachine Canal, where especial importance is attached to time of setting because the cement is used under water. With other types used the temperature and moisture are apt to be materially changed in opening the closet to make tests. The new closet, therefore, was provided with an armhole, through which the test is made, the door being used only for placing the pats. The cuff of the coat prevents any air entering, and on the arm being withdrawn the hole is quickly closed. The closet is 3ft. high, 3ft. wide and 18in. deep, with walls of concrete 2in. thick. The bottom of the closet acts as a tank to hold about 2in. of water. The mix was rich and there is no leakage. The temperature inside the closet is usually 65 deg. in summer and winter, varying about 1 deg. Wet cement bags are placed on top during very hot weather, and repeated tests have indicated, it is stated, that the temperature can be evenly regulated. Water is seldom added to the pan forming the bottom of the closet, showing that little or no evaporation takes place inside the closet. The closet is carried on a base about 30in. high and two open shelves are built below it.

Reinforced Concrete Piers. Two reinforced concrete piers were recently built in the harbour of Genoa, Italy, in order to carry a light steel bridge of a grain unloading plant. Each reinforced pier is 35ft. high and carries a masonry pier 19ft. high above water level. The piers are 13ft. 11in. by 17ft. 3in. in plan and have a working chamber at the bottom 5ft. 11in. high, so that they could be sunk by the pneumatic process. The walls vary in thickness with the depth, the maximum being 7in. They transfer the pressure on them to vertical beams which in turn are stayed by horizontal reinforced concrete struts running to the beams in the opposite wall. Beam and strut sizes are also reduced with the diminishing water pressure. The walls of the working chamber are of solid concrete, reinforced in both faces, 23.6in. thick at the top and 7in. at the bottom, where they are shod with a cutting edge of channels and angles. This cutting edge is secured to the concrete by straps placed at intervals, looped over the reinforcing bars in the concrete and riveted to the upturned legs of the channel. The piers were built on shore, floated to place and then sunk.

An Ancient Concrete House. Important discoveries by Professor Ramon Mena in the ancient Texcocab city of Otumba, which is located about 5 miles from the present city of Otumba and about 15 miles from San Juan in Teotihuacan, are noted by "The Cement Age." Two houses were unearthed, the first of which is of stone, with the stone walls, or what is left of them, about 6ft. in height. The other house, probably the residence of some priest of very high rank, was of cement; floors of cement and walls of cement, the latter being frescoed in red and blue—the whole being in a perfect state of preservation. This house contains three rooms and a cellar. The cellar also contains several rooms, all with floors of cement.

Pouring Concrete Columns. In pouring concrete columns there is always a danger of the formation of pockets, due to large stones being caught between the reinforcing members and between the steel and the forms. Even with the greatest care this cannot be entirely avoided, especially when the columns are long and have spiral reinforcement. Such pockets, if large, may seriously affect the strength of the columns, and it would therefore seem desirable to make a thorough examination of them as soon as the forms are stripped, sounding them for holes beneath the surface, and not being satisfied with a mere superficial inspection. Such a plan was followed in the erection of the Minnesota State Fair grandstand. The forms were removed from the columns while the floor above was still supported by the falsework, and the columns carefully examined and sounded. As a rule the voids were enclosed by an apparently sound exterior shell. When pockets were found the concrete was cut out while still green, a form placed around the opening and the space filled to within an inch or so of the sound undisturbed portion above. The new concrete was allowed to set and the small space then carefully packed with cement mortar. By thus allowing the large mass of new concrete to set before effecting the closure it was expected that difficulties due to the shrinkage of the new concrete would be avoided. There is a very distinct advantage in making these inspections and repairs as soon as it is permissible to remove the column forms; the defective concrete is green enough to be removed with comparative ease, and the falsework still in place under the floor above saves the expense which might otherwise be necessary for shoring.

A Canadian Concrete Building. The new Jacobs building, now completed at Montreal, is notable as the largest reinforced concrete building in Canada. Despite difficulties encountered in the early stages of the work, the remarkably short time in which the building was erected demonstrates the rapidity of progress possible in the method of construction adopted. The building, which is seven storeys high, and designed to carry three additional storeys as the need for further accommodation might demand, has a frontage along St. Catherine's Street of 265 feet, and a depth on St. Alexander Street of 136 feet. The main façades, designed in the French Renaissance style, are of glazed terra cotta, with ornamental cast-iron store fronts, cornices and mullions; the entire space between the pilasters being devoted to windows, so as to provide an area in this respect, which will adequately serve to light all parts of the interior. The building is designed to carry a live load of 150lbs. per square foot on the ground floor, 125lbs. per square foot on the upper floors. The columns throughout the building are octagonal in shape, and vary in size from 32 inches in cellar to 20 inches in upper storey. When the additional storeys are placed on the structure the size of the upper columns will be 12 inches. The main girders, which span 17 feet 9 inches, are 12 inches by 24½ inches, and are reinforced with two 1¾-inch by 2¾-inch Kahn bars and one 1-inch cup bar. The intermediate beams which run opposite to and frame into the main girders are 8-inch by 18-inch size, and are reinforced with 1-inch by 3-inch Kahn and one ⅝-inch cup bars. All columns are reinforced with steel rods, hooped with 5-16in. and ⅜in. round steel hooping varying in pitch from 1¼ inch to 2 inch, according to loading; the concrete inside the hooping being figured for 750lbs. per square inch. The architects for the building were Messrs. Mitchell and Creighton, of Montreal, and all the concrete work was done in accordance with the standard specifications for reinforced concrete by the Trussed Concrete Steel Company of Canada, Ltd.

Concrete Aqueduct Linings. The linings of the aqeduct bridges on the Illinois and Mississippi Canal have been in service through two seasons, and, according to Mr. H E. Reeves, U. S. junior engineer, have given satisfaction. The concrete was a 1.4 mixture, using well-graded gravel, or 2.3.5 when fine crushed stone was used for the coarser aggregate. The bottom is 6in. and the sides 9in. thick. The depth of water is 7ft. The linings are practically watertight, the exterior at nearly all points being dry under a full head of water. The only place where seepage shows to any noticeable extent is on some of the sides, at the joint between two days' work. No seepage shows where the sides were carried up continuously.

A Reinforced Concrete Theatre. A theatre in reinforced concrete is being constructed at Norumbega Park, Waltham, Mass., to replace one destroyed by fire. The new theatre is made to fit conditons. Most important of all, it would be thoroughly fire-resisting. One hundred and seventy tons of steel will be used in its construction, spanning the auditorium without a post or column. The main trusses are said to be the most remarkable piece of construction attempted, and while unique are thoroughly practical. The stage and dressing rooms will reveal a Spanish effect in that the roofs will be of pure Spanish tile, while the walls inside and out will be decorative cement. The lattice work, casements, and ornamental window work will be artistically effective to the eye. The same general scheme of construction in the old theatre will be followed in the new, but greatly improved and beautified in every detail.

Wall Construction for Small Buildings. A number of concrete bungalows, each containing five large rooms and bath on the ground floor and two rooms on the first, have been designed and built recently at Carnegie, a suburb of Pittsburg. All of them have modern plumbing and heating systems, and cost complete less than 4,000 dollars each. The builder states that he can put up these bungalows at a cost of only 6 per cent. above that of a wooden-frame dwelling. The roofs and floors are of timber construction. The walls differ from the customary monolithic construction in that ordinary 2 x 4-inch studs are partially embedded in the walls, and serve during construction to support the inside forms. The studs are set up on 16-inch centres, and between them 1½-inch plank, 14 inches wide, are placed vertically with the outer side flush with the face of the stud. They are held in this position by simple spacing strips at top, middle, and bottom. The concrete, of course, fills the 2½-inch depth of pocket back of the plank, and when the forms are removed the studs project, 1½ inch from the wall surface. The lathing is nailed to these studs, and a 1½-inch air space is thus left between studs. The outside forms use conventional sizes of lagging supported by 2 x 6 inch studs opposite alternate studs of the inside forms, to which the outer studs are wired. The outer lagging is 3½ inches from the inside studs, so that with the 2½ inches of concrete between studs the concrete wall is 6 inches thick. This gives an 8½ inch wall when the inside and outside plastering are completed. Reinforcement is provided above all wall openings. A rather wet mixture of one part Portland cement, two parts sand and six of ½ to 1¼ inch slag is used. The outside is not trowelled, so that the cement plaster will have a good bond. This plaster is a 1:1 mixture of sand and cement, with sufficient slaked lime to make it work easily.

The Building Trade. It is to be hoped that Mr. A. G. White's optimism at the recent half-yearly meeting of the National Federation of Building Trade Employers will be fully justified. Most builders' meetings have taken a somewhat gloomy view of the state of trade. There are indications, however, that things are improving, but still very slowly. Many important contracts are coming in; and the "Competitions Open" list is again increasing. Among these, reinforced concrete will no doubt have its share. It is worthy of note that the preservation of the steel in steel-construction buildings is engaging closer attention, and that in our more recent big buildings the casing of the steel with concrete has been the general rule. This is a tacit admission, not only of fire-resisting methods, but also of the preservative qualities of concrete.

CONCRETE BRIDGE FAILURES.

AN ANALYSIS.

In order to learn whether there are any grounds for the disquieting opinion which he has frequently heard expressed by engineers antagonistic to concrete, that concrete is not a suitable material for the construction of bridges, Mr. C. R. Young, of the firm of Barber and Young, bridge and structural engineers, Toronto, has made an investigation of those failures of concrete bridges regarding which reliable data could be obtained. His object was to determine the actual causes of failure; whether the materials themselves were at fault, or the design, or construction. The results of his investigation were summarised in a paper read on March 30 before the convention of the Canadian Cement and Concrete Association, at London, Ont. Except where the information has been published in the technical press, the location of the bridges and the names of the engineers and contractors have been omitted. Some attention has been given to pronounced cracks in spandrel and wing walls, since Mr. Young regards these as impairing the appearance of the bridge, even if it remains in service. The paper is given below substantially as read by Mr. Young.

Case 1.—Reinforced concrete slab or flat-top bridge of 10ft. span, intended to carry a fill of 13ft.; slab, 12in. thick reinforced by longitudinal rods ¾in. in diameter, spaced 12in. centre to centre, and transverse rods of the same size, 2ft. centre to centre; spandrel walls, 2ft. thick at the bottom, reinforced by vertical ¾in. round rods, 2ft. centre to centre.

After the concreting had been completed nearly two months and some 10ft. of the earth fill had been placed, the centres were struck, with the result that almost immediately the slab collapsed under the weight of the fill alone, leaving the spandrel walls and wing walls intact.

An examination showed that the concrete was apparently of correct proportions, had set satisfactorily, and had evidently been placed with care. Computations based upon measurements of the slab taken after the failure showed a fibre stress of 41,500lb. per square inch in the steel and 1,100lb. per square inch in the concrete under a 10ft. fill. Apparently, no special care had been taken to anchor the longitudinal reinforcing rods properly, so that under this stress, considerably in excess of their elastic limit, they had pulled through the concrete, as was evidenced by the polished state of the concrete in contact with these rods. The failure can therefore be wholly attributed to defective design.

Case 2.—This structure, which is typical of a number of reinforced concrete girder bridges completed in a county in the State of Indiana, some 3½ years ago, was of 15ft. span in the clear and 16ft. clear roadway. Two longitudinal girders, 15ft. 10in. centre to centre, carrying a 7in. slab comprised the superstructure. Upon this slab was placed a 12in. earth fill and in addition it was supposed to carry a uniformly distributed load of 200lb. per square foot, or a 20-ton road roller. The slab was reinforced by transverse rods of a sectional area of 0.78 sq. in. each, 1in. from the bottom and 10in. centre to centre and by longitudinal rods ½in. in diameter and about 3ft. centres.

Before the striking of the centres, Mr. Daniel B. Luten, president of the National Bridge Company, in a communication to "Engineering News," pointed out the weakness of the design and questioned its safety. He showed that under dead load alone the compression in the concrete of the slab would be about 1,000lb. per square inch, and the tension in the steel would be nearly 20,000lb. per square inch, while for the specified live load consisting of a 20-ton roller these figures became 3,000 and 55,000lb. per square inch respectively.

Before Mr. Luten's letter had appeared the bridge collapsed, on the day following the removal of centres. The bridge gave way when the rear wheels were about in the centre of the span, and indications pointed to the slab as the initial source of failure. Careful examination of the wreck disclosed no broken steel, and failure was apparently caused by excessive compression in the concrete of the slab. Under the loading of the traction engine, which weighed about 16,500lb. and of which 9,000lb. were concentrated in the rear axle, this compression could not have been less than 1,800lb. per square inch, with the tension in the steel about 32,500lb. per square inch. The corresponding stresses in the girders were about 1,000lb. per square inch for the concrete and 20,000lb. per square inch for the steel. The compression in the concrete of the slab was therefore nearly equal to the ultimate strength of a good concrete one month old, and in excess of the strength of the material used, which appears to have been of poor quality, on account of the presence of dirt in the sand. Very bad design and lack of care in preparation of the concrete were, therefore, clearly responsible for the collapse.

Case 3.—Reference has been made to a number of girder bridges similar in design to that of Case 2, constructed during the same year as the latter, in the State of Indiana. One of these of 24ft. span developed a bad crack in one of the beams shortly after the striking of the centres, but managed to hang together and carry the traffic for about a year and a half. There was no load on the bridge when it finally fell, and no evidence could be discovered of any weakening or undermining action from floods or other causes. It therefore appears that its downfall likewise was due to the errors of an inexperienced or careless designer.

Case 4.—Plain concrete railroad culvert of 20ft. span and 10ft. rise, carrying a fill of about 10ft. over the crown; crown thickness about 18in.; foundations were carried 4 or 5ft. below the natural level of the ground. The situation of the bridge was on marshy soil and the foundation-bed was of soft clay with considerable organic matter present, but no piles were used.

As the filling was placed on the arch, cracks began to develop, in the case of the west wall, passing vertically up the wing walls near their junction with the spandrels, then crossing this corner and trending to the crown of the arch, reaching it at about one-quarter of the length of the barrel in from the face of the spandrel walls. In the east wall a large vertical crack passed from the footing up the soffit to near the crown, where it joined a large horizontal crack running along nearly the whole length of the arch barrel. In addition to these very prominent cracks many other tributary cracks of lesser extent developed.

Careful examination of the cracks in conjunction with the originally level mould board lines conclusively showed that the abutments had settled from 4in. to 6in. under the heavy load of the fill, and that the insecure foundations were wholly responsible for the failure.

Case 5.—A plain concrete railroad culvert 10ft. in span, carrying an embankment 52ft. in depth, was constructed in the winter. The foundation-bed was of soft clay and no piles were used. In the following spring when the frost came out, a portion of the barrel near the middle collapsed under the weight of the fill, and a part of one end, with one of the wing walls, gave away under the sliding of the embankment.

The explanation offered for this failure, and one that appears reasonable, was that the spring thaw had destroyed the even bearing of the culvert on the foundation-bed, and that the barrel had thus been resolved into a beam at several points, the wrecked end portion acting as a cantilever. Had reinforcement been used, which is particularly desirable in winter work of this class, the structure would no doubt have safely withstood the adjustment.

Case 6.—A reinforced-concrete arch highway bridge of about 30ft. span and of low rise was constructed with abutments resting directly upon a quicksand-bed and in a situation involving the excavation of a new channel for the stream. Shortly after the striking of the centres the arch ring collapsed, although subsequent computation showed the design to be sufficient.

While the early removal of the forms may have been to a small extent responsible for the failure, the excavation of the new channel appears to have precipitated the fall immediately. Under the considerable weight of the arch, and favoured by the removal of material between the abutments, lateral flowing of the quicksand with attendant settlement and tilting of the abutments naturally followed. Had the foundation-bed been piled, this development could not have taken place. Faulty design of foundations was, therefore, primarily responsible for the failure; but, unless some of the piles had been driven on a batter, bad cracking of the spandrels would have occurred under the conditions named.

Case 7.—Some seven years ago a Monier arch of considerable size and built at an extreme skew collapsed at Bendigo, Australia, with loss of life. The failure was sudden and unattended by any premonitory signs of distress, unlike the recorded character of failure of Monier arches, which had been tested to destruction in Europe and elsewhere. In view of the fact that the abutments were especially massive and securely founded on solid rock and that the materials were excellent, the contractor attributed the disaster to incorrectness in the received theory of skew arches, and retained the services of the late Prof. W. C. Kernot of the University of Melbourne, to conduct a thorough investigation and report upon the cause of failure.

By means of measurements of the deformation of loaded india-rubber models and by ingenious electrical experiments on a metallic model, corroborated by mathematical calculations, Professor Kernot was able to show that Rankine's theory of the skew arch,

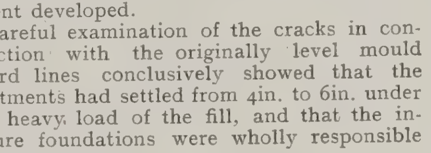


Fig. 1.

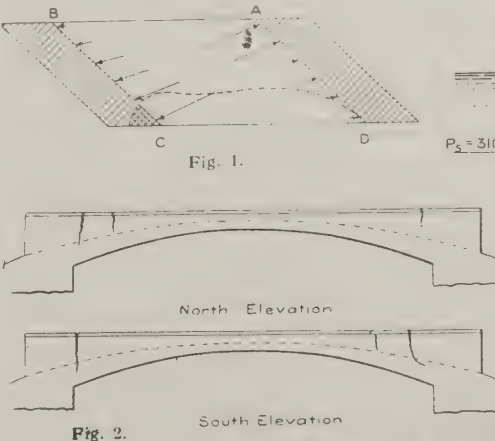
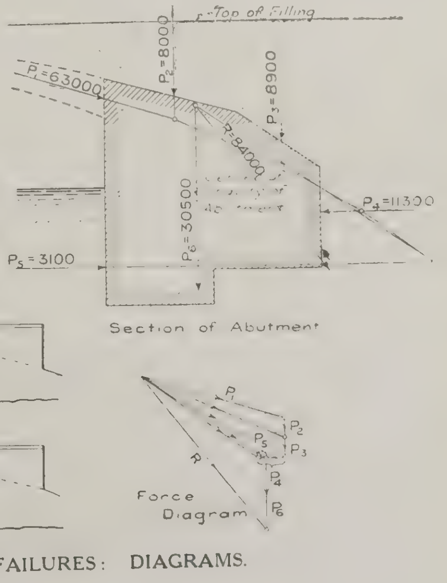


Fig. 2.



CONCRETE BRIDGE FAILURES: DIAGRAMS.

which had, up to that time, been universally accepted, was altogther erroneous. Rankine's view, as stated in his "Applied Mechanics," was that "the forces which act in a vertical layer or rib of a skew arch with its abutments, are the same with those which act in an equally thick vertical layer of a symmetrical arch with its abutments, of the same dimensions and figure, and similarly and equally loaded." It followed from this assumption, therefore, that the design of a skew arch is in no way different from the design of a right arch of the same span as the span of the former measured parallel to the longitudinal axis of the bridge. Professor Kernot, however, conclusively demonstrated that there is a great intensification of stress along the short diagonal AC of a skew arch, the actual stress being almost exactly double the stress along the lines parallel to AB. At the same time the stress along the long diagonal BD was excessively small.

The existence of such a stress condition is particularly serious since the acute angles of the abutments are of insufficient mass to properly resist the augmented thrust in the direction of the short diagonal, and if the skew be large, the factor of safety low or the test load unusually heavy, the abutments may give way at these points. This is precisely what happened at Bendigo, for the acute angle C of one of the abutments was literally pulverised over the double-hatched portion by the local intensification of the stress and the part of the arch enclosed by the irregular dotted line and the line CD had consequently fallen. (See diagram Fig. 1.)

The cause of this failure lies unquestionably in the lack of knowledge at that time of the true principles of proportioning skew arches and their abutments.

Case 8.—The most recent concrete bridge failure of magnitude occurred on Feb. 28, 1910, when a reinforced concrete arch highway bridge of three spans over the Flat Rock River near Edinburg, Ind., collapsed during a flood of exceptional height. The bridge had been open to traffic for about 8 months and during that time had stood one severe flood accompanied by an ice jam.

As designed, the structure consisted of one central span of 90ft. and two side spans of 75ft. each, all foundations to be on piles. Although the design was submitted by a well-known and responsible concrete bridge company, the County Commissioners decided to save money by omitting the piling and carrying the piers and abutments down to a somewhat greater depth than originally contemplated. Beyond furnishing the design, which appears to have been entirely satisfactory with the possible exception of insufficient provision for flood waters, the bridge company had nothing to do with the work, and the County Commissioners, for whom the bridge was built, had no engineer to advise them or supervise the construction. In spite of this, and to the credit of the contractor, the materials and workmanship were of excellent quality, many of the particles of stone and gravel of the concrete having split instead of being torn out of their places by the collapse.

Upon careful examination of the wreck, it was found that the scour actuated by a considerable quantity of lodged drift had undermined the upstream end and one side of one pier, causing it to tip forward and endwise, and resulting in the fall of the two arches which it carried. The other pier being thus left without support to counteract the thrust of the remaining arch, likewise tilted, allowing this span to drop vertically into the river. There was no evidence to point to any other cause of failure than undermined foundations, and the responsibility for this rests with those who altered the original plans and specifications.

Case 9.—The most extensive failure in reinforced concrete bridge construction, of which records are available, is that of the City Bridge across the Illinois River, at Peoria, Ill. On May 1, 1909, three spans and the two intermediate piers of a 6-span arch structure which had been opened to traffic only a few weeks, collapsed before the supporting centres had been struck. The wrecked spans were each a Melan arch 125ft. in the clear, of 13½ft. rise, and of the solid spandrel type. Practically all of the earth filling was in place at the time of failure. The two ruined piers were specified to be founded upon piles driven to bed rock, though subsequent investigation showed that probably most of the piles stopped at less stable material. In addition, the piles were to be enclosed by permanent water-tight tongue-and-groove sheet piling or Wakefield piling to safeguard the pier foundation against scour; but, in spite of repeated warnings on the part of the consulting engineers, this was not done, nor was any protection in the way of riprapping provided. As a result, during the high water of the spring of 1908, the scour was most serious, in the case of one pier reaching to 3.8ft. below the base of the pier, or 11ft. below the original bed of the river.

Since the design and construction of the superstructure was apparently entirely satisfactory, it was, therefore, not difficult to assign the cause of failure. The lateral support and the frictional resistance of the piles under the two piers in question having been largely removed by the excessive scouring action of the water, buckling and considerable settlement would naturally follow. This action was, no doubt, largely precipitated by a serious settlement and movement in a shoreward direction of one of the abutments, which began a year prior to the collapse of the structure.

Under such circumstances, there is little doubt that the failure was due to insecure foundations.

Case 10.—This is not a case of total or even partial collapse, since the bridge in question has been in constant service since its completion two years ago. It affords, however, an excellent example of spandrel wall cracking, and as such will be used to illustrate a general discussion of this defect, which, as has already been stated, constitutes failure to a limited degree.

This bridge, having a span of 60ft. in the clear, a rise of 6ft. and a crown thickness of 15in., showed cracks in the spandrel walls immediately upon the striking of the centres, although the spandrels are reinforced in the region of the springings by three longitudinal ¾in. round rods. One of these rods is in the coping and the others are located at distances of 1ft. and 3ft. below it. Each of the abutments rests upon a large number of vertical piles driven into quicksand.

With the object of explaining the existence of these cracks in spite of the longitudinal reinforcement in the spandrels, the writer obtained information concerning the dimensions of the abutments, and constructed the diagram shown in Fig. 2. In this diagram the various forces acting upon the east abutment are shown in magnitude, direction, sense, and point of application for a vertical longitudinal rib or strip, 1ft. in thickness. The thrust of the arch P1 is given for the weight of the arch ring and filling only, since the spandrel cracking occurred without any live load on the span. P2 and P3 are the weights of the two trapezoidal prisms of filling resting on the abutment; P4 represents the lateral pressure of the earth filling acting on the vertical projection of the abutment and tending to force it forward into the stream; P5 is the pressure of the water and the saturated material of the stream bed, acting on the face of the abutment; and P6 is the weight of a strip of abutment 1ft. thick reduced for buoyancy of the submerged portion. These various forces, when combined, produce a resultant action, R, on the base of the abutment having a magnitude of 84,000lb. and passing altogether outside of the base instead of cutting it near the centre as it should in a properly designed abutment.

Apart from the obvious effect of this serious error in the design, it is probable that spandrel cracks would have still occurred, although not to the same extent. The abutments, as has been noted, were founded on vertical piles driven into quicksand, and under the thrust of the unusually flat arch lateral yielding of the piles would in all probability have been followed by cracking of the spandrels. The practice of founding arch abutments on piles, none of which are driven on a batter, or where no abutment ties are employed, is in the majority of cases likely to result in dangerous cracks.

Spandrel cracks are so often found in concrete arches that their presence cannot always be attributed to badly designed abutments, or to yielding foundations. Mr. Young knows of one case where spandrel cracking occurred in an arch the abutments of which were founded upon solid rock and where, it is believed, the design was, in general, satisfactory. The spandrels, however, contained no longitudinal reinforcement, and the settlement of the crown when the centres were struck had induced sufficient negative bending moment in the spandrels near their junction with the abutments to overcome the tensile strength of the concrete and cause conspicuous cracking.

Mr. Young believes that the objectionable practice of inserting gas pipe or other metallic handrail posts in the spandrels of arches, strongly favours the development of spandrel cracks. Since the temperature of the exposed metal rises more rapidly than that of the concrete under the heat of the sun's rays, the posts expand more rapidly than the concrete and cause cracking of the latter at every post.

Case 11.—This is a badly cracked wing wall, typical of a great number of like cases. Such a development does not, of course, put the bridge out of commission; but, it necessitates the expense of shoring and repairs. The source of the trouble is generally in bad design, and sometimes in careless workmanship. In this case, the wing wall is about 24ft. high, 3ft. thick at the base, and 18in. at the top, with no reinforcement whatever. The workmanship and materials were good, and the failure is therefore entirely due to the absurd proportions of the wall. A number of cases of cracking of correctly designed wing walls at their junction with abutments are known to Mr. Young, where trouble might have been avoided by a small amount of horizontal reinforcement at the corners.

Conclusion.—Summing up the eleven cases cited, the principal, and therefore primary, causes of failure are found to be as follows: (1) Design of foundations originally defective or rendered defective by alterations not approved by the designing engineers, 6 cases. (2) Design of the superstructure defective, 5 cases.

It therefore appears that in the cases discussed over one-half of the failures occurred from defective design of foundations. Especially significant is the fact that in the case of the two most extensive failures described, the original designs and specifications for the foundations were satisfactory and that the disastrous results were caused by alterations in the plans made by persons in authority without professional advice. The time is coming, Mr. Young believes, when engineers, in self-protection, will refuse to allow their plans and specifications to go out and suffer interpretation and alteration by laymen, but will insist upon the same expert attention to the work under construction as in the designer's office.

A feature of the above summary, which may occasion some surprise, is the fact that in all of the cases considered failure was primarily due to errors in design, either of substructure or superstructure, and that the material, except to a limited degree in Case 2, was not in any way responsible for the unfortunate results.

Mr. Young stated that no special selection of cases was made for his paper; but, in every case had been included concerning which reliable data could be obtained in a short space of time. Since these cases are probably typical of most of the failures of concrete bridges, he believes that there is no ground for the disquieting statements which have been made.

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

AUGUST 23. COUNTY OFFICES AT NAVAN for the Meath County Council. Inquiries to the Secretary, Meath County Council, Ireland.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglican Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. D. O. Holme, Clerk of the Governors, Castle Chambers, Norwich.

SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—The U.D. Council of Kingstown offer premiums of £50 and £20 respectively for the two best designs for the above to be erected at Lower George's Street. Particulars from Mr. J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 5. SHERINGHAM COUNCIL OFFICES.—Architects desirous of submitting designs for the council offices proposed to be erected at Sheringham may obtain full particulars on written application, accompanied by a stamped addressed envelope, to Edgar C. Rolfe, Clerk of the Council, Church Street Chambers, Sheringham.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects. Particulars, together with site plan can be obtained from Mr. A. F. Kidson, Town Clerk, Folkestone.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, together with a plan of site and sections at ground level, may be obtained from the engineer and surveyor, Mr. Samuel J. Harpur, Town Hall, Maesteg. Designs must be deposited at my office by noon on Monday next, September 19th. Two premiums are offered, namely, 25 guineas and 10 guineas, as first and second respectively.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., which it is proposed to erect at a cost not to exceed £10,000. Particulars of the accommodation required, and of the conditions of the competition, together with a plan of the site and the necessary levels, may be obtained on payment of a deposit of £1 1s., which will be returned on receipt of a bona-fide design. Three premiums are offered, viz., £75, £30, and £20, as first, second and third respectively. The competitor whose plans are considered most suitable will be awarded the first premium, and will be engaged to carry out the work, in which case his premium will emerge in his commission. Designs must be delivered to the office of J. Parry Jones, Town Clerk, Denbigh.

NO DATE.—TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan of the states of King's College, Cambridge, in the parishes named. The estate comprise 1,300 acres. Assessors: Sir Aston Webb, R.A., and Mr. Raymond Unwin. Premiums of £150, £100, and £50. Terms and conditions, together with a lithographed plan of the estate, may be obtained at the offices of the Company on and after September 1st. Deposit, one guinea.

CORRESPONDENCE.

"Buildings for Music."

To the Editor of The Architects' and Builders' Journal.

Sir,—It is gratifying to read Mr. H. H. Statham's very interesting article on "Buildings for Music" in a paper of the standing of the "Architects' and Builders' Journal." Too great importance cannot be attached to the question of a suitable position for the organ, and, generally speaking, far too little attention is given to this all-important matter in connection with buildings where music occupies a prominent place. This subject is frequently aired in musical journals, not always to the advantage of the architectural profession, and, if spoken of more often in papers such as yours, would surely lead to a better understanding between architect and organ builder. Although Mr. Statham deals principally with concert halls, where there can be but little excuse for improperly placing an organ, a far wider field is covered when one thinks of buildings intended for public worship. In nine cases out of ten a church or chapel sooner or later has an organ erected, and then begins trouble if sufficient thought has not been given to the organ question. A great factor in this case is the provision of ample head room for the pipes; and if architects realised that a very common length for a pipe is 16ft., they would think twice before giving less room than that. Many a fine instrument has been spoilt in effect by being boxed up in a space utterly unsuitable for it, destroying much of its quality of tone and complicating an already sufficiently complicated mechanism. After all, the organ is nowadays, with few exceptions, recognised as an essential aid to divine service; and if, in projected designs for buildings of a sacred character, the services of an organ builder of repute could be called in to the architect's assistance, a more satisfactory state of things would probably result. It sometimes happens that a prominent architectural feature in a building gets quite obliterated by a bank of organ pipes, when, if more thought had been given in the first instance, much soreness of spirit could have been avoided. It would be interesting to hear the views of your readers, many of whom are doubtless interested in the architectural and musical features of a building, if space could be found for a correspondence. In the hope of which I beg to subscribe myself,

An Interested Amateur.

London.

Finsbury Public Lighting.

To the Editor of The Architects' and Builders' Journal.

Sir,—My attention has been called to a paragraph appearing in your issue of the 3rd inst. relative to the contract recently entered into by the Finsbury Borough Council with the Gas Light and Coke Co. for the lighting of the borough. You state that "this decision was taken after the latest examples of gas and electric lighting had been carefully inspected and relative costs compared."

I am not in a position to say what were the latest examples of gas and and electric lighting inspected by the Council, but I do know that my Company offered to submit examples of electric lighting free of expense to the Council, but this offer was declined.

With regard to the question of relative running costs, my Company submitted a tender for lighting which gave an illuminating power three times as great as the existing gas lighting, and moreover, showed a saving in running costs as compared with gas, of over 14 per cent. In spite of this, however, the Company's offer was declined.

In view of the mistaken impression which the paragraph in question is likely to convey to your readers, I trust you will find space for this letter in your next issue.

H. B. Renwick,

General Manager and Secretary, the County of London Electric Supply Co., Ltd.

BUILDERS NOTES.

Mr. Alexander Howlett, Builder, of Bournemouth, has died at the age of 64, as a result of an accident, a collision between a motor cycle on which he was riding and a motor car.

The employees of Messrs. W. P. Hayter and Son, Builders and Contractors, of Westbourne, Bournemouth, had their annual outing recently, in the Isle of Wight; journeying from Lymington and taking boat to Yarmouth. From there they drove to Newport, where dinner was provided at Roach's Hotel. The party then walked to Carisbrooke Castle. Tea was taken at Lymington on the return journey.

A correspondence on "Scientific Bricklaying" has opened out in "The Morning Leader." A correspondent set the ball rolling by indicting the slow rate of laying bricks, saying that he had never seen more than 120 bricks laid in the day, and also by questioning the necessity for tossing each brick in the hand before laying, and for tapping bricks with the hammer when laying. This has drawn upon him remonstrances from various other readers, who give figures of 1,000, 1,100, 1,200 a day, and a writer who does not count himself expert, confesses to an ability to lay from 500 to 900 bricks per day. We were under the impression that trade union rules prohibited the laying of more than 400 to 500 bricks per man per day.

The report of Waring and White (1906), Ltd. for the year ending March 31st, 1910, presented at the meeting on Thursday last, shows a profit of £14,631, to which has to be added the balance brought forward from the last account, £11,026, making a total of £25,658. From this there is a deduction of £592 percentage to the staff under their various agreements, leaving a net amount of £25,065. The directors recommend that a dividend be not paid, but that the reserves should be strengthened by allocating £15,000, bringing the total reserve fund to £40,000; that £2,000 be allocated to a fund for staff purposes; and the balance of £8,065 be carried forward.

The rush contract for reconstructing and making additions to the older building of the Savoy Hotel, London, is now proceeding. In view of the heavy loss that must be incurred to the hotel during the operations, the work is being carried forward night and day. There are two shifts of men, each working 12 hours, under two foremen, and in all it is estimated that 900 men will be employed on the building. Two floors, containing 30 suites of rooms, are to be added at the top, and a large banqueting hall is also to be constructed on the site of the old Courtyard, with a seating capacity for 500 people. The floor is to be prepared for dancing. The whole work, estimated to cost £125,000, is to be completed in three months. Messrs. Leslie and Co., Ltd., are the contractors.

Statements have appeared in the Manchester papers that a strike is imminent among the operative carpenters and joiners in North-East Lancashire. These workmen have expressed their determination to strike unless the employers concede an advance of a halfpenny an hour. This demand is in substitution for an original request of one penny per hour. It is stated that both sides remain firm. After a strike of fourteen weeks the Leigh painters' dispute is to be submitted for arbitration to the Board of Trade. Pending a decision the masters have offered 8½d. per hour. It is since stated that the strike of joiners and carpenters at Burnley, Nelson, Colne and Padiham has been averted by the operatives accepting an advance of one farthing per hour forthwith, with the promise of another farthing per hour in January next. About 300 men were affected. This unrest in the building trade is probably only another symptom of the general labour unrest which is generally prevalent in the North of England just now.

Tenders.

Addressed postcards, on which lists of tenders may be stated, will be sent free on application to the Manager, Architects' and Builders' Journal, *Caxton House, Westminster.*

Information from accredited sources should be sent to "The Editor," at latest by noon on Saturday if intended for publication in the following Wednesday's issue. Results of Tenders cannot be accepted unless they contain the name of the Architect or Surveyor for the work.

Ashton-under-Lyne.—For the works required in erection of the new savings bank, Ashton-under-Lyne. W. H. George and Sons, architects, 7, Warrington Street, Ashton-under-Lyne.

F. Wooley	£3,435
Storrs and Sons, Stalybridge	3,380
J. Ridyard	3,340
E. Marshall and Sons	3,297
T. Dean	3,260
J. Gibson and Sons, Dukinfield	3,203
Shuttleworth Bros., Stalybridge	3,180
J. Robinson	3,168
Saxon Bros.,* Stalybridge	3,160
R. Carlyle, Manchester	3,158

*Accepted subject to certain omissions.

Rest of Ashton.

Egham (Surrey). — For Electric Theatre, High Street, Egham, Surrey. J. Wornell, architect, 19, Ludgate Hill, E.C.

	A			B
The Acton Concrete Construction Co., Ltd, Acton	£899	15	0	
H. D. Bowyer, Slough	885	0	0	
J. A. Baker and Co., Ltd. Staines	788	0	0	£698
A. Jordan,* Staines	767	0	0	690

*Accepted.

A—Original Scheme. B—Amended Scheme.

Gloucestershire.—Accepted for works of repair, painting, and minor alterations at the following schools, for the Gloucestershire Education Committee:—

Nailsworth Council School:			
E. W. Baldwin, Nailsworth	£126	6	0
Woolaston Council School:			
Thos. E. Clark, Woolaston	79	5	11
Kingswood, Hanham Road Council School:			
A. J. Bridges, Kingswood	133	10	0
Bitton, Oldland Common Council School:			
H. England and Son, Oldland	35	15	0
Bilston Council School, Cinderford:			
P. C. Cousins, Gloucester	67	3	0
Ellwood Council School, near Parkend:			
W. G. Nelmes, Coleford	57	0	0
Parkend Council School:			
John Marfell, Lydney	28	0	0
Plump Hill Council School, near Mitcheldean:			
R. Bidmead, Newnham	48	15	6
Pillowell Council School, near Whitecroft:			
R. Bidmead, Newnham	13	12	6
Ruardean Hill Council School:			
Conway Jones & Co., Gloucester	99	18	6
Steam Mills Council School, Cinderford:			
Wm. Morgan, Cinderford	33	0	0
St. White's Council School, Cinderford:			
W. G. Powell, Ruspidge	45	7	0
Parliament Street Council School, Stroud:			
Philip Ford and Son, Stroud	45	17	6
Whiteshill Boys' Council School, Stroud:			
Philip Ford and Son, Stroud	19	17	6
Whiteshill Girls' and Infants' Council School, Stroud:			
A. S. Cooke, Stroud	26	17	0
Rodborough Council School:			
Gardner and Sons, Stroud	59	0	0
Chalford Hill Council School:			
Geo. Tyler, Chalford Hill	36	16	0
Soudley Council School:			
Byard and Son, Gloucester	537	0	0
Collins and Godfrey, Tewkesbury	490	0	0
E. J. Flewelling, Lydbrook	450	0	0
Dean Forest Road Rolling Co., Soudley	445	10	6
A. S. Cooke,* Stroud	390	6	8

*Accepted.

Goodwick (Pembrokeshire).—Erection of new Council school buildings, for the Pembrokeshire Education Authority. D. Edward Thomas and Son, architects, 17, Victoria Place, Haverfordwest.

Nicholas Bros., Goodwick	£6,920	0	0
D. Davies and Sons, Cardiff	6,550	0	0
Cole and Sons, Milford Haven	6,419	0	0
Hayward and Wooster, Bath	6,281	0	0
Llewellyn Thomas, Goodwick	6,225	0	0
Davies and Howell, Cardiff	6,150	0	0
John and Griffiths,* Fishguard	5,685	16	7

*Accepted.

Gillingham.—For school extensions, for the Education Committee.

Barnsole Road.

West Bros., Rochester	£2,575
C. E. Skinner, Chatham	2,559
H. E. Phillips, Gillingham	2,495
G. Gates and Son,* Frindsbury	2,465

Napier Road.

West Bros.	£1,984
C. E. Skinner	1,969
H. E. Phillips	1,897
G. Gates and Son*	1,775

*Accepted.

Hanwell.—Recommended for acceptance for the erection of new elementary school in Graham Gardens, Hanwell, for the Middlesex Education Committee.

H. Knight and Son, Tottenham, £7,932.

Heswall (Cheshire).—For extensions of the accommodation at Heswall Council school, for the Hoylake and West Kirby Administrative Sub-committee. C. E. Deacon and Horsburgh, architects, 12, St. George's Crescent, Liverpool. Quantities by W. P. Horsburgh, Q.S.A., surveyor, Liverpool.

Hall and Jamieson, 4, Comus Street	£1,990
Haugh and Pilling, 1, Watmough Street	1,895
W. H. Forde, Ltd., 73, Claughton Road, Birkenhead	1,889
H. E. B. Greene & Co., Knight Street	1,885
Morrison and Sons, Wavertree	1,850
P. Tyson, Dryden Street	1,800
J. Merritt, Adelphi Street, Birkenhead	1,793
Duthie and Dobson, Comus Street	1,743
S. Webster, 10, Brasenose Road, Bootle	1,737
W. Fleming and Co., Liverpool Road, Neston	1,649
J. and F. Kitchen, Telegraph Road, Heswall*	1,624

*Accepted.

Rest of Liverpool.

Holmes Chapel (Cheshire).—Accepted for carrying out alterations and extensions at Holmes Chapel College, for the Cheshire Education Committee.

Huxley, Malpas, £,970.

London, S.E.—For erection of new premises, for the Hatcham Liberal Club, Queen's Road, Peckham.

Hollingsworth, Peckham	£6,486
Holloway Bros., Westminster	6,200
Higgs and Hill, Lambeth	6,138
Godson and Sons, Kilburn	5,998
Leng, Deptford	5,980
H. L. Holloway, Deptford	5,937
Nash, Deptford	5,644
Nightingale, Lambeth	5,575
A. J. Ware,* 105, Park Road, Plumstead	5,573

*Accepted.

London, S.W.—For erection of a combined housewifery and laundry centre on the St. Dunstan's Road site (Fulham), for the London County Council.

A. Roberts and Co., Ltd., 74, Earl's Court Road	£1,763	15	2
Stevens and Sons, 33, Crouch Hill	1,692	0	0
G. Neal, Tennyson Works, Willesden Lane, Kilburn	1,654	0	0
W. Johnson and Co., Ltd., Wandsworth Common	1,640	0	0
Lole and Co., Trafalgar Square, Chelsea	1,635	0	0
E. Triggs, 92, The Chase, Clapham	1,607	0	0
G. Godson and Sons, Pembroke Works, Kilburn Lane	1,598	0	0
J. Garrett and Son, 83, Balham Hill*	1,560	0	0

Architect's estimate, £1,556.

*Recommended for acceptance.

London, W.C.—For repairs and redecoration at Caxton Hall, for the Westminster City Council.

De Jong and Co., Ltd., 84, Albert Street, Camden Town	£3,588
Campbell, Smith and Co., Ltd., 25, Newman Street, W.	3,285
Bywaters and Sons, Ltd., 10, Kingly Street	3,030
J. Styles and Son, 2, Market Street, S.W.	2,920
C. F. Kearley, 31, Carnaby Street, W.	2,884
Kirk and Kirk,* 17, Esher Street, Westminster	2,870

* Recommended for acceptance.

Middlesbrough.—For erection of Linthorpe Road Primitive Methodist School, etc., Middlesbrough. T. W. T. Richardson, architect, Stockton-on-Tees.

Fovargue Bros.	£4,747
Henry Walker	4,685
J. G. Robson	4,542
Bastiman Bros.	4,427
H. Alcock	4,391
McNaughton	4,350
S. Coates, Ltd.	4,311
A. J. Cooke	4,216
Vinter and Davison	4,175
J. Davison	4,152
Alison Bros.	4.115
D. Doughty and Sons	4,073
Duchars and Bowers	3,788

Newark.—For alterations and additions to the Newark Parish Church schools.

J. Barnsley and Sons, Birmingham	£3,138
Beardsmore and West, Northampton	3,060
T. Lowe and Sons, Burton	2,840
C. Baines	2,565
W. Smith	2,470
Renshaw and Wright	2,461
G. Brown and Sons*	2,458

Rest of Newark.

*Accepted.

Newcastle (Staffs).—Accepted for structural repairs at the Boys' High School, Newcastle. A. R. Wood and Son, architects, Tunstall.

S. Wilton, jun., Newcastle-under-Lyme, £1,020.

Old Sarum (Salisbury).—For the erection of an Isolation Hospital at Old Sarum, Wilts, for the Salisbury and District Joint Isolation Hospital Committee. J. Hugh Goodman, architect, Reading. H. Cooper and Sons, surveyors, Reading.

E. Grace and Sons, Andover	£18,344
Playfair and Toole, Southampton	18,033
C. A. Hayes and Sons, Bristol	17,292
Mussellwhite and Sapp, Basingstoke	17,140
Hayward and Wooster, Bath	17,117
Jenkins and Son, Southampton	17,108
Billett and Musselwhite, Salisbury	16,889
E. Walters and Son, Bristol	16,652
F. Burton, Durrington	16,523
Stephens, Bastow and Co., Ltd., Bristol	16,453
G. Moore and Sons, Trowbridge	16,262
Bowman and Sons, Bournemouth	16,236
Bourne and Jenkinson, Andover	16,092
Wort and Way, Salisbury	15,972
E. C. Hughes, Wokingham	15,733
W. T. Nicholls, Gloucester	15,594
Harris Bros., Salisbury	15,517
McCarthy E. Fitt Reading	15,497
W. J. Bloxham, Banbury	15,376
Drowley and Co., Woking	15,307
Parson Bros., Westbury	14,994
A. J. Colbourne, Swindon	14,799
T. Higgs, Northampton	13,998

Romford.—For erection of new business premises and dwelling house, with works incidental thereto, on the site of the "Old Windmill and Bells," Market Place, Romford, for L. F. Stone. E. J. Little, architect, Hornchurch Road, Romford. C. E. Pease, F.S.I., 16, Clifford's Inn, Fleet Street, E.C., surveyor.

J. W. Smith and Co., Birmingham	£5,547
Hibberd Bros., Ltd., London, S.E.	4,999
A. H. Fryd, Southend	4,859
Perton and Co., Ltd., Ashford, Middlesex	4,765
W. Pinney, Brixton	4,745
W. Shurmur and Sons, Ltd., Clapton	4,554
Wood Bros., Forest Gate	4,485
Sanford and Co., Woolwich	4,450
Brown Bros., Grays	4,400
Myall and Upson, Ilford	4,400
F. and G. Foster, Norwood	4,388
B. E. Nightingale, Lambeth	4,290
T. J. Bailey, Chelmsford	4,280
A. Partridge Bros., Romford	4,250
Dowsing and Davis,* Romford	4,220
Weibking and Co., Ltd., Hackney	3,990
Fitch and Cox, Enfield	3,692

*Accepted, excluding shop fronts.

Rugby.—For erection of new Palace Theatre.

Harris	£4,840	0	0
Lovell, Marlow	4,805	0	0
Linnell and Son	4,768	0	0
Hollowell	4,725	0	0
Parnell and Son	4,695	0	0
Winn and Son	4,664	5	0
Woodhouse, Nottingham	4,534	0	0
T. Adams and Son, Daventry	4,390	0	0
Cockerell*	4,344	0	0

*Accepted.

Rest of Rugby.

Scarning, Norfolk.—For additions and alterations to the Free School, Scarning, Norfolk, for the Governors. George I. Skipper, F.R.I.B.A., architect and surveyor.

James Needs	£780	0	0
I. Youngs and Son	747	0	0
Horace Mack	730	0	0
Eldon Smith	720	0	0
Wicks and Sons	716	11	10
W. S. and J. Larner*, East Dereham	680	0	0

*Accepted.

Wrotham (Kent).—For the erection of Wrotham Borough Green Council School, for the Kent Education Committee. Wilfred H. Robinson, architect.

W. Allcorn and Sons, Plaxtol	£4,892	10	0
F. and G. Foster, Camden Works, Norwood Junction	4,878	0	0
Thos. Crossley and Son, Bromley	4,695	0	0
Clair Sutton, Reading	4,585	0	0
John Lonsdale, Swanley	4,561	0	0
W. J. Ballard, Ramsgate	4,549	0	0
W. T. Burrows, Maidstone	4,490	0	0
Louis Curtis, Borough Green	4,476	0	0
Geo. Browning, Canterbury	4,372	0	0
W. J. Norris, Sidney Works, Beckenham	4,370	0	0
C. E. Walis and Sons, Ltd., Maidstone	4,320	0	0
Geo. Gates and Sons, Frindsbury, Rochester	4,275	0	0
James Wood and Sons, Maidstone	4,259	0	0
W. and L. Bowes, Milton Regis	4,232	0	0
C. Baker and Son, Strood, Rochester	4,223	0	0
D. Godden and Sons, Hamstreet, Ashford	4,189	0	0
W. H. Archer and Son, Gravesend	4,173	0	0
J. A. Davison, West Malling	4,167	0	0
J. Podger and Sons, Bromley	4,161	0	0
Chas. E. Skinner,* Chatham	4.160	0	0

***Accepted.**

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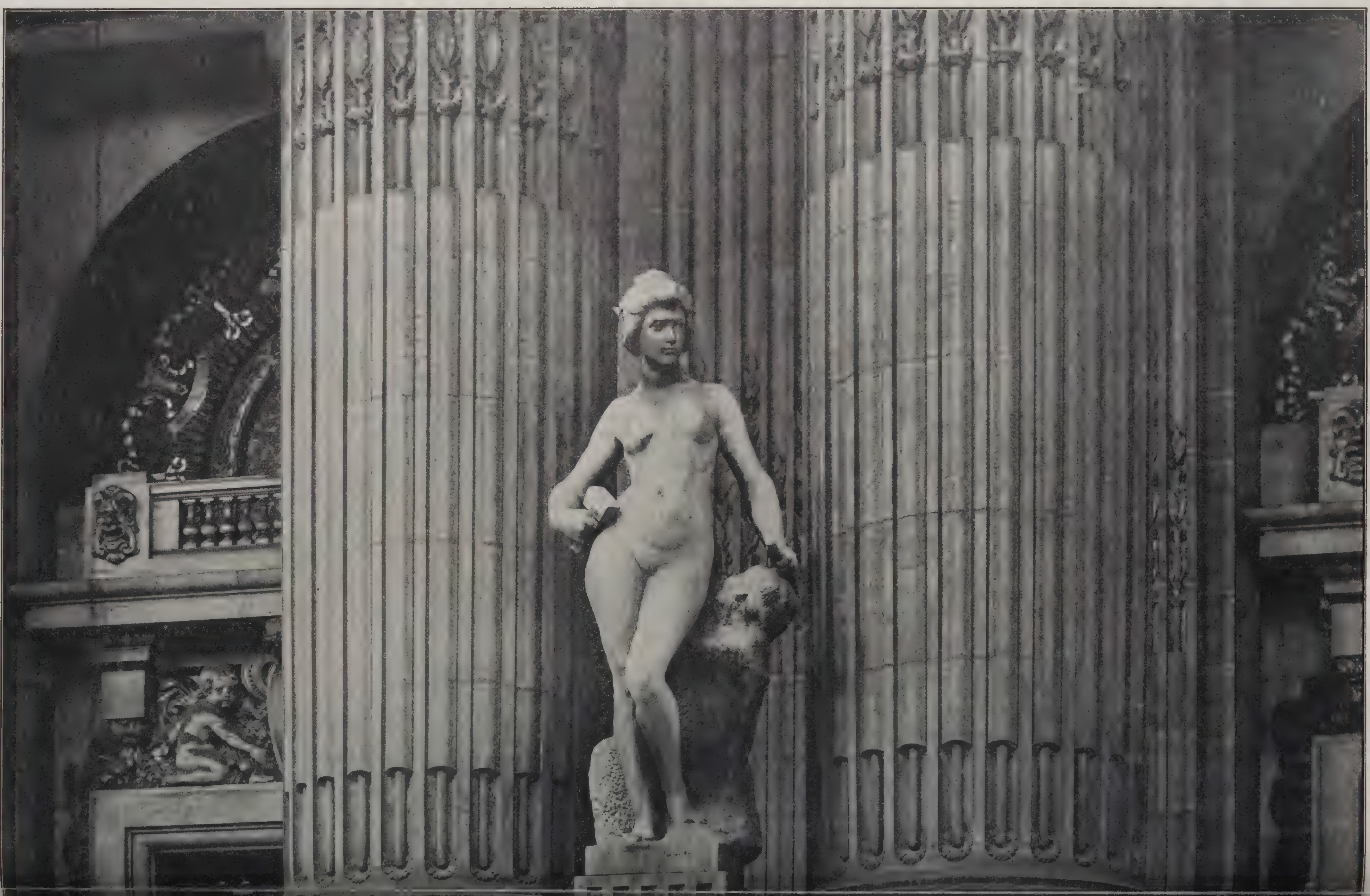

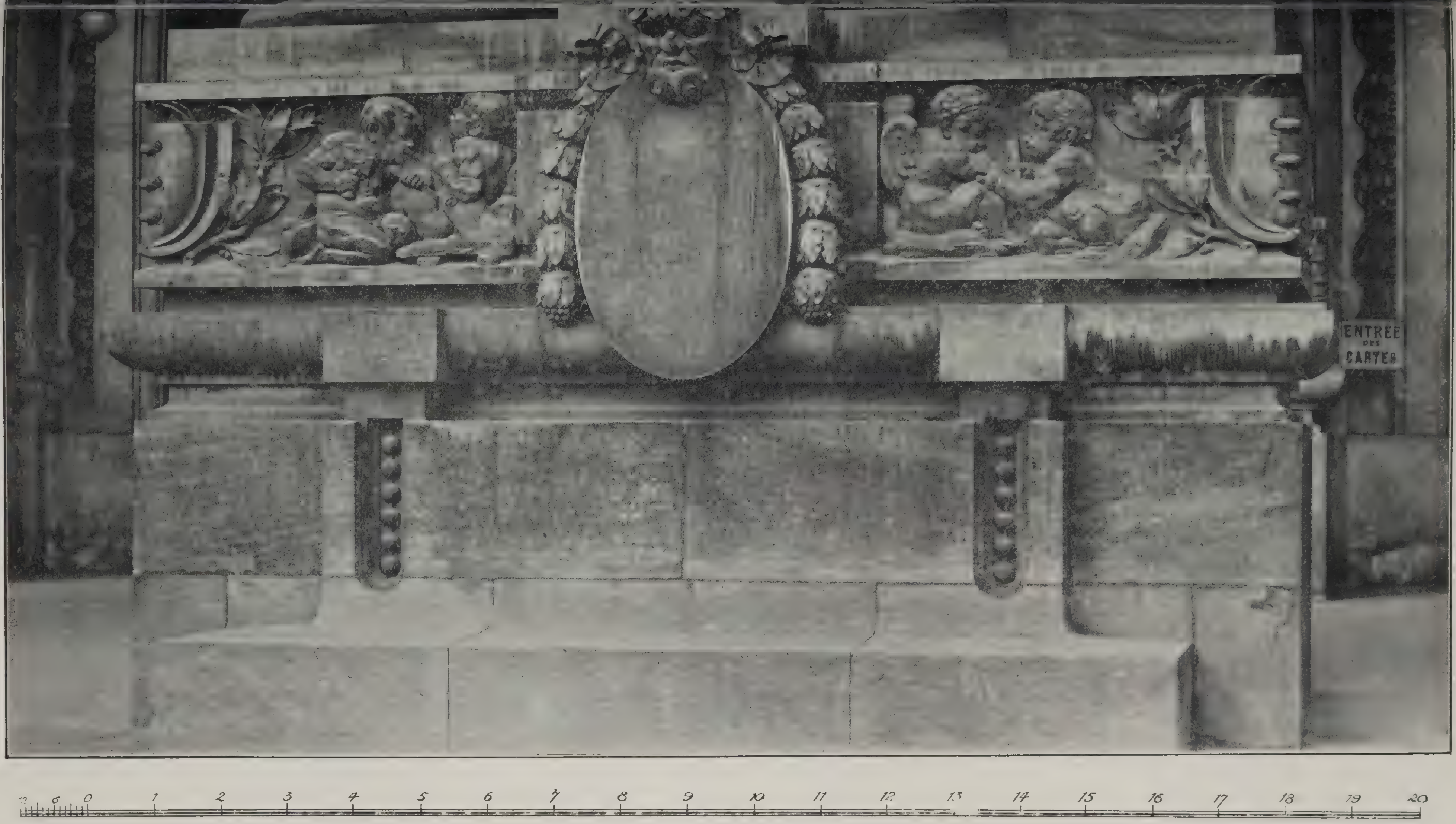

This detail is from the centre portion of the main entrance front of the Grand Palais facing the Petit Palais, and the beautiful figure of "Sculpture" is one of four that adorn this portion, the other figures being of "Painting," "Music," and "Architecture." The work is redolent of French feeling, and full of all the best qualities of the modern French schools of Architecture and Sculpture. The mouldings and the details throughout are vigorous and fresh, and the setting of the sculpture shows that grace and harmony of which, unfortunately, we posses so few examples in this country. All is in stone, now weathering to a fine tone, after ten years of exposure, for the Grand Palais is, like the Petit Palais, a permanent relic of the Exhibition of 1900.

DETAIL OF THE GRAND PALAIS, PARIS. M. DEGLANE, ARCHITECT. THE FIGURE OF "SCULPTURE" BY M. CORDONNIER.

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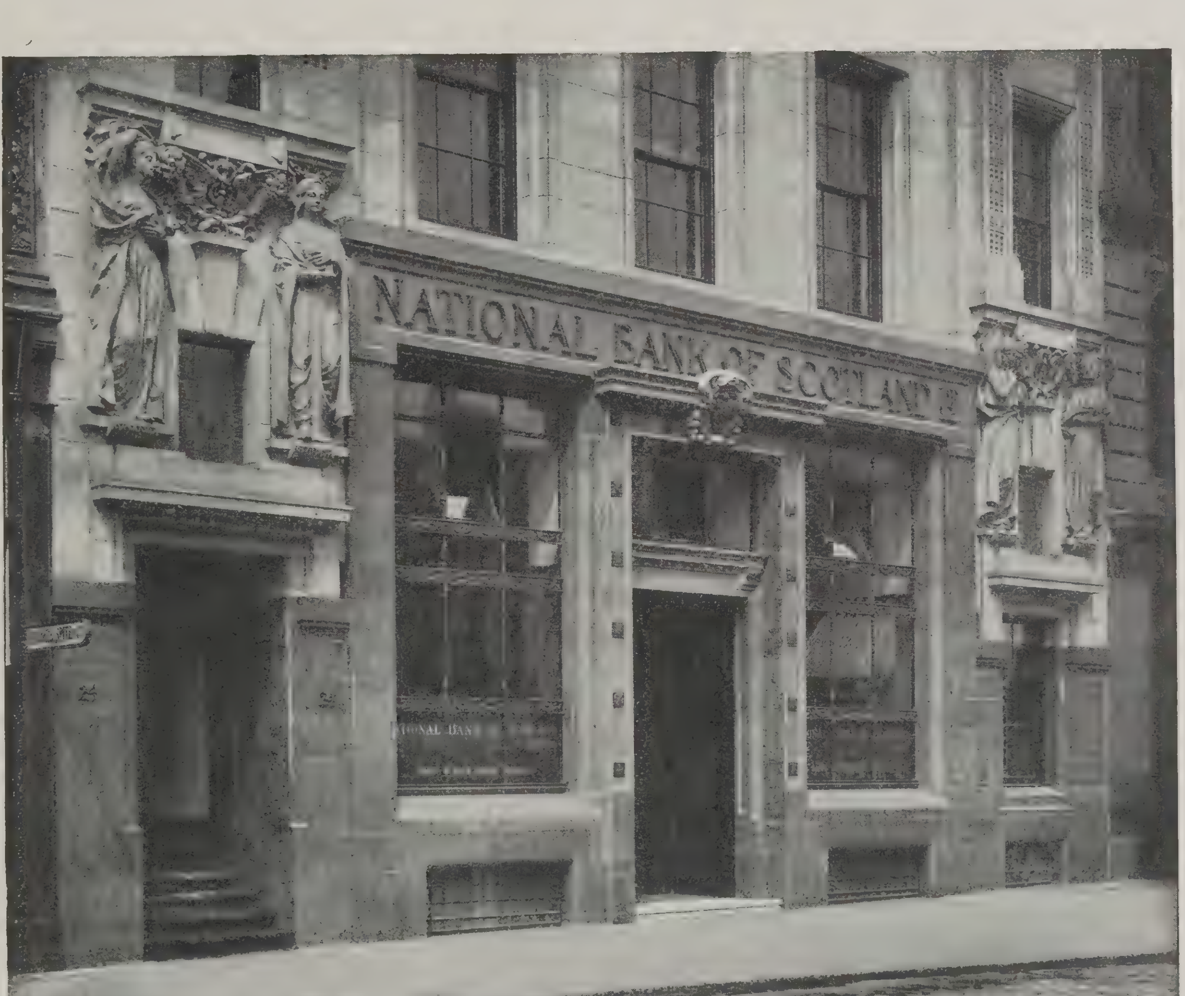
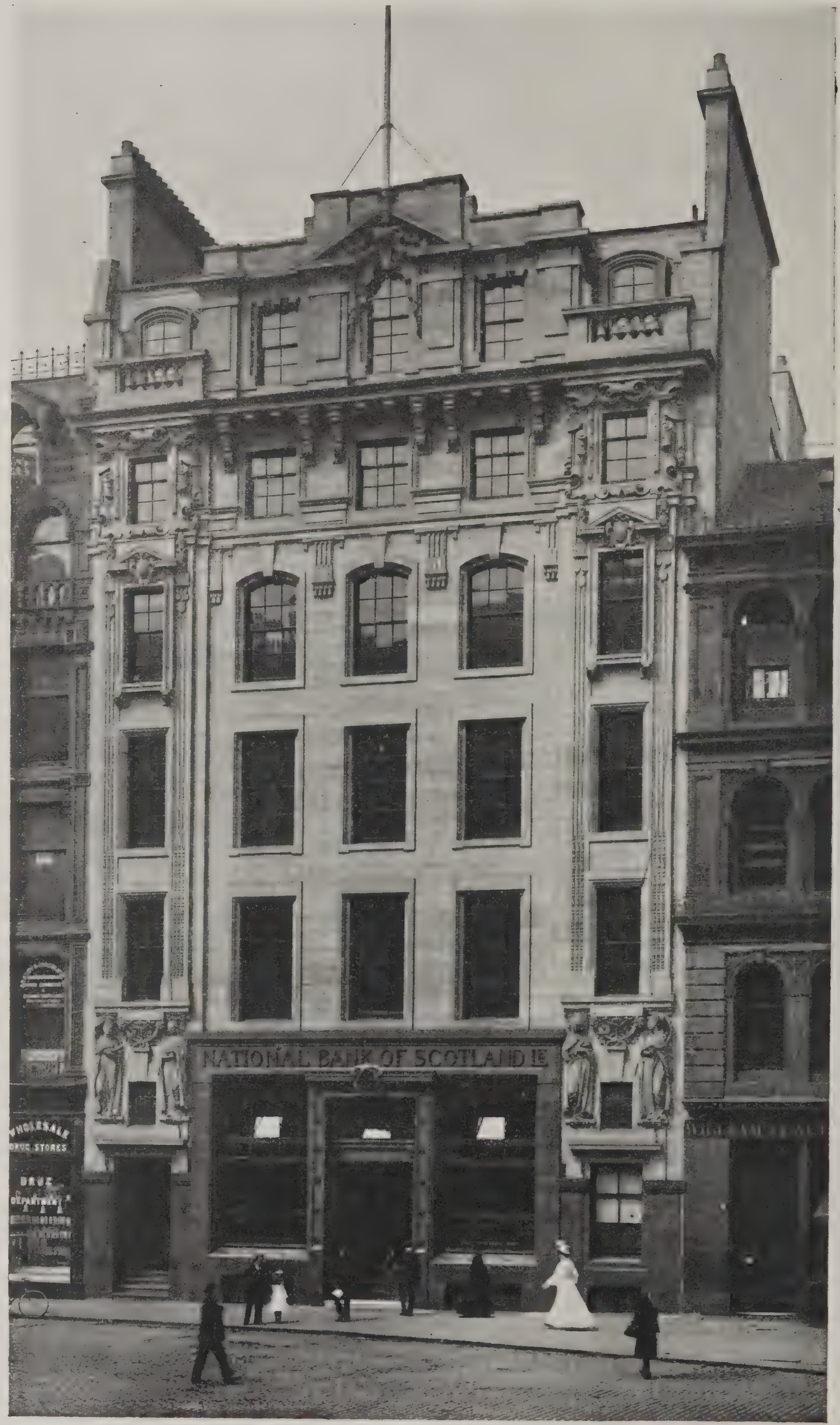
THE ARCHITECTS' &
BUILDERS' JOURNAL

WEDNESDAY,
AUGUST 24th, 1910.

Volume XXXII. No. 812.



DETAIL: NATIONAL BANK OF SCOTLAND, GLASGOW.
ALEX. N. PATERSON, M.A., F.R.I.B.A., ARCHITECT.
(See next page and page 190.)



THE NATIONAL BANK OF SCOTLAND, GLASGOW: GENERAL VIEW FROM ST. ENOCH SQUARE
ALEX. N. PATERSON, M.A., F.R.I.B.A., ARCHITECT.

(See previous page and page 190.)

THE ARCHITECTS' & BUILDERS' JOURNAL.

AUGUST 24th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 812.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

The Garden Suburb House.

In our issue of August 10th we commented on a paragraph appearing in the "Westminster Gazette" under the above heading as follows:—

> THE GARDEN SUBURB HOUSE.
>
> A writer in the "Westminster Gazette" extols the merits of the garden suburb house by saying that the purchaser of a house in a garden suburb not only obtains a residence which is designed to his own wants, but he has neither the cost nor the trouble of discovering an architect, a builder, a surveyor, or a solicitor. He pays a stated sum, which may range from £300 to £400 for a modern cottage to £3,000 for a large mansion; and in that sum all other costs will be included. For the definite amount the house is designed, built, and finished ready for occupation. We presume that the next suggestion will be that the architect should be dispensed with.

Mr. Richard A. McCurdy, M.P., a director of the Garden Suburb Development Company (Hampstead), Ltd., writes to us that this paragraph has been brought to his notice, and he goes on to say that:—

> As this refers to the work of the Garden Suburb Development Company (Hampstead), Ltd., of which I am chairman, I hope you will permit me to correct an impression which I should be sorry should be created. The business of this Company is certainly not to dispense with the architect: it was formed for the opposite purpose. When the Hampstead Garden Suburb Trust acquired 240 acres adjoining Hampstead Heath, the speculative builder commenced to build upon it in his accustomed manner. He may have employed architects or he may not, I think the latter. The result was described by a writer in "Country Life" as follows:—
>
> "Without this Company (The Garden Suburb Development Company (Hampstead), Ltd.) as part of the machinery for creating the suburb, it seems likely that the brave hopes of the promoters would have sorely miscarried. At the start some few plots were leased to single builders, with results that we need neither describe nor illustrate. It was clear that there was a large chance of the labours of the consulting architects, in planning the roads, open spaces, and building sites, being smothered by an inharmonious jumble of unrelated designs, all, perhaps, admirable in themselves. Between the Trust Company and the man wanting to build there was need of a buffer state. Some friends of the Trust Company formed the Development Company to fulfil this function. The latter Company, by co-operating with the consulting architects, is able to build up groups of houses and create vistas and street pictures which would otherwise have been impossible. It employs about a score of architects of high repute to design for the willing purchaser, or it will work with the purchaser's architect, and it builds the houses through an official contractor. By this means the building trade is removed from the sphere of speculation, and the possibility of freak houses which offend the landscape is destroyed."
>
> This Company was formed to ensure that architects and contractors of repute should be employed in building houses of all sizes on the Hampstead Garden suburb. In the first year we paid over £2,000 in architects' and surveyors' fees. The following architects among others have done work for us:—
>
> Geoffry Lucas, A.R.I.B.A.
> E. L. Lutyens, F.R.I.B.A.
> Arnold Mitchell, F.R.I.B.A.
> Barry Parker and Raymond Unwin.
> M. H. Baillie Scott.
> C. Harrison Townsend, F.R.I.B.A.
> W. H. Ward, M.A., A.R.I.B.A.
> T. M. Wilson.
> Edgar Wood, A.R.I.B.A.
> Herbert A. Welch.
> Michael Bunney and C. C. Makins, AA.R.I.B.A.
> Courtenay M. Crickmer.
> E. Guy Dawber, F.R.I.B.A.
> Horace Field, F.R.I.B.A., and Evelyn Simmons.
> W. Curtis Green, A.R.I.B.A.
> P. Morley Horder, F.R.I.B.A.
> Joseph and Smithem.
> Langley & J. C. Baines, A.R.I.B.A.
>
> We leave the choice of an architect entirely to the client, but no house will ever be built for this company without it has been planned and supervised by a qualified architect working for proper professional fees.

We have not now the original paragraph of the "Westminster Gazette" before us; but our impression was that it was a generalisation, and referred to supposed advantages peculiar not alone to the Hampstead suburb, but to all similar projects. It is hardly necessary to say that we should not have thought of indicting the Hampstead suburb, which, as Mr. McCurdy points out, and as we are well aware, has very properly employed the services of many competent architects for the design of its houses. But Mr. McCurdy doubtless knows that it is becoming an habitual practice for estate development firms, especially of the speculative kind, to instance the saving of architects' fees as one of the inducements which the public obtains by dealing with them; and it is a practice which ought to be sternly reprobated, not merely in the interests of architects, but of Architecture. The "Westminster Gazette" paragraph, as it stands, expresses too much, or, in the light of Mr. McCurdy's explanation, too little. We do not think that a man should be saved the trouble, at all events, of discovering the artist who provides him with so intimate and personal a thing as his home. Rather should he be encouraged to feel that he is able to select the architect whose work appeals most sympathetically to him; and this without any additional expense to the projected cost of his dwelling. This, in effect, is what the Hampstead Development Co. enables him to do, and it ought to make the most of it. The builder, surveyor, and solicitor carrying out impersonal though necessary duties, may come in a different category; but the architect should never be obscured. From which Mr. McCurdy will understand that we were not quarrelling with the very excellent methods of this company, or of any other garden suburb development company on similar lines, but with the expressions and point of view by which the "Westminster Gazette" sought to extol them.

Temporary Exhibition Buildings.

THE catastrophe at the Brussels Exhibition naturally suggests some considerations as to the whole subject of the temporary architecture of exhibition buildings, both in regard to the question of security and that of suitable architectural treatment.

In regard to the first-named point, the fire at Brussels, especially when we consider it in connection with the recollection of the far more serious calamity of the fire at the bazaar in the Rue Jean Goujon at Paris, a good many years ago, ought to render it evident once for all that the erection of a number of inflammable buildings, containing often collections of very inflammable substances, under circumstances in which they are likely to be crowded with spectators, constitutes a public danger which ought never again to be incurred on such occasions. Happily the Brussels fire has not been accompanied, like the Paris one, by a holocaust of human lives, but this was perhaps only a fortunate accident, owing to the buildings not being crowded at the time. But a quantity of valuable property has been destroyed, along with works of art the loss of which no insurance money can replace, owing to the double risk of having buildings which would easily burn, and of not having, apparently, any adequate means on the spot for extinguishing fire. The latter provision is requisite in any case, and ought to be strictly seen to in future large exhibitions, for even if the buildings are fire-resisting, their contents may be inflammable; and in such a case the first few minutes are all-important; a very brief delay in getting to work to extinguish a fire may make all the difference between a merely local damage and the gutting of a whole building.

In regard to the buildings, every consideration points to concrete-steel, in one or other of its forms, as the material for temporary exhibition buildings; if properly made and every precaution taken to thoroughly isolate the steel from contact with the external air, it is the most fire-resisting material known, and nothing else ought to be countenanced for temporary exhibition buildings in future.

Then follows the question, not unimportant, of the architectural treatment of such buildings. There has been of late years far too much of the attempt to give to exhibition buildings a monumental character; to treat them, as many of those at the Chicago Exhibition were treated, as imitations of classical buildings of columnar style. The one argument that can be adduced in favour of this method is that it may have a certain educational value, and that those who have not seen any of the great classical or Renaissance buildings may thus get an impression of their effect. This imitative architecture at exhibitions seems to have been confined to classic forms; we do not remember any important attempt at Gothic imitations of the kind, probably because the broader forms and surfaces of classical architecture are more easy to reproduce in this way. The latest attempt we have heard of to reproduce classic architecture in an exhibition building was the design for the British pavilion for the forthcoming exhibition at Rome, a reproduction of a part of St. Paul's Cathedral, made for the odd reason that Rome was full of genuine Renaissance architecture and genuine classic remains, and that therefore an imitation of an English building of the same type was the most suitable thing for the English pavilion at Rome. One is tempted to put the double question—why, because a city is full of genuine Renaissance buildings, put a piece of sham Renaissance to compete with these? And secondly, why make exhibition buildings into sham monuments at all?

The two things to bear in mind, as a basis for the architectural treatment of exhibition buildings, are, first, that they are necessarily temporary; secondly, that they are properly of a festal character. An exhibition, international or national, is of the nature of a holiday resort, and its buildings should have a holiday appearance. And if we carry our recollections back to the two great Paris exhibitions of recent years, those of 1889 and 1910, it will appear that the French architects for the most part take this view of the matter, and that they produced buildings which were obviously both temporary and decorative, and which were not imitative of any existing monuments. M. Formigé's two large buildings, the Palais des Arts and the Palais des Arts Liberaux, which flanked the opposite sides of the Champ de Mars in the 1889 exhibition, were almost exceptional examples, æsthetically, of what temporary exhibition buildings ought to be. Practically, they were not what we should now consider sufficiently fireproof, as they were based on iron construction in which the iron, though much of it was covered, to the eye, by a decorative treatment of terra-cotta and coloured tiles, was not really protected in a fire-proofing sense, its main structural lines being in fact visible as the framing of the tiles and terracotta. But these buildings, which stood for some years, but were removed to make way for the 1900 exhibition, ought not be forgotten, for they were models of their kind for the purpose. They imitated nothing; they were perfectly new and original in design; they were obviously temporary; and they were essentially decorative and festal in character. The 1900 Exhibition contained nothing quite so good as these; there was rather too much of the pie-crust element about some of the buildings; but they kept mostly to the same ideal, of not imitating monumental architecture, of being obviously temporary, and of a decorative character of originality. They were, we believe, mostly of fibrous plaster on iron cores.

Supposing concrete-steel adopted as the material for exhibition buildings, there is nothing to prevent its being treated, architecturally, in a similar spirit. A certain amount of surface modelling in cement is quite feasible; but in addition to that there is the possible application of coloured materials, such as marble or tiles, on flat surfaces; and there is also the rather neglected resource of *sgraffito* design, a process peculiarly in keeping with a concrete building. Sculpture in plaster, in relief, or in the round, could also be introduced, though this should be introduced with judgment and restraint, and where it would have a meaning. In the 1900 Exhibition the French used sculptured figures rather too freely; you saw them on every cornice and coign of vantage, their limbs flying out in the air, as if they had been blown there by the wind, and had difficulty in maintaining their position. To toss figures about wholesale in this way is to lower the value of the figure as an adjunct to architecture, and reduce it to a commonplace. But in making up a fireproof architecture for exhibition buildings, there is plenty of opportunity for effect and for really original design, keeping in mind the two conditions named above—that it should have the character at once of temporary and of festal architecture. In the case of international exhibitions, also, there is a great deal of scope for special character in the design of the pavilions for different nations, by the use of ornamental detail derived from, or suggestive of, their respective schools of ornament. That is a much better way of doing it, gives much more scope for architectural invention, and would produce a much more interesting result, than making sham reproductions of architectural monuments.

NOTES AND NEWS.

Romford Garden Suburb Competitions.

In connection with a Town Planning and Modern House and Cottage Exhibition to be held at the Romford Garden Suburb in June and July of next year, we have received a preliminary announcement of competitions open to architects and builders in connection with the Exhibition. Mr. H. H. Raphael, M.P., is offering prizes, amounting to £1,050, for the best designed cottages erected in the Exhibition, for a site plan, and other designs. The list of competitions, which are open to architects, artists, and builders, resident in the United Kingdom, is as follows:—

COMPETITIONS OPEN TO ARCHITECTS.

CLASS I.—A detached house, to cost £500.—First prize, gold medal and £200; second prize, £100.
CLASS II.—A detached cottage, to cost £375.—First prize, gold medal and £200; second prize, £100.
CLASS III.-For the best internally fitted cottage in Class I.—First prize £50.
CLASS IV.—Ditto, in Class II.—First prize, £50
CLASS V.—Site plan of part of Gidea Park.—First prize £100; second price £50.
CLASS VI.—Garden Design for Cottage in Class I. or II.—First prize, £25; second prize £10.
CLASS VII.—Perspective drawing, suitable for reproduction of a cottage entered for competition in Class I. or II.—First prize, £10; second prize £5.

COMPETITION OPEN TO BUILDERS.

CLASS VIII.—For excellence of workmanship and construction in the erection of a cottage in Class I. or II.—First prize, gold medal and £100; second prize, £50.

The list of entries will close on the 30th October, 1910. Final date for competitive designs to be submitted, 1st December, 1910. Full particulars, forms of entry and conditions may be obtained from the Secretary, "Squirrels Heath Exhibition," 33, Henrietta Street, Strand, W.C.

The assessors will be Mr. E. Guy Dawber, V.P.R.I.B.A., Mr. H. V. Lanchester, F.R.I.B.A., and Mr. Mervyn E. Macartney, B.A., F.R.I.B.A., F.S.A.

We should explain here that it is the great desire of the promoters that these competitions should appeal particularly to architects, and the conditions have been specially framed with that end in view. Freak cottages or cottages whose main object is to exploit some particular building material are not desired. The desire is that the architect should be supreme, and that good architectural designs should be sent in, designs which express solely the ideas and feelings of the authors in regard to smaller domestic work. The prizes also are generous, and should make their appeal to men of good standing. The scheme is not without its importance from a national and social point of view. The eastern side of London has expanded and developed in a manner that is the despair of architects, town-planners, and social reformers. For the most part it will remain a hopeless problem for many years to come, but it is not too late to check the evil, and to show what can be done.

The Cost of Building in Australia.

Some interesting particulars as to the cost of building in Sydney are given by Mr. J. M. Pringle, Hon. Sec. to the Federated Master Builders' Association of Australia, in a letter to the "Sydney Daily Telegraph" of June 25th. His notes form a review of the prices obtained by builders during the last 25 years, and have been published in view of the sensational statements that have appeared in the Sydney Press. He says:—

"In considering the present cost of building, account should be taken of the tariff which imposed duties on building materials, of the more costly materials now used in their construction, in marble, ornamental iron, brass, and copper work, electric fittings, lifts, etc., and also that there was a gradual decline in the cost of buildings from 1885 to 1896.

"During the years immediately following the bank failures the building trade was practically dead, and the process of recovery has been extremely slow.

"The following percentages are based on the actual cost of work in different years, and will serve to show the unreasonable nature of the present criticism levelled at the assumed high cost of building. I have selected for illustration leading items in building construction with which everyone is more or less familiar, but other items show similar variations:—

Cost of excavation, 1887 to 1899, fell 20 per cent.
Cost of bluestone concrete, 1887 to 1899, fell 45 per cent.
Cost of brickwork, 1885 to 1896, fell 51 per cent.
Cost of stonework, 1887 to 1896, fell 54 per cent.
Cost of carpenter work, timber in roofing, 1887 to 1899, fell 69 per cent.
Cost of timber, joist and flooring, 1887 to 1900, fell 43 per cent.
Cost of corrugated iron (roofing), 1891 to 1900, fell 15 per cent.
Cost of plasterer (cementing), 1887 to 1901, fell 62 per cent.

Prices at end of May, 1910.

Excavation, 10 per cent. higher than in 1887.
Concrete, 25 per cent. lower than in 1887.
Brickwork, 30 per cent. lower than in 1885.
Stonework, 25 per cent. lower than in 1887.
Timber in roofing, 61 per cent. lower than in 1887.
Joisting and flooring, 26 per cent. lower than in 1887.
Corrugated iron, same price as in 1887.
Cementing, 42 per cent. lower than in 1887.
The price of brickwork recovered somewhat between 1896 and 1900, and during the last ten years has risen 13 per cent.

"I may point out that the carpenter trade is still in the doldrums, and that the common experience of builders is that it is almost impossible to get paying prices for woodwork. It is unfortunate that the cost of buildings has such a close connection with the price of land, the speculative element for building purposes lies in the latter, sometimes to the detriment of the former, and no doubt it is a matter of much concern to land agents and speculators to find that the legitimate cost of building is slowly recovering. The profits of the builders can be very safely left to the action of the extreme competition which obtains for building work; but it ought to be evident that the position of those engaged in the building trade, employers and employees, has its own troubles."

The Destruction of Welsh Monuments.

Mr. W. D. Caröe writes to the "Times" with some indignation concerning the apparent acquiescence of the Welsh Historical Monuments Commissioners to the contemplated destruction of Newport (Mon.) Castle and Great Camp in Penmaenmawr. "The River Front of Newport Castle," says Mr. Caröe, "is in one respect a unique example of mediæval skill in the erection of such a work upon a tidal estuary subject to quite unusual variations of water-level. The internal dock and the arrangements connected with it are as perfect as when erected, while the vaulted chapel door is a work of rare beauty. The whole front has been a stately and quite majestic construction, and, with the exception of the termination of the noble central tower, a portion of every detail of it still survives. Not the least valuable part is the double curtain wall south of the central tower, which it is proposed to destroy, not for the erection of a permanent, but of, what is more surprising, a temporary bridge. But by the removal of some hideous and unworthy modern red-brick houses, erected some few years ago, without respect to the castle upon its southern curtain, a grand river approach could be secured to the town. The castle would again become a feature in the town itself as well as when seen from the river, and all engineering difficulties (which, by the way, I do not admit the existence of) connected with the bridge would disappear.

"The language used by the Commission as regards the great prehistoric camp of Penmaenmawr is equally unintelligible. If so fine a survival of prehistoric times existed in any other civilised country, even in Ireland, it would long ago have been placed under national control. But because a trading company can make money out of the destruction of this once magnificent headland, in which Snowdonia meets the sea; nothing, not even this unparalleled survival, is to be held sacred. The Commissioners not only acquiesce, but even seem to compliment the company upon facilities so kindly given for survey and plans to be made—as if they were of any reasonable value. If the mountain must be cut to pieces for commercial gain, a small sacrifice would preserve something of its outline and the camp, by tunnelling out the rock in galleries."

"Big Ben."

"Big Ben" at Westminster is having his faces cleaned, and the spectacle of two men, apparently midgets from the ground level, dangling in a cradle, has excited much public interest. The famous clock is said to have been named after Sir Benjamin Hall, Commissioner of Works at the time of its erection in the middle of the eighteenth century. The great bell is cracked, a fact that is painfully apparent to many people's ears, and its immediate predecessor is also cracked. The "clock" tower in which it is housed is 318ft. high. The clock itself was designed by the late Lord Grimthorpe, and built by Mr. F. Dent, whose successors, Messrs. E. Dent and Co., still look after it. Its greatest error in time has not exceeded four seconds.

"King Edward Place."

The scheme outlined in the "Daily News" of August 12th for a national memorial to the late King at Victoria Station has been received with considerable favour. Briefly the scheme is to sweep away the block of buildings which stands between the new station buildings and the main road. Of this block the District Railway station forms a part. The site thus laid bare is to be laid out as a garden and as a fine approach, Victoria Station being the one at which most of the foreign royalties arrive and depart. If private advices are to be trusted, there is some scheme in the air for pulling down the present block and rebuilding one much higher, and if this is ever done there is little doubt that this corner of London, from an artistic point of view, will be permanently ruined.

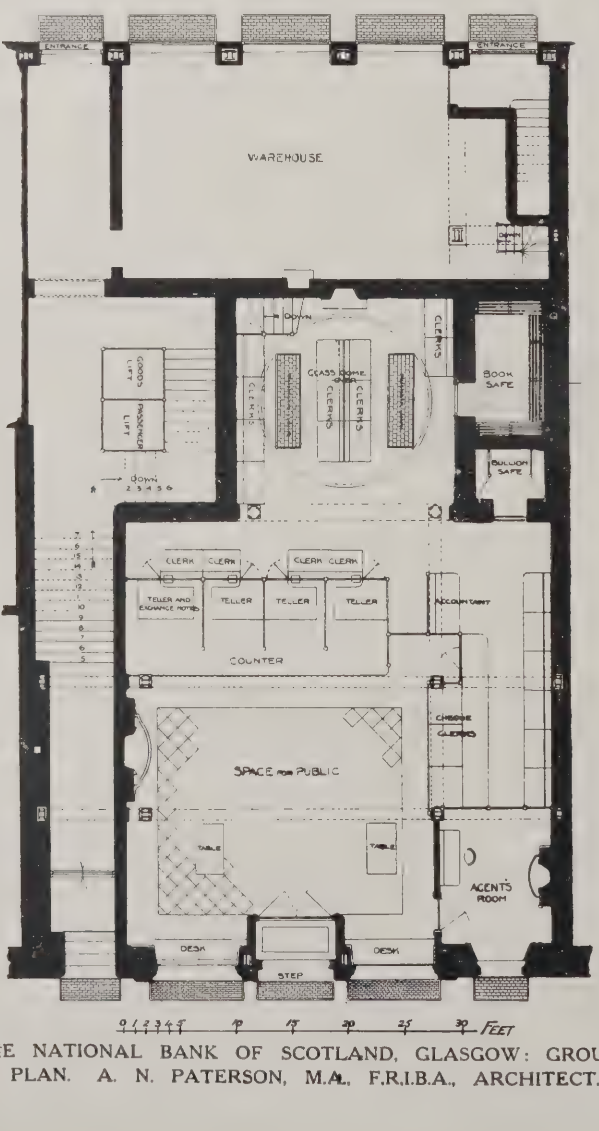
Street Improvements in the City of London.

The City of London engineer, in his annual report, refers to the various street widening works of the City, now in hand. In regard to the widening of Fleet Street he says that the London County Council have agreed to contribute £200,000, half of the net cost of setting back the 28 buildings still remaining. Progress had been made in settling claims for the widening of Bishopsgate Street Without. Arrangements had been made for removing the projecting corner of Bishopsgate Street Within, so that at its junction with Leadenhall Street the thoroughfare could be widened to 33 feet. The building line of Cornhill at that spot would also be straightened. The London County Council had agreed to contribute towards the cost. The widening of Tudor Street, begun in 1882, was continued, and steps were being taken to widen Kinghorn Street. The widening of the eastern end of Gresham Street between Basinghall Street and Coleman Street, and of the eastern end of Leadenhall Street, was under consideration. Notices had been served to effect a widening of Wood Street. The four ancient gates enclosing the parish of St. Bartholomew-the-Great had been removed, and compensation had been paid to the parochial authorities. The gates dividing St. Michael's Alley and George Yard, Cornhill, had also been removed.

The National Bank of Scotland, Glasgow.

The new building for the National Bank of Scotland, which has been erected as its principal branch office in Glasgow, occupies a site with a frontage of 46ft. on the west side of St. Enoch Square, and a depth of 83ft. 6in. to a narrow lane at the back. The ground floor and main portion of the basement are apportioned to the bank, and the remainder of the premises is occupied as offices and warehouses. These have separate entrances from front and back, with electric lifts for passengers and goods in the well of the main staircase, while, to meet the requirements of the Glasgow Buildings Act, there is in addition an emergency stair from all floors delivering on to the lane at the north-west angle. The whole of the building, with the exception of the main front, is steel-framed on a concrete foundation, which is spread over the whole site and reinforced with steel rods and wire mesh. Messrs. Redpath, Brown, and Co., Ltd., of Glasgow, were responsible for the steel construction and for the reinforced concrete in the foundations. All columns and girders are cased and hearted with concrete throughout the interior, and externally over the back elevation and central well with white glazed bricks, continued also between the columns from floors to sill-level of windows, the whole of the remaining space being filled in with glass in steel casements. The floors throughout are of concrete tubes on steel joists.

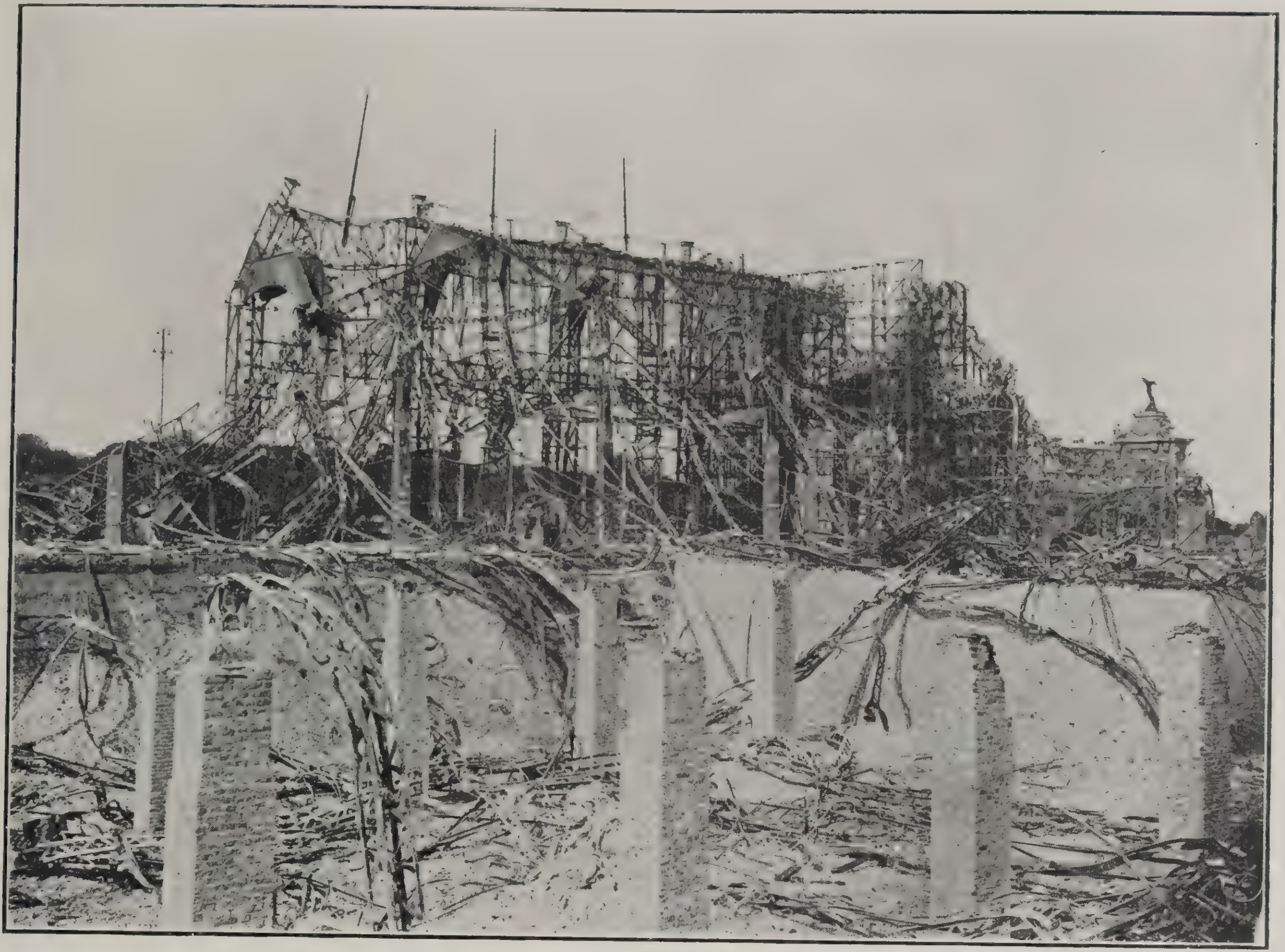
The sculptured figures on the façade are designed to symbolise the characteristics of banking, "Prudence" and "Adventure"; and its activities, "Commerce" and "Security," and are placed so as to emphasise the portion of the building occupied by the bank. With like object the ground floor is faced with pinkish-red granite, honed or dull surface, with lettering, armorial bearings, and ornamental studs or pateræ of cast bronze. The remainder of the façade is of white freestone. Roofs are covered with Coniston green slates, which were supplied by Messrs. The Buttermere Slate Co., of Keswick. The walls of the banking-hall are panelled in white oak, waxed and dull-polished, banded with mahogany inlay to link them up with the fittings, which, according to usage, are also of mahogany. Over the chimneypiece, of green Elterwater stone, with steel interior grate, the bank's coat-of-arms is set forth in inlay, while the pediment is surmounted by amorini, typifying "Cash" and "Credit," modelled, like the stone figures on the façade, by Miss Archibald. The tone of the oak lining is carried around the walls of the clerking space under the dome in panels of light drab dull-surface tiles, with enclosing bands of red to match the mahogany. The floor of the public space is in large squares of black and white marble mosaic, with a border of similar tones, and red, surmounted by a surbase, under the panelling and fittings, of the green stone employed on the chimney-piece. The walls are finished in "Duresco" of a quiet green tone, with ceiling and columns in ivory white. Bronze casements are fitted in the banking-hall, these having been supplied by Messrs. J. W. Singer and Sons, of Frome, who also supplied gates for the building. Electric-light fittings were supplied by the Artificers' Guild, Ltd., of London. The agents' room is panelled in oak, and has a barrel-vaulted ceiling with modelled enrichments in bands, carried out, like that in the banking-hall, by Mr. Thomas Beattie, of Edinburgh. The architect of the building was Mr. Alexander N. Paterson, M.A., F.R.I.B.A., of Glasgow. The general contractors were: Mason-work, Messrs. Alex. Muir and Sons; joiner-work, Messrs. Wm. McCall and Sons; both of Glasgow.



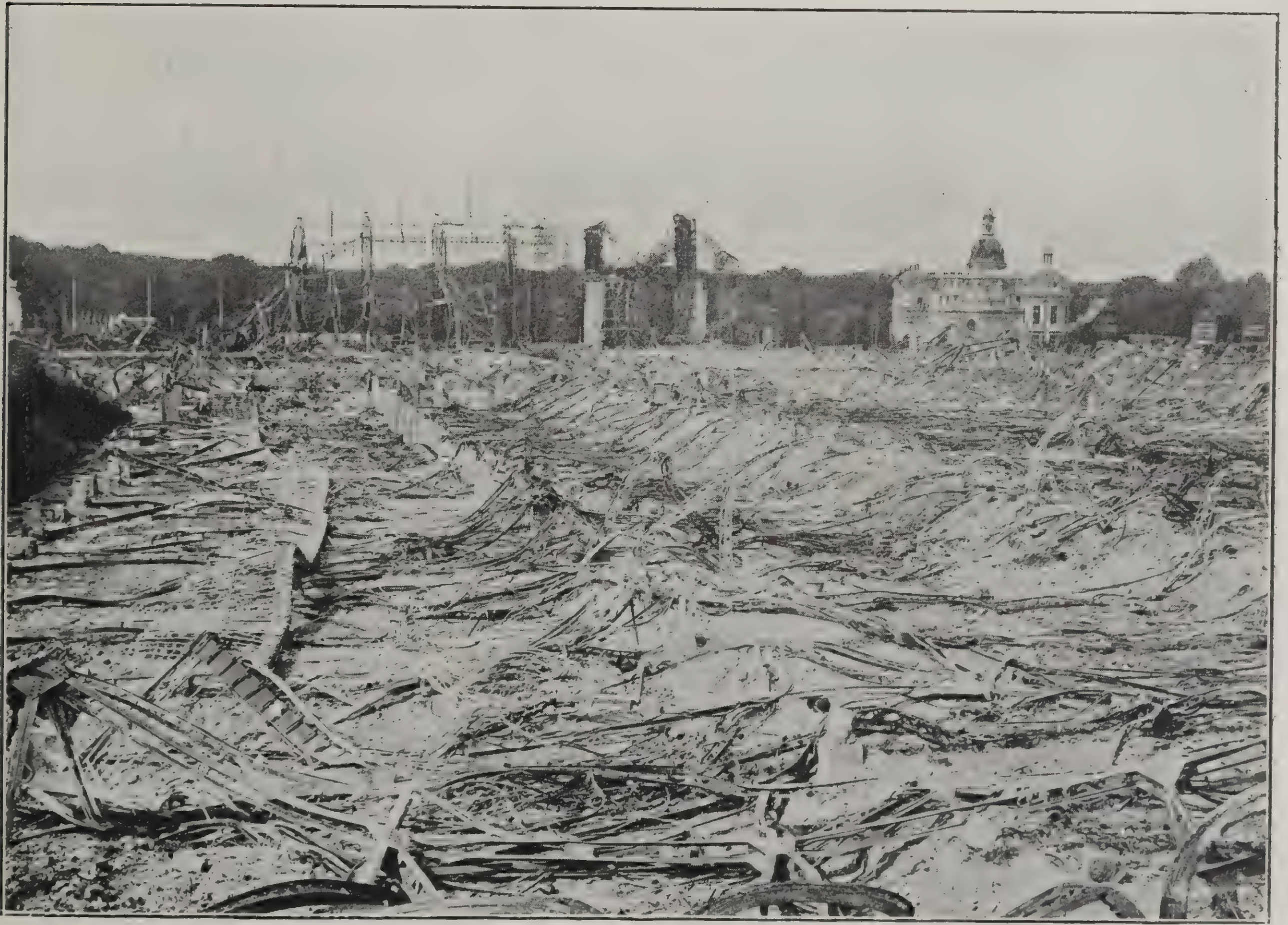
THE NATIONAL BANK OF SCOTLAND, GLASGOW: GROUND PLAN. A. N. PATERSON, M.A., F.R.I.B.A., ARCHITECT.

The British Building at Brussels Exhibition.

The building destroyed in the fire chronicled last week, compared favourably with those erected by other nations. It consisted of a main gallery 510ft. long and 98ft. wide, with four narrower parallel galleries, three on one side and one on the other. The main gallery was a steel frame building, the stanchions being encased in plaster Corinthian columns, and the roof was concealed by a pale blue velarium. The entrance from the main Belgian gallery was through a triumphal arch, flanked with groups of coupled columns, all in plaster, and the exit at the other end was by a spacious double staircase on to the bridge crossing the Avenue du Solbosch, the top of which was covered with a colonnade and bore a plaster cast of Mr. Thomas Brock's statue of Victory. The supports in the side galleries were similarly encased in plaster. The cabinets and show cases were uniform in style, and of nut-brown colour. Mr. G. C. Churchward was the architect for the interior. In the main hall the only objects of artistic character were examples of lace, modern pottery, bookbinding, etc.; but in the rooms at the east row of columns were many old works of art of considerable value. The exhibits sent from the Victoria and Albert Museum were merely electro reproductions of important originals belonging to the King, various colleges of Oxford and Cambridge, South Kensington itself, and other institutions. If there were few specimens of porcelain of the highest quality, yet several fine pieces were in the collection, notably those contributed by Lord Swaythling, Lady Stern, Mrs. Hansard, and Miss Lilian Colston. Of late years Old English pottery has been much in favour with connoisseurs, who will regret the loss of so many admirable "Toby jugs," "Drunken Parsons," "Country Gentlemen," "Jolly Good Fellows," and other quaint effigies of early Staffordshire manufacture, lent by Mr. J. A. Turner. The old furniture, arranged chronologically, comprised attractive pieces of sixteenth, seventeenth, and eighteenth century caraftsmanship. Of more recent date was the Arras tapestry, woven on the high warp loom by Messrs. Morris and Co. after a design, "The Passing of Venus," by Sir E. Burne-Jones. The rumour that pictures were destroyed was baseless. They are housed far from the main exhibition in the Palais du Cinquantenaire.



The Remains of the Belgian Grand Hall, where the fire started.



The ruins of the British Building, looking from the French section towards the ruins of the Belgian Grand Hall.

THE FIRE AT THE BRUSSELS EXHIBITION.

FOREIGN NOTES.

The administration of the Egyptian State Railways have instituted a competition for a new passenger station at Alexandria. Premiums of £E400, £E200, and £E100, will be awarded to the authors of the three selected designs. Enquiries should be addressed to the Administration Offices, at Cairo.

* * *

The Municipality of Valence will shortly apply for tenders for the construction of a public promenade on the sea front. The official project includes the construction of new streets, arrangement of squares, drainage and lighting.

* * *

In the competition for the Central Police Station and Criminal Court Building, Milwaukee, the design of Mr. Albert Randolph Ross, of New York, was placed first. In the competition for the Delgado Museum of Art, New Orleans, the design of Messrs. Lebenbaum and Marx, of Chicago, was accepted.

* * *

Plans, prepared by the Supervising Architect of the Treasury Department, for the Bureau of Engraving and Printing at Washington, have been approved by the Commission of Fine Arts. The new building will be 850 feet long.

* * *

Mr. Charles Niehaus, sculptor, of New York, has finished the model of the statue to Paul Jones, for which the U.S. Government voted a sum of £6,000. The work is to be cast in bronze, and will be erected at the entrance to the Potomac Park at Washington. The unveiling will take place next spring.

* * *

At the Académie des Beaux Arts the Prix Bailly (1,500 francs) has been awarded to M. Defrasse, architect, for his constructed works, and particularly for the Branch of the Bank of France at Orleans. M. Deverin, architect, has been awarded the Prix Rouyer of 1,000 francs.

* * *

M. L. Bachellery, architect-expert to the Tribunal of first instance of the Department of the Seine, and Hon. Controller-in-Chief of Public Buildings and National Palaces to the Minister of Public Instruction and Fine Arts, died recently at St. Germains.

* * *

The new bronze doors for the Capitol at Washington, the work of the sculptor Louis Amateis, are completed and will shortly be erected at the west entrance. The two doors are each 6ft. 9ins. wide by 13ft. high. Each is divided into four panels adorned with allegorical figures representing "Justice," "Science," "Art," "Agriculture," etc. At each corner of these panels is a medallion portrait of an American celebrity. The lintel over the doors has a decoration symbolical of the Apotheosis of the United States. On each side of this motif are medallions with portraits of Thomas Jefferson and Benjamin Franklin.

* * *

The widening of Forty-second Avenue, New York City, which work has for a long time remained in a state of chaos, is once more proceeding. When finished the street will be widened about 14ft. 6in., and will then have something of the appearance of Fifth Avenue, recently enlarged. Much work remains in setting back buildings to the new line, and among others the stone portico and court of the Manhattan Hotel is to have a new entrance, for which Mr. H. J. Hardenburgh has prepared plans. The Kinckerbocker Hotel, the West Presbyterian Church, and the Old Harmony Hall will also show important changes.

NEWS IN BRIEF.

The Metropolitan Water Board have decided to solve the problem of the future supply of water to London by an extension of their Staines Reservoir scheme in the Wraysbury district, close to Windsor, instead of going to Wales, as had been suggested. This is a matter which will probably affect seriously the whole neighbourhood adjoining Windsor Castle, inasmuch as the Board's proposals involve an engineering undertaking of great magnitude. It is understood that the Board will make application for the necessary powers in the next session of Parliament, and the owners and occupiers of land which will affected have already been interviewed on the subject. It is stated that the Board's whole scheme is eventually to cost six millions. We presume this is an alternative scheme to that proposed a year or two ago for the Newbury district. The strata there, we understand, were not found suitable for the formation of the large reservoir lake.

* * *

A correspondent of the "Morning Leader" appeals to the town-planners to refuse to recognise the bathless house—"where no provision is made for the personal cleanliness of the tenant." Which reminds us that landlords in South Africa are legally forced to provide baths in their houses.

* * *

The annual repair of Rotten Row, Hyde Park, has this year raised the usual question about the origin of its name. "The Daily Graphic" can get no further than the "rottenness" of the soil laid down on the famous track; but while interesting, this deduction is not conclusive. The row has a foundation of bricks—now being broken before laying—with a covering of two inches of Thames sand.

* * *

The prehistoric camp on the summit of Penmaenmawr, North Wales, is likely to be destroyed by quarrying operations carried on under a lease granted not later than 1899. "The Westminster Gazette" deplores the lease as a blunder that may lead to the destruction of what is believed was one of the strongest refuges of the ancient Britons, a place of impregnable strength, and hopes that something may yet be done to save what remains.

* * *

The arbitration proceedings over the cost of the site of the new Post Office at Dover have been concluded. The claimants asked for the site £11,189 with a further sum of £1,500 for loss of use during the three years since the Post Office had intimated its intention of taking the site. For the Postmaster-General valuations were put in of £3,220 and £3,900. The arbitrator, Mr. Leslie R. Vigers, reserved his award.

* * *

Lord Selborne complimented the Commissioners who chose the site for the new Union Government Buildings at Pretoria. The structure will be erected on the slope of a hill about a mile north of the centre of the town, and will give a dignified impression to the city on entering it through the Fountains Valley. The subsoil is rock. The buildings will be faced with local stone of a pinky-white colour, and the surroundings will be laid out in formal style with terraces and statuary. Messrs. Herbert Baker and Masey are the architects.

* * *

Following close on the decision to erect a beet sugar factory at Maldon, Essex, comes the news that a similar factory is to be erected at Kidderminster, capable of dealing with 30,000 tons of beet in a season. A site of 14 acres has been taken at Foley Park, and plans for the new buildings are being prepared.

* * *

The National Trust appeals for subscriptions under their scheme for the preservation of Borrowdale—which is to take the character of a memorial to the late King Edward VII. The President of the Trust, Princess Louise, has decided on the purchase of Grange Fell, a superb view-point, and there are several acres of the Fell that can be added to the memorial at a cost of £7 7s. per acre if subscriptions can be raised. About £750 remains to be raised to complete the purchase.

* * *

The Postmaster-General will, on September 12, formally hand over to the association which owns the Benenden Sanatorium, Kent, a pavilion of 20 beds which has been erected and equipped by Post Office subscribers at a cost of £900. Like the other buildings of the Sanatorium, this pavilion is constructed on the Frazzi system.

* * *

The Durham and Northumberland Archæological and Architectural Society will hold their fourth meeting this year tomorrow, August 25, at Chester-le-Street, Lumley Castle, and Finchale Abbey. Members assemble at 10 a.m. at the Infirmary Gates, near the Railway Station Durham, and drive thence to Chester-le-Street.

* * *

The late Mr. Henry Spalding F.R.I.B.A., of 38, Belsize Avenue, Hampstead, N.W., and of 36, King Street Cheapside, E.C., architect and surveyor left estate of the gross value of £15,075, o which the net personality has been sworn at £4,243. The late Mr. John Henr James, builder, of Braemar Avenue, Woo Green, N., left estate of the value o £125,632, of which the personality has bee sworn at £392.

* * *

On a stone coffin unearthed recently a Berwick there has been discovered th letter "E" on one side and the Roma numeral I on the other. This is believe to give support to the theory advanced b the vicar of St. Mary, Berwick-on-Twee that the coffin had been that of Edward before the removal of his remains to Wes minster.

* * *

Speaking in London on August 17, at th dinner of the Billposters' Association, M W. H. Lever, M.P., suggested that the should introduce architectural designs i their hoardings, and he offered four priz to be competed for next year of £50, £2 £15, and £10 respectively for the best bil posting stations constructed from an arch tectural point of view.

* * *

The Local Government Board has d cided to hold the following inquiries in proposed expenditure by public bodies :- *Sewerage and Sewage Disposal Wor and Plant.*—Abertillery Urban Distri Council, £10,673 (August 24); Ebbw Va Urban District Council, £28,850 (Augu 23); Manchester City Council, £1,1 (August 23). *Street Improvements, etc.* Surbiton Urban District Council, £3,7

August 21); Leeds City Council, £1,941 August 25); Manchester City Council, 7,600 (August 23); Southampton Borough ouncil, £11,395 (August 26); Caversham rban District Council, £1,660 (August 5). *Electric Lighting.*—Bury St. Edunds Borough Council, £1,465 (August), and Peterborough City Council, £2,10 August 23). *Various.* — Bolton-upon-earne Urban District Council, £9,475 for orking-class dwellings (August 24); Wath nd Bolton Gas Board, £17,296 for gas ndertaking (August 25); Coventry City ouncil, £1,282 for fire and police alarms August 25); Leeds City Council, £2,600 r gas works purposes, and £1,674 for fireen's dwellings (August 25).

* * *

St. Chad's Well, a once famous chalyeate spring at King's Cross, London, hose waters were famed for the treatment f dropsy, scrofula, and liver complaints, as just been rediscovered during the conruction of the foundations of a new buildg in Gray's Inn, the workmen coming cross an old vault which formed part of e well. The spring is still in existence nd it has been suggested that samples of e water should be taken and analysed to scertain whether it retains its ancient urative properties and whether it is commercially possible to utilise it.

* * *

Mr. Moisant, the hero of the Paris to ondon aeroplane flight on Wednesday nd Thursday of last week, is an architect f Chicago, where he was born 35 years go. He is of French extraction. It is oteworthy to relate that he went to the ontinent for a holiday, had only had his eroplane a month, and made six previous ights, and prior to this particular record ight had not previously traversed the ountry between Paris and Calais or visited ngland.

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Preparations for the erection of the naonal memorial to the late Duke of Devonire are in a forward state, the contracrs, Messrs. Mowlem and Co., having ractically completed the solid foundation concrete and brick on which the superructure will rest. The site selected is at e Whitehall end of the Horse Guards venue. On the foundation now being id a massive pedestal of Derbyshire stone to be erected, and upon this the statue ill be placed. It is the work of Mr. Herert Hampton, and represents the late uke in his robes as a Knight of the arter.

* * *

The Chapel of the Ascension, Hyde ark Place, Bayswater Road, which was uilt by the late Mr. Russell Gurney as place for rest and meditation, will ortly be completed. The chapel buildg was designed by Mr. Herbert P. orne, and for the last ten years Mr. rederic Shields has been engaged on the ecorative scheme, paintings, depicting e story of the Divine Dispensation—atriarchal, Mosaic, and Christian. This heme he is now finishing.

* * *

The report of the Leeds Fireclay Co. ows that the working profit for the year nding June 30 was £12,829. After proiding debenture interest (£12,000) the dverse balance of last year (£62) is iped out, and the sum of £767 carried rward. The directors report that the ales exhibit a small increase over those f the previous year, but that there is still ttle improvement in the demand for uilding material throughout the country.

CORRESPONDENCE.

Paris and London.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

Sir,—I am obliged by the extract you give in your last week's issue from my article in the *Observer*, wherein I make a few comparisons between London and Paris architecture and municipal administration.

There is one question, however, which I did not raise, and that is, comparing the general lightness of Parisian street architecture with London façades, are we not getting too columnar?

Columns are splendid in their way—useful and adorning—but when one sees repetition after repetition of huge columns stuck on to the façades of small fronted premises, carrying nothing, and taking the place of what might have been more lighting area, one detects the mistake of applying to many buildings attributes only suitable for a few. This rage for columns entails also considerable unnecessary expense in building; it further accentuates the fact that directly an architect successfully adopts a feature—an appropriate feature—in a building, he is at once copied by men who have quite failed to grasp the distinction between what is and what is not suitable.

I should be sorry to see columnar architecture abandoned, but I think the sensible line should be drawn in this as in other matters.

I am, Sir,
Your obedient servant,
WM. WOODWARD.

13, Southampton Street,
Strand.

BOOKS.

Quantities.

The Quantities of a Detached Residence taken off, measured, and billed. By George Stephenson. Stanley Paul and Co.

The author apparently intends by this book to give a beginner in quantity-taking an object-lesson by giving the whole quantities and specification for a small house, of which the drawings are given on a sheet inserted in a pocket at the end of the book. The idea is a good one, but if the book is intended to open the subject to a beginner, the author seems quite to have forgotten that the first thing necessary was to explain clearly the system or principle on which his double columns of dimensions are arranged. As far as we can discover, there is not a word of explanation as to this, and in consequence the book would be no use to anyone who had not already some acquaintance with the system of quantity-surveying. Perhaps it was not intended for the actual beginner, but it might easily have been made serviceable to him by an explanation of the system, which could have been given in half a page. Some of the sentences of explanation which are given are expressed in very obscure language. We think the author understands his subject, but he does not seem to have the faculty of explaining it to others.

Roman Renaissance Tombs.

The Sculptured Tombs of the Fifteenth Century Rome; with chapters on the previous centuries from 1100. By Gerald S. Davies, M.A. London: John Murray; 1910. 21s.

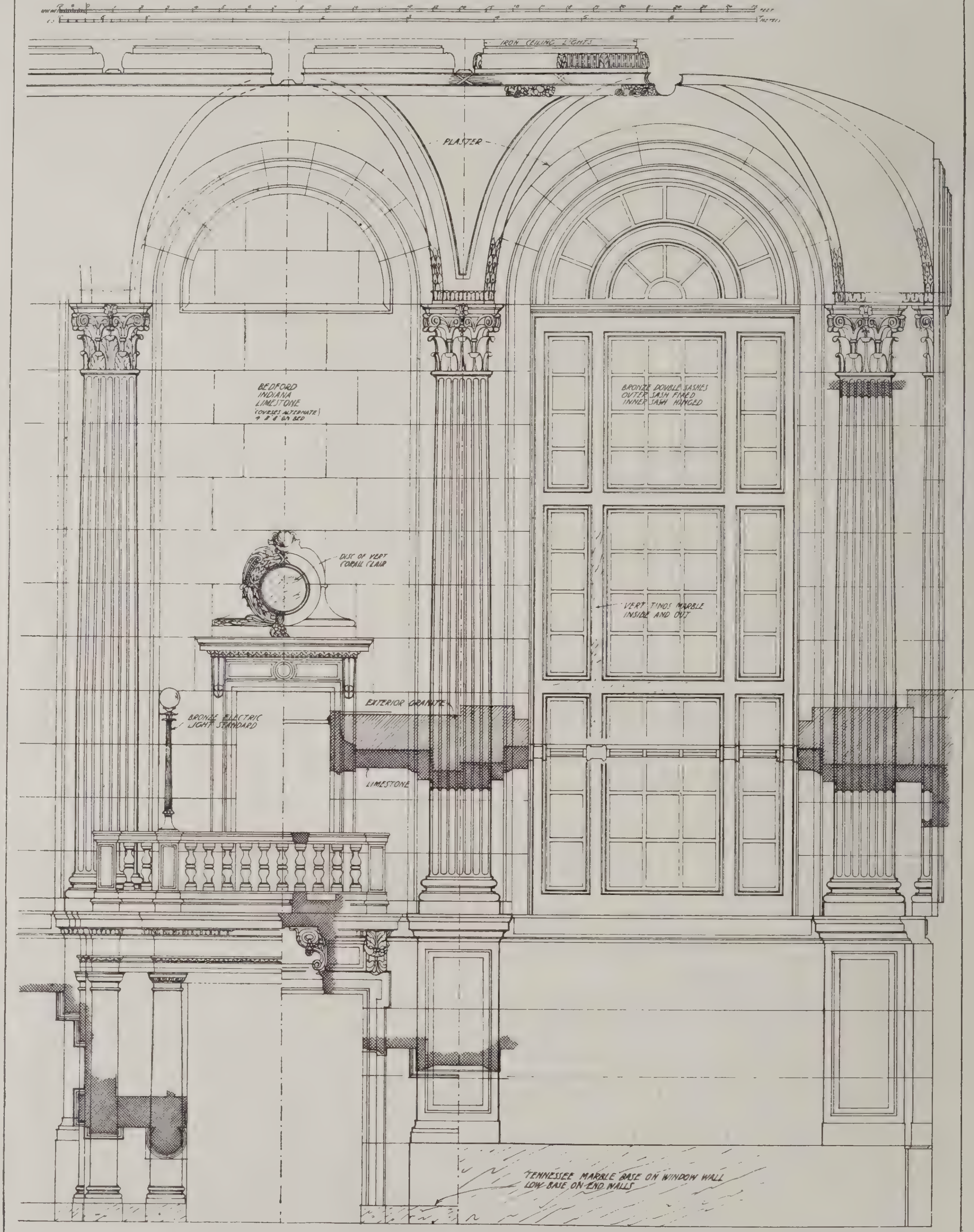
The object of this fine volume is to investigate the history and illustrate the art of the tombs of the fifteenth century which survive in the churches of Rome, and which the author regards, probably with reason, as being unequalled for historical interest by those of any other town in Italy, though he declines to claim for them the same high place in regard to purely artistic merit, in which Florence can show tombs superior to any in Rome. That there were many other such tombs in Rome which have perished without leaving a relic is only too probable; and it is affirmed that Bramante was one sinner in this respect, and removed existing tombs wholesale in making his preparations and clearing the ground for the commencement of St. Peter's. It is not at all improbable. Great architects, starting on a great work, have usually been rather masterful characters, and more concerned with their present ambitions than with relics of the past. And in those days there was by no means such a spirit of regard for existing monuments as there is in modern times.

The monuments illustrated in the book have, of course, a great deal of architectural as well as sculptural interest. All of them have an architectural framework, sometimes of considerable size and importance, the decorative details of which furnish a kind of résumé of the architectural taste of the fifteenth century of the Renaissance; the author writes always "Renascence," but we see no reason for altering a word which, in spite of its French form, has been generally accepted and has passed into the English language. They may be divided into the class which consists of the sarcophagus and recumbent figure, on an architectural base, and those in which a sculptured figure, either upright or recumbent, on a sarcophagus, is enclosed in an architectural framework of pilasters or columns and an entablature. Occasionally, as in the tomb of Alanus Cetivus in S. Prassede, the flanking architecture is a solid projecting pier with statues in niches, and sculptured panels, crowned by a deep coffered arch. A method of finish to the top of the monument which recurs in several instances is a kind of pediment in a segmental curve, filled in with a radiating fluting, a kind of ornament which suggests rather the period of Wren in England than that of the fifteenth century in Italy.

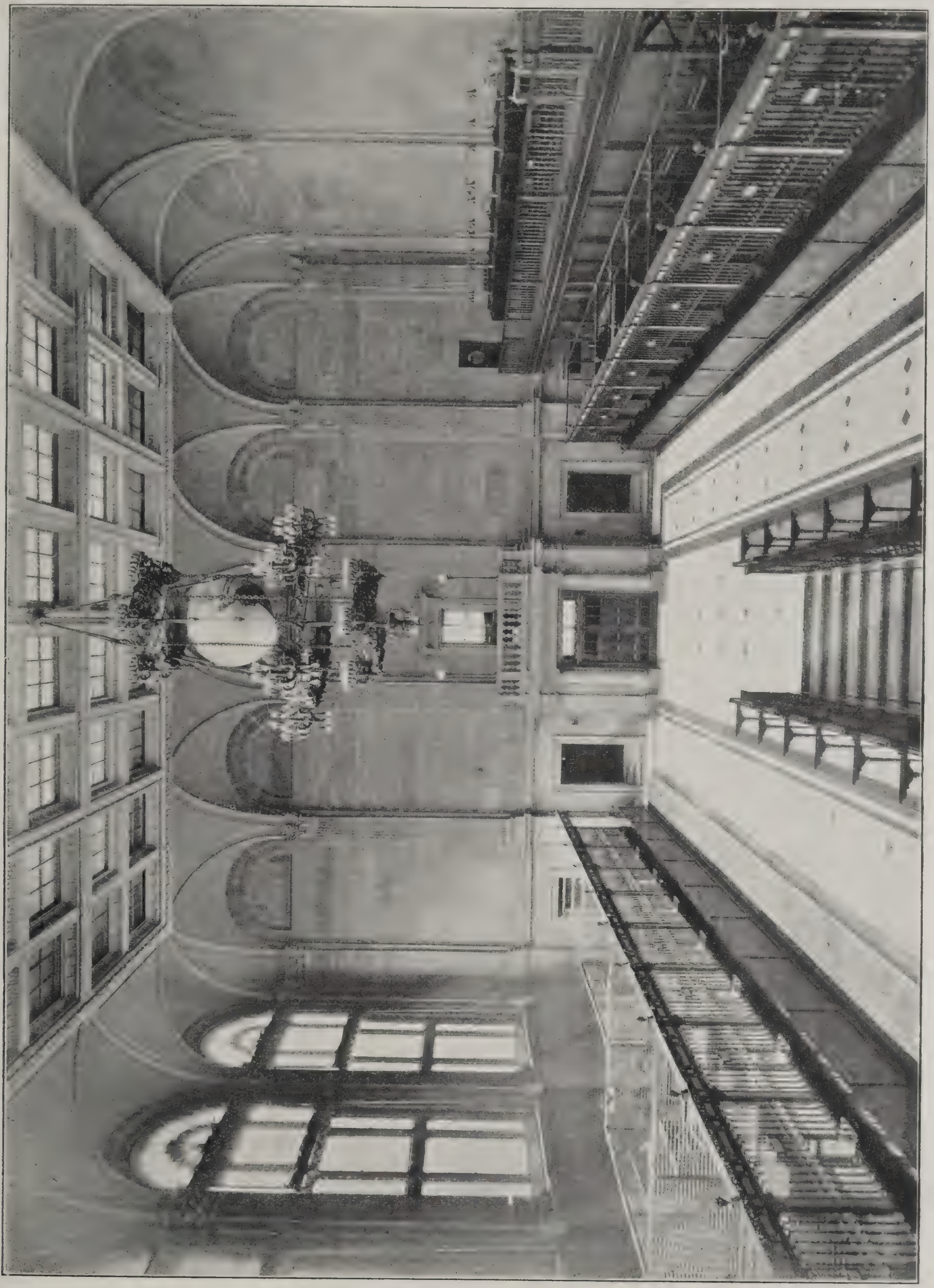
A great deal of the book is occupied with enquiries into the history of various eminent men of the period, Popes and others, and it contains a great deal of information of this kind, which is the result obviously of a good deal of study of the documents and history of the period. With this we are less concerned; but the collection of photographs from the tombs is in itself of value, and shows how much variety there was in the design and treatment of such works. The author has some good observations on the nature of the distinction between the work of the fifteenth and the sixteenth century sculptors in productions of this kind. The former were endeavouring to find their expression; the men of the sixteenth century had inherited a respect for certain forms, and found these ready-made to their hand. "It counted for nothing that the motives often came from the types and period of Roman art which, themselves the echo of a nobler day and nobler art, had long outlived their vitality, and, when taken over into modern work, expressed no idea either in heathen or in Christian art. They were Roman; it was enough. The griffons on the tomb of a Cardinal, that vomited graceful traceries or lashed their tails into unexpected but exquisite acanthi, were Roman; it was enough." It is the spirit that Browning has described with such truth and humour in the poem which tells how the bishop ordered his tomb in St. Praxed's church.

The author has added to the practical value of a most interesting book by giving an alphabetical list of the churches in which monuments of importance are to be found.

THE FIRST NATIONAL BANK OF BOSTON : INTERIOR DETAIL.


IRON CEILING LIGHTS
PLASTER
BEDFORD INDIANA LIMESTONE (COURSES ALTERNATE) 4" & 6" ON BED
BRONZE DOUBLE SASHES OUTER SASH FIXED INNER SASH HINGED
DISC OF VERT CORAIL CLAIR
VERT TINOS MARBLE INSIDE AND OUT
EXTERIOR GRANITE
BRONZE ELECTRIC LIGHT STANDARD
LIMESTONE
TENNESSEE MARBLE BASE ON WINDOW WALL LOW BASE ON END WALLS

DRAWN BY EDWIN GUNN, A.R.I.B.A.



This is another good example of current architecture in the United States, and the detail of the scheme is well worth study. The walling is of Bedford (Indiana) limestone, and the ceiling is plaster. The counter screens are of bronze and marble, and the chandelier is a combination of carved wood and "stuff."

INTERIOR VIEW OF THE FIRST NATIONAL BANK, BOSTON, MASS., U.S.A., SHOWING WALL BAYS.
R. CLIPSTON STURGIS, F.A.I.A., ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

SURVEYING: THEORY AND PRACTICE.*

By ARTHUR BOWES, Assoc.M.Inst.C.E.

When the question of appointing a surveyor or engineer engages the attention of the members of a local authority it is invariably urged by someone that the successful candidate must be "a practical man," whatever that may mean. If he be but "practical" all the other virtues will be accorded him. No one has ever been known to suggest that the post should be given to a "theoretical man." Indeed, whenever the latter term is used it is usually held to convey at least a tinge of contempt and distrust.

Now, is there any just cause for this exaltation of the practical at the expense of the theoretical, or is it only another instance of the government of opinion by a popular cant term—an appeal to blind prejudice? Prejudice, as we are aware, plays a far more important part in the world than does reason or judgment. It was prejudice which made our forefathers object to the introduction of railways and gas-lighting, which declared the penny post to be a "wild and visionary project," and the Suez Canal a "futile and impossible idea." If there is anything more than a prejudice behind this preference for the "practical" man, let us try to find out in what it consists.

The "Practical Man."

When analysed to the bottom the term "practical man" appears to mean one who has a familiarity with material things rather than with books; who can work at some trade, and is not afraid of dirtying his hands; or, in its best aspects, it refers to a man who can get a job done in a workmanlike manner without spending too much money. Mainly, however, the essence of the popular meaning of the term lies in the idea that the "practical man" does not depend on book knowledge, while the theoretical man does.

Within certain limits, I think all of us will agree that knowledge obtained by personal contact with realities is to be preferred before that obtained at second hand from the reading of books, and there are certain fields of activity where such a practical knowledge is an absolute necessity. A man may study the theory of billiard playing, or swimming, or even stone-breaking, until he is grey, but without a practical experience of those arts he will be no more efficient at the end than when he started. At the same time, such knowledge as can be acquired by practical experience forms only a small part of the equipment of an efficient and intelligent man, and the so-called "practical man" has a few weak spots in his constitution. Take, for example, his ordinary dislike for knowledge obtained from a book. This is a mere foolish prejudice, handed down from the days of his mediæval ancestors, when books were not to be had. It is recorded of James Brindley that in the fourth year of his apprenticeship to a Macclesfield millwright he set off one Saturday night and walked twenty-five miles to a mill on the Irk at Manchester to look at some new machinery, and walked back again in time to resume his work on Monday morning. However commendable such an action might be in those days, I think that if Brindley were living to-day he would find his information in a less laborious way. He would either give a look in at the nearest free library, or, more probably, turn over the back numbers of his favourite weekly trade paper, and get the information he wanted with his toes on his own fender.

Rule of Thumb.

And yet there are hundreds of working men to-day who would rather trust the mere verbal, offhand opinion of a brother workman than they would the same advice given in print by half a dozen experts who had taken the trouble to put on record not only their own experience, but the best advice that could be collected from the written opinions of others. Such advice, if conveyed in black and white print, is to them merely "book knowledge," or theory. If conveyed in a free and easy conversation with a mate it becomes "practical" knowledge.

Perhaps it is a remnant of the same kind of fetish worship which leads to the habit of visiting works rather than reading descriptions of them and examining photographs and plans. Visits to engineering and municipal works are very excellent things in some ways, but as a means of acquiring a full knowledge of, say, the Forth Bridge or the Eiffel Tower a few hours spent in inspecting these works would not be half so effective as a perusal of the special issues of the engineering papers, with their multitude of illustrations and exact figures.

The practical man is apt to be too conservative in his notions. He lacks imagination; what has been good enough for him, and for his father before him, should be good enough for you. He lacks that vision which is "the art of seeing things invisible," and from the fact of his energies having been so much concerned with hard facts as to stunt his development on the speculative and poetical side of life he is often narrow-minded. It is such as he who, when called to ventilate a quiet little country church, amid a peaceful surrounding of trees and cornfields, blasts its beauty by surmounting the roof with hideous torpedo-shaped monstrosities of sheet iron. I suppose it was a town council of "practical men" who, not many years ago, wanted to pull down that noble West Gate which spans the main street of Canterbury in order that Wombwell's Wild Beast Show might enter the town. Heaven be thanked that by the casting vote of the humanitarian mayor the gate was saved.

When he attempts to explain some of the simple phenomena of nature the "practical man," from his want of training in logical thought, is sometimes a little at sea. I remember a few years ago one of the trade journals resuscitated the old problem as to why the top of a wheel moves quicker than the bottom, and the reason given, with all seriousness, was that "the upper spokes revolved with greater rapidity than the bottom."

When the "practical man" is called upon to design structures requiring some knowledge of stresses and strains he is occasionally thrown into considerable difficulties, for innate genius and rule of thumb are not always reliable guides in such matters. The less a man knows, the more he will guess at, and it follows that some very wild guesses are formulated, and sometimes materialised in brick and stone and iron. Of two actual designs for the guide framing of a gas-holder, both prepared by presumably "practical men," one would have weighed 128 tons, and the other 712 tons. A little theory would surely have formed a useful blend here.

Two Kinds of Theorists.

There are two kinds of theorists: first, the one whom the ordinary man in the street has in mind when he condemns the theoretical man—that is to say, the one who attempts to square every action by mathematical rule and formula—while the second class of theoretical men are those great leaders of scientific thought without whose efforts humanity would make little progress in knowledge or in social life. Science depends on the exact or mathematical statement of our knowledge of phenomena, and it is the delight of the theorist to construct a formula which shall correctly describe the sequence and correspondence of the phenomena of the universe. Such names as Newton, Faraday, Kelvin, and Clerk Maxwell are spoken of as theorists, but with a very different inflection of voice and meaning from that used in speaking of our hypothetical, non-practical candidate for a municipal post. There is much truth in the ordinary distrust of the theoretical man - if he allows his theoretical proclivities to run away with him, and has not sufficient practical knowledge to keep them in check. The "White Knight" in "Alice Through the Looking Glass" was a theorist pure and simple. So was the young man from college who, when the locomotive was stuck in the snow and short of water, shovelled snow down the smoke-stack.

One of the besetting weaknesses of the theoretical man is his assumption of a superlative exactness in matters which do not admit of a nicety of mathematical definition. A wire-edged precision binds all his thoughts and notions, however trivial. He is like the witness who stated that the prisoner at the bar said, "My dear Thomas—or words to that effect." In Sir Thomas More's "Utopia" we find that the ideal family was to be restricted to a maximum of sixteen and a minimum of ten—a very pleasant theory, but not sufficiently mindful of the human factor. In my younger days one well-known text-book on constructional ironwork worked out many calculations for riveted joints to the fourth place of decimals of an inch. Rankine, our mathematical high-priest, in dealing with certain hydraulic questions, gives a table of heights in feet due to certain velocities, and is careful to say that they are calculated for latitude 54¾deg. An impressive example of the super-exact formula is one recently published—to be sure, it was made in Germany—for calculating the heights of chimney stacks. I will not inflict it upon you, but content myself by saying that it fills a line of rather small print three and a half inches long.

The Fetish of Mathematics.

The absurdity of attempting to carry mathematical statements to such a pitch of refinement arises from two considerations. First, we do not know all the necessary factors with anything like accuracy, and a wrong assumption in any one factor vitiates the whole calculation. It is like trying to make mince-pies when we are not quite sure whether a certain white powder is sugar or carbonate of soda. The result is doubtful—it may come out right or it may not. Secondly, too much reliance is placed on the value of constants which have been copied year after year from one text-book to another, and in the first instance may have been based on very inadequate experiments. For example, the formulæ for the strength of wooden columns were until fairly recently copied from text-book to text-book, with, perhaps, some variation in the mode of statement, but all based on experiments made in 1840 on seven pieces of wood cut from one plank, the largest piece used in the experiments being about two inches square and five feet long. If a few sticks from another plank had been used, how would the constant have turned out?

(To be concluded.)

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*A paper read at Manchester on August 10, before the Institution of Municipal Engineers.

COMPETITIONS.

Arthur Hill Memorial Baths, Reading.

In the limited competition for the above, the design of Mr. C. B. Willcocks, of Caversham, Oxon, has been placed first by the assessor, and selected. The accommodation includes, on the ground floor a heated swimming bath with a water area of 30ft. by 90ft., with 50 dressing boxes, and galleries over, superintendent's room, entrance hall, etc. On the first floor six private slipper baths, etc., are arranged. In the basement is the establishment laundry, heating chamber, etc.

LIST OF COMPETITIONS OPEN.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglian Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. D. O. Holme, Clerk of the Governors, Castle Chambers, Norwich.

SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—Particulars from Mr. J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. SHERINGHAM COUNCIL OFFICES.—Particulars on written application, accompanied by a stamped addressed envelope, to Edgar C. Rolfe, Clerk of the Council, Church Street Chambers, Sheringham.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects). Particulars, together with site plan can be obtained from A. F. Kidson, Town Clerk, Folkestone.

SEPT. 15. The QUEENS UNIVERSITY OF BELFAST.. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, etc., from the engineer, Samuel J. Harpur, Town Hall, Maesteg.

Oct. 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., or obtained from the "Commission d'études de l'aménagement de l'agglomération anversoise," Due du Jardin des Arbalétriers 57, Antwerp. Charge of 100 francs.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

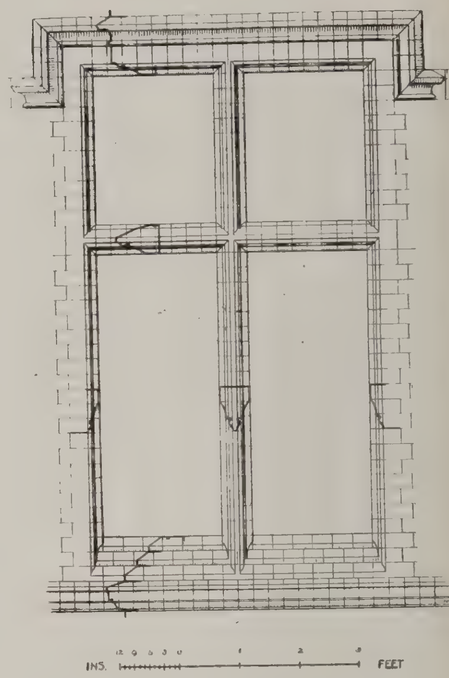
NOVEMBER 15. ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Entries to be made by the date given. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

Nov. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Alternative schemes (plans, specifications, and estimates) to be sent in—(a) For erection of heated swimming pond, slipper and other baths, etc.; (b) scheme (a), omitting swimming pond, but providing for construction of same as an addition if thought desirable in the future, at a proportionately reduced cost. The cost of scheme (a), inclusive of all professional fees, not to exceed £7,050. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

NO DATE.—MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate and all necessary particulars may be obtained from, and a model of the estate inspected at, the City Surveyor's office, Town Hall, Manchester, on receipt of a deposit of three guineas, which will be returned on receipt of a bone-fide scheme. The following premiums will be paid: £150, £100, and £50 to the first three schemes as selected. The selection to be made by assessors appointed by the committee.

NO DATE.—TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Assessors: Sir Aston Webb, R.A., and Mr. Raymond Unwin. Premiums of £150, £100, and £50. Terms and conditions of the Company on and after September 1st. Deposit, one guinea.

NO DATE. ALEXANDRIA, EGYPT. RAILWAY STATION FOR EGYPTIAN STATE RAILWAYE.—Premiums of £E400, £E200, £E100. Enquiries to the Administration Offices, Egyptian State Railways, Cairo.



BRENTWOOD GRAMMAR SCHOOL: DETAIL OF WINDOWS.
CHANCELLOR AND SONS, ARCHITECTS.

BRENTWOOD GRAMMAR SCHOOL.

During the last year an important block of new buildings has been added to this old school, founded by Sir Anthony Browne, in order to meet the requirements of the authorities under the regulations affecting Secondary Schools.

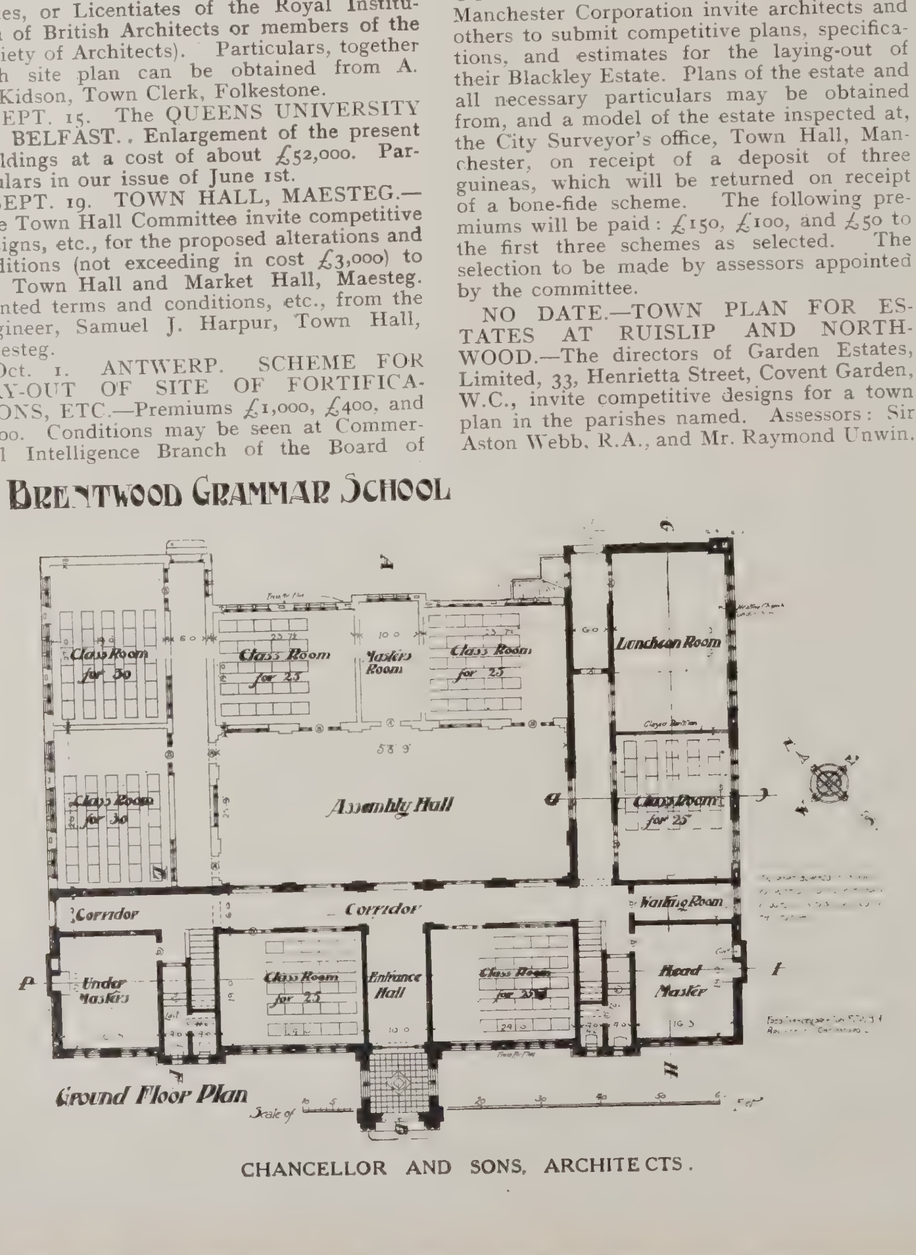
The ground floor consists of a tower entrance, three class rooms, affording accommodation for 25 scholars each, head master's study, and under masters' common room, with waiting room, also a large luncheon or dining-room for the use of the day scholars. The first floor consists of a chemical laboratory, with preparation room, dark room, and balance room attached, a class room for 25, lecture room, and library, and a large Art room.

The buildings are substantially erected in red brick of the period of the original foundation, the windows being of specially moulded bricks made to the architects' design, and the photograph shows the artistic effect of this treatment, of which also a detail drawing is given above. These bricks, as well as the red facings, were all made in Brentwood, at the works of Messrs. James Brown (London), Ltd., of Essex Wharf, Whitechapel.

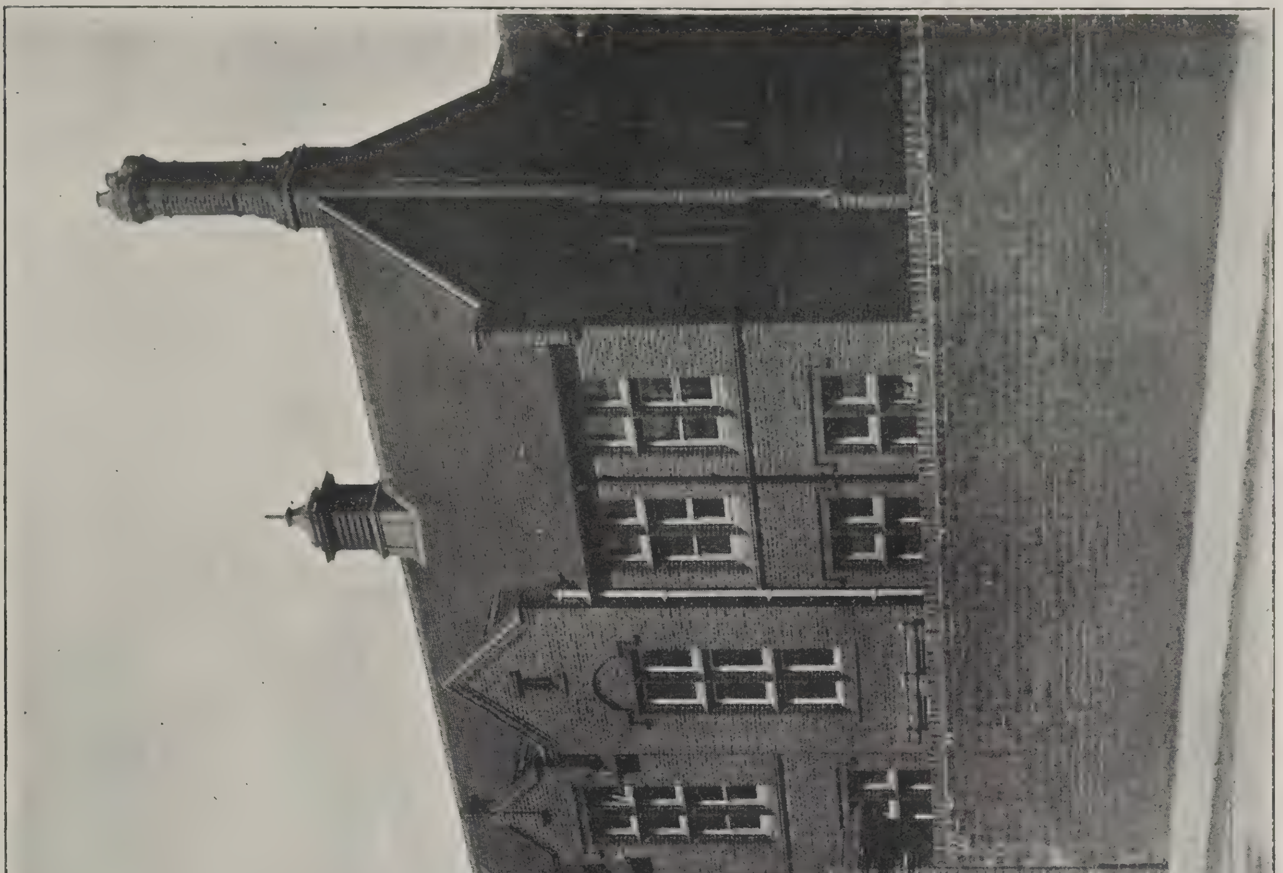
The first floor is constructed on the Armoured Tubular Floor Company's system. Close attention has been paid to the ventilation, the whole building being heated by Messrs. Werner and Company's Pulsial hot-water apparatus.

The dados throughout the students' rooms and corridors are lined with glazed tiles. A sanatorium has also been added to the head master's house

The architects are Messrs. Chancellor and Son, of Chelmsford, and the builders are Messrs. Clark and Sons, of Cambridge. The Chairman of the Governors, Mr. Evelyn Haseltine, has taken a great interest in the work from its commencement, and has contributed the whole cost of the tower and clock, and the lavatories and sanatorium.



CHANCELLOR AND SONS, ARCHITECTS.



The buildings are erected in red brick in colouring similar to those of the period of the original foundation, the windows being of specially moulded bricks made to the architects' design.

BRENTWOOD GRAMMAR SCHOOL NEW BUILDINGS: GENERAL VIEW. CHANCELLOR AND SONS, ARCHITECTS.

ITALIAN SCAFFOLDING.

BY A. G. H. THATCHER.

SECOND ARTICLE.

Continued from page 98, No. 808.

So far, whatever the demerits, the scaffolds noted have been built of fairly substantial timbers. What will be thought, then, of the example taken near Cape Posilipo, just outside Naples (Fig. 12), and this may be considered a typical sample of many others of like character? It is a new building. The holes are so slight that the wooden ties cannot be used, and cordage of a kind has been resorted to. The needle and strut carry everything, and the weight was not negligible. As an exhibition of risky construction it may be commendable, but no other praise can be accorded.

The predilection for needle scaffolding was also exemplified in the structure erected for the repair of a dome on the church of S. Maria della Salute, Venice. It is the English practice, in work of this description, to use any level surfaces on which to erect standards as a basis for the platforms. Not so with the Italians. Needles are run out in circular rings and in lieu of struts beneath, external ribs of poles are brought from the top of the dome to afford the necessary support.

In Northern Italy the scaffolding varies considerably from that in the South. The wooden tie band disappears and in its place hoop iron about ½in. in width is used extensively as means of connection. This does not apply only to poles, but also to square timbers. Figs. 13 and 14 are illustrations of how this is effected, both for splicing and for carrying the ledgers. The municipality of Milan have a code of building regulations in force, one of which reads as follows: "The pieces of timber must be joined by means of nailed iron bands, or in some similar way, hemp rope being excluded; the use of brackets must be fixed in a similar manner, the use of nails only being considered insufficient." Altogether in the Northern towns a greater regard is given to safety. Another regulation from Milan reads: "The front of the platform facing the street will be provided with screens of reed matting, or some other contrivance, so as to prevent the fall of objects or materials into the street."

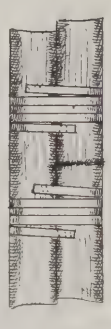


Fig. 13.

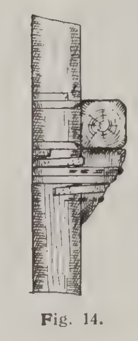


Fig. 14.

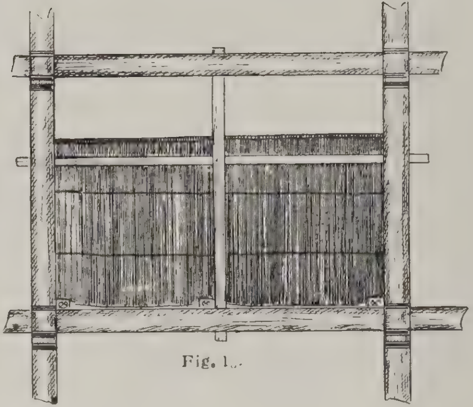


Fig. 1..

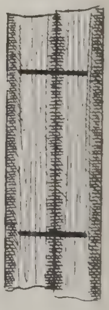


Fig. 16.

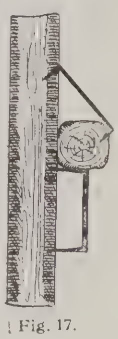


Fig. 17.

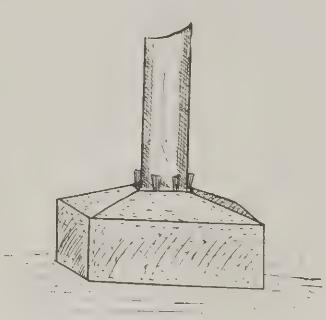


Fig. 18.

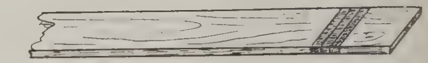


Fig. 19.

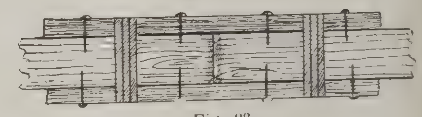


Fig. 23.

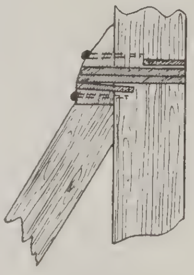


Fig. 20.

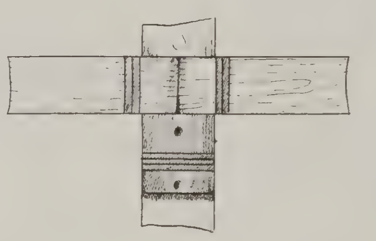


Fig. 22.

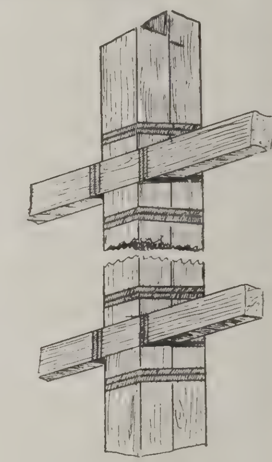


Fig. 21.

In the Southern towns the guard rail and one edge board are usually seen, a provision for safety which it may be remembered the proposed Home Office regulations seek to enforce. The matting is nailed to light rails and uprights, by which means it is kept in position, see Fig. 15, which shows one bay in detail.

The hoop iron bands are not absolutely imperative as before stated, and iron dogs are occasionally seen doing similar duty. Figs. 16 and 17 show how they were arranged on a scaffold near Padua to connect the standards and ledgers.

Poles used as standards have at their feet a neatly struck concrete block, into which they are wedged to provide a base and secure greater stability (Fig. 18). The rubbish filled tub in favour with our builders seems common in comparison. Scaffold boards are of our ordinary type, that is, 12ft. by 9in. by 1½in., but are strapped differently. See Fig. 19. The method cannot be recommended as being liable to cause trips when worn, and therefore possible falls.

Balk timbers are used for heavy work, and different methods are in use for their fixing. If each timber is used singly the transoms rest upon cleats, in a similar manner to Fig. 20, and similar bearings are provided for struts, etc., Fig. 20. In some instances, short puncheons were used from ledger to ledger, carried as shown on Fig. 21. The ledgers butt and not lap. If possible the joint is arranged to occur over a cleat, Fig. 22, but if this cannot be so arranged they are spliced by short lengths as shown by Fig. 23.

Some slighter forms of scaffolding are arranged by the use of flat timbers, practically boards. They are of considerable

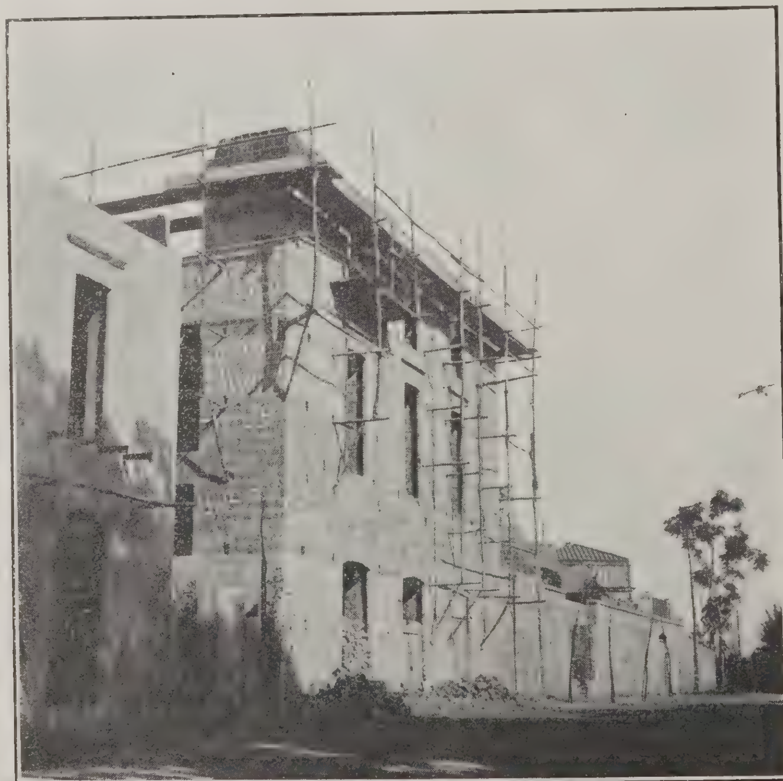


FIG. 12. EXAMPLE FROM CAPE POSILIPO, NAPLES. IT IS AN EXAMPLE OF DANGEROUS SKILL.

adaptability, the corner standards, of course, being more substantial. Fig. 24 gives one side of such a scaffolding in detail. It was seen in Venice.

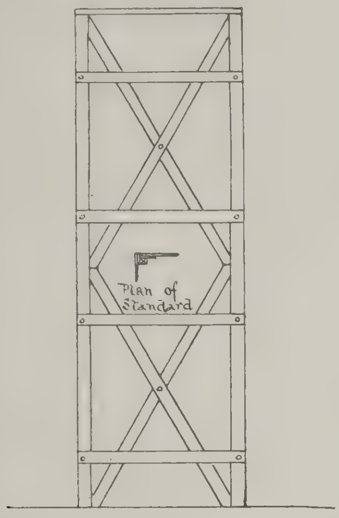


Fig. 24.

BUILDERS' NOTES.

State of the Building Trade. Sir Charles Scotter, speaking at the South-Western Railway meeting recently, stated that his line was carrying more Portland stone, bricks, slate, and other building materials than in recent half-years. From this he deduced the fact that things in the building trade were looking up. The "Pall Mall Gazette" thinks that while this may be true in some districts, it is by no means the general experience, and adds:—"The building trade has been very depressed, in the London district especially, for the past four or five years, so that a recovery is about due, but this particular industry usually follows well-defined principles. It is generally one of the last to feel depression, and one of the last to experience a revival. As the revival in other trades is really only just beginning, builders may have to wait some time yet." The report of the Leeds Fireclay Company, a summary of which we publish this week, states positively that there is still little improvement in the demand for building materials throughout the country.

Brassworkers' Wages. A largely attended meeting of employers in the brass trade was held at Birmingham on Monday week, under the presidency of Mr. R. H. Best, to consider the application made by Mr. W. J. Davis on behalf of the men for an increase of wages. After some discussion the following resolution was passed: "That this meeting, while in sympathy, owing to the general rise in the cost of living, with the demand of the men for an increase of wages, regrets that owing to the fact that the Brassworkers' Society does not control a large number of the men who are the worst paid, it is unable to grant their demand until Mr. Davis is able to control a larger proportion of the men, and also to enforce the present minimum." The resolution affects seven or eight thousand men in the Midlands, Lancashire, and Yorkshire.

Newcastle Plumbers' Outing. The Newcastle, Gateshead, and District Master Plumbers' Association, visited Manchester on Friday, August 12, as guests of Messrs. Baxendale and Co. Leaving Central Station, Newcastle, in the early hours, the party arrived at Exchange Station, Manchester, at 8 a.m., and were met by representatives of the firm. Breakfast having been taken at the Victoria Hotel, the party were conveyed to the extensive works, and warehouses in Miller Street. Much interest was evinced by all during the tour through the numerous departments, and it was generally felt that the oldest friends of the firm had learned something from the visit. A drive was then made through the principal streets to the Midland Grand Hotel, where luncheon was served. Representatives from the Manchester and District Associations joined the party, and with them gave expressions of appreciation to their hosts for the day's excursion. Subsequently the party visited Baxendales' Albion Lead Mills, at Trafford Park, and witnessed a demonstration of the up-to-date methods of lead manufacturing. A visit to the Manchester School of Technology concluded the programme arranged for the day. Individual members of the party visited the numerous places of interest and amusement in the city, and at midnight commenced the return journey. Newcastle was reached at 6 a.m. on Saturday morning.

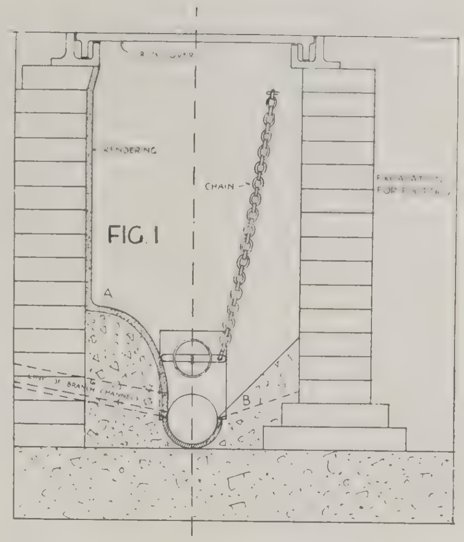
SOME COMMONPLACES OF DRAIN CONSTRUCTION.

BY EDWIN GUNN, A.R.I.B.A.

It is surprising to find how often the obvious essentials of drain construction are missed in practice, and money wasted by thoughtless use of material and labour. In laying stoneware pipes upon concrete, three methods are available for making the cement joint all round the collars. By the first, the barrel of each pipe is supported on bricks laid flat on the concrete, which is supposed to be filled in around and below the pipes after jointing. This a risky method, likely to provide unsound bedding and lead to fractured joints or collars in filling in the trench. By the second, a pocket for each collar is cut in the concrete after laying, and after jointing the pipes this is filled in with fine concrete. This method allows the barrel of each pipe to bear continuously on the concrete, taking all weight off the collars and is quite satisfactory but expensive. By the third method, when the concrete is laid, a series of bricks are bedded flat at 2ft. intervals corresponding with the spacing of the drain collars, sunk 2in. in the concrete, and standing up 1in. above its surface, which enables them to be withdrawn as soon as the concrete begins to set, leaving a series of pockets ready formed. This method has all the advantages of the last, and is considerably easier in practice.

Manholes are often constructed with little thought for the conditions under which they are used. First, as to the structure; under any ordinary conditions footings to a manhole are quite unnecessary. Their purpose being to spread a weight over a large bearing area, manholes (which carry their own weight only) do not require them. In a manhole 3ft. by 2ft. 3in. (the common internal size) the omission of footings saves more than half the quantity of excavation. In forming the benchings two objects must be attained. Since the purpose of a manhole is for inspection and clearing of branch drains, a suitable foothold must be provided for workmen who have to decend with that object. This may, of course, be effected by forming very flat benchings as shown in Fig. 1 by the dotted line at B, but reference will show that any discharge from branch channels opposite is almost certain to deposit a portion of its solids on the benching, which in a short time becomes very foul. This may be partially rectified by steepening the slope as shown, but on this it is almost impossible for a workman to stand.

The form of benching shown on the other side combines the two objects of preventing splashing and giving a good foothold at A. Three-quarter-round channel bends should always be used.



In the event of a stoppage in the sewer interceptor, drains and manholes become charged with sewage, and in that case it is important that manholes should withstand water pressure and remain watertight. An internal rendering of Portland cement, worked with a steel trowel to a perfectly smooth surface, is the most reliable means of accomplishing this. The rendering should be executed continuously from beneath the frame of the cover, over the benching on to the top of the channels. This is a better and less expensive finish than the use of glazed facings in a manhole, the joints of which are a source of weakness. All manholes should be built in hard stocks, to give a good key to the rendering. When drains become charged it is desirable that means should be provided for letting off the sewage, which otherwise would have to be baled out and conveyed to the sewer by hand before the obstruction could be removed. The provision of a stopper on the inspection arm, which can be released by a chain from the top of the manhole overcomes this difficulty by allowing escape to the sewer via the inspection arm.

The advantages of the various forms of covered channel gulleys for bath, lavatory, and other wastes which have to discharge into the open air 18in. distant from the drain trap, do not appear to be sufficiently realised, and one often sees such wastes discharging into roughly made enclosures of brick-on-edge, from which overflow and splashing result. The side of the inlet below the grating is increasingly used for rainwater pipes, owing to the obvious advantage that when the grating is blocked with leaves, its efficiency is unimpaired. This advantage equally attaches to these disconnecting channels, with the added convenience that several wastes of different sizes may be neatly connected parallel with a wall, while the trap is set at any angle to suit the direction of the drain as shown in Fig. 2. If the branch d does not connect directly with a manhole, it is advisable to place an inspection pipe next the trap, for removing obstructions.

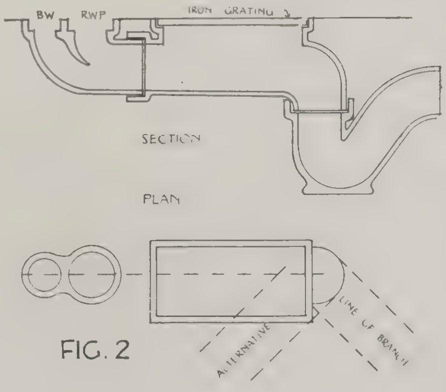


FIG. 2

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries sent must be on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

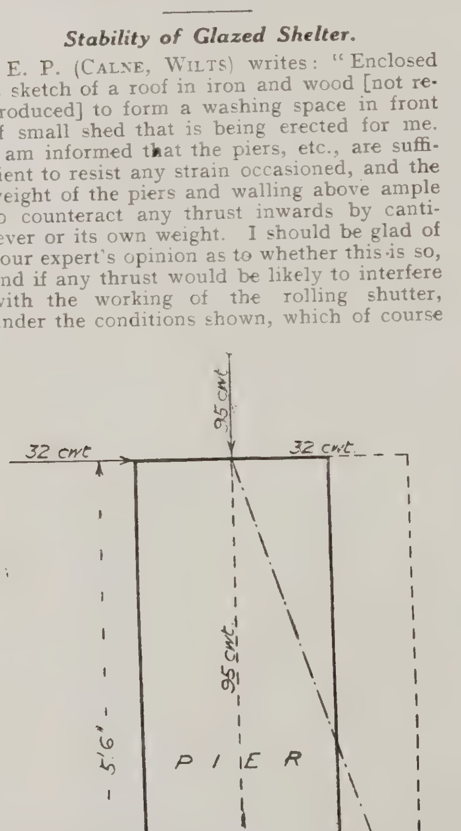
Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Stability of Glazed Shelter.

E. P. (Calne, Wilts) writes: "Enclosed is sketch of a roof in iron and wood [not reproduced] to form a washing space in front of small shed that is being erected for me. I am informed that the piers, etc., are sufficient to resist any strain occasioned, and the weight of the piers and walling above ample to counteract any thrust inwards by cantilever or its own weight. I should be glad of your expert's opinion as to whether this is so, and if any thrust would be likely to interfere with the working of the rolling shutter, under the conditions shown, which of course would occur if the piers, etc., were insufficient. If not perfectly secure, what would be the best method to adopt to counteract any strain likely to occur?"



STABILITY OF GLAZED SHELTER.—REPLY TO E. P. (CALNE, WILTS).

—The total load on the overhanging roof at 28lbs. per ft. super inclusive, which is the least allowable, will be $12.6\times15\times\frac{1}{4}=47$ cwt., or $\frac{47}{2}=23{\cdot}5$ cwt., on each bracket. As the depth of the braced cantilever supporting this roof is 5ft. 6ins., the outward pull at top of bracket $=\frac{23{\cdot}5\times15}{5{\cdot}5\times2}=32$ cwt., and the total load from gable wall and main roof, together with the load from bracket down to the joint at bottom of bracket = say, 95 cwt. These two forces should be combined as in the accompanying sketch, whence it will be seen that the resultant cuts the joint level at 2ft. 9ins. from centre of joint. Then $\frac{W}{A}+\frac{M}{Z}=\frac{95}{1{\cdot}75\times2}+\frac{95\times1\frac{5}{6}}{\frac{1}{6}(2\times1{\cdot}75^2)}=27\pm175=$ 202 cwt., or 10·1 tons per sq. ft. compression and 148 cwt. or 7·4 tons per sq. ft. tension. The brackets must, however, be held back by a $\frac{7}{8}$-in. bolt attached to a riveted cleat on top flange, The structure may then be just safe.

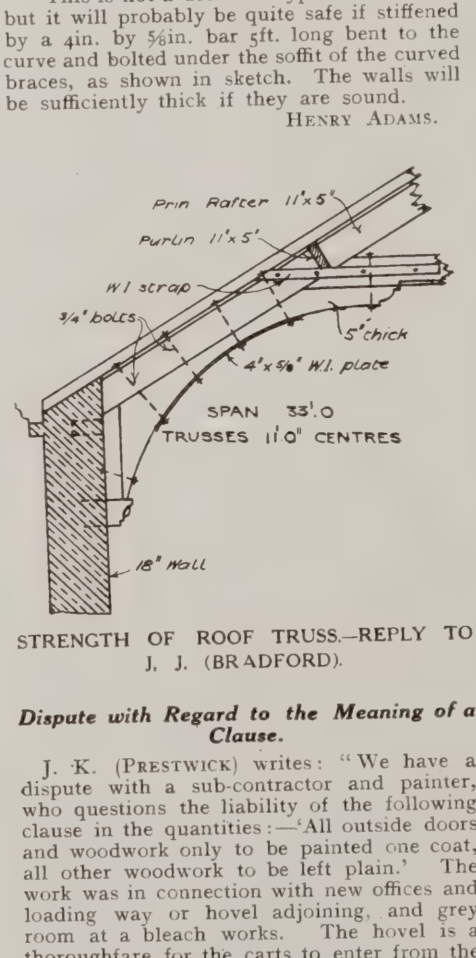
Henry Adams.

Strength of Roof Truss.

J. J. (Bradford) writes: "I herewith enclose you a tracing of a collar-beam roof (not reproduced) that is proposed to be put over an old building, and shall be glad of your opinion as to whether you consider it is of safe construction. Do you think the walls of sufficient thickness, or will it be necessary to put in a tie rod? I do not want to do this if it can be avoided."

—This is not a desirable type of roof truss, but it will probably be quite safe if stiffened by a 4in. by ⅝in. bar 5ft. long bent to the curve and bolted under the soffit of the curved braces, as shown in sketch. The walls will be sufficiently thick if they are sound.

Henry Adams.



STRENGTH OF ROOF TRUSS.—REPLY TO J. J. (BRADFORD).

Dispute with Regard to the Meaning of a Clause.

J. K. (Prestwick) writes: "We have a dispute with a sub-contractor and painter, who questions the liability of the following clause in the quantities:—'All outside doors and woodwork only to be painted one coat, all other woodwork to be left plain.' The work was in connection with new offices and loading way or hovel adjoining, and grey room at a bleach works. The hovel is a thoroughfare for the carts to enter from the roadway into the works yard. The ceiling of this hovel is boarded; and the dispute arises as to whether the true meaning of the clause is inside or outside"

—The answer to this question depends upon practical rather than legal considerations. If the matter were to come before a court, it is probable that the judge would be guided by the evidence of persons familiar with the custom of the building trade. It is manifest that there is much to be said on both sides. For instance, suppose a man had contracted to do all outside painting at St. Pancras Station, would he feel called upon to paint the ironwork under the glass of the great roof? So far as is known, there is no legal decision which throws any light on the matter. Upon the whole it is probable that the ultimate decision would be that everything under a roof, and therefore not exposed to the rain and the winds of Heaven, is inside work.

X.

Book on Farm Buildings.

E. W. (Newport) writes: "We should be glad if you could inform us where we may obtain illustrated books showing plans and elevations of farm houses and farm buildings."

—Clarke's "Modern Farm Buildings," published by Mr. B. T. Batsford, 94, High Holborn, W.C., at 6s. net, post free, will probably meet our correspondent's requirements. Following is a summary of its contents:—Introduction—Arrangement and General Construction of Homesteads—Remodelling of Old Homesteads—Food Department—Cow Houses—Feeding Stalls and Boxes—Open Stockyards—Covered Yards—Stables—Piggeries—Cart Shedding and Miscellaneous Buildings—Dutch Barn and other Roofing—Farmhouses—Homesteads for Small Holdings—Cottages—Dairies—Poultry Houses—Repairs and Materials—Drainage and Water Supply—Model Regulations relating to Dairies, Cowsheds, and Milkshops—Index, etc.

Standard Notation of Concrete Institute; Books on Reinforced Concrete; Card Index System; Velocity and Acceleration of a Moving Point.

J. O. (Cheltenham) writes: "Please give me some information about—(1) the standard notation of the Concrete Institute; (2) the latest and most realistic work on reinforced concrete work at a price that would command it to bricklayers and artisans generally who desire to become foremen. This should at the same time possess a simplified formula for beams, colours, and slabs; (3) an enquiry was answered in your issue of May 11th, 1910, on the best card index system, or methods of filing correspondence, etc., by asking the enquirer to write to the editor; (4) a point is moving in a place. Three successive positions at intervals of 1-50 of a second are given by X Y Ordinates as follows:—

Position.	1	2	3
x feet	0	0·264	0·477
y feet	0	0·266	0·435

Plot these points to a scale of 1 inch to 0. foot. Find approximately the velocity an acceleration of the point when in the middl position."

—(1) The Notation proposed by the Concrete Institute is published in Vol. 1, part of the "Transactions" of the Institute, whos address is 8, Waterloo Place, S.W.; (2) "In spectors' Handbook of Reinforced Concrete, by Walter F. Ballinger and Emile G. Perro Published by Archibald Constable and Co Ltd., London, price 4s. net; (3) we can onl refer our correspondent to Roneo, Ltd., 2 Holborn Viaduct, E.C., who pay particul attention to the systematising of the means filing correspondence; (4) the point is r garded as moving along a path with a vel city which is the resultant of two velociti at right angles to one another. The vertic velocity is the "y" component. The horizont velocity is the "x" component. Each veloci is subject to modification by an independe acceleration. If the position of the point estimated at the end of consecutive equ intervals of time, its distance from the sta ing point, measured along the vertical and horizontal axes, will be given by the equation.

$$S = Vt + \frac{1}{2} a t^2$$

where V = initial velocity in feet per second,
a = acceleration in feet per second gained in each second,
t = the stated interval of time.

(i) Velocity along axis of 'x'

$$S = \cdot 264 \text{ ft.} = \frac{1}{50} V + \frac{1}{2} a \left(\frac{1}{50}\right)^2$$

$$S^1 = \cdot 477 \text{ ft.} = \frac{2}{50} V + \frac{1}{2} a \left(\frac{2}{50}\right)^2$$

clearing and reducing

$100\,V + a = 1320 \qquad a = -127 \text{ ft. pr sc. pr sc.}$

$100\,V + 2a = 1192\cdot5 \quad \therefore V = 14\cdot475 \text{ ft. per sec.}$

(ii) Velocity along axis of 'y'

$$\text{as before } \cdot 266 \text{ ft.} = \frac{1}{50} V^1 + \frac{1}{2} a^1 \left(\frac{1}{50}\right)^2$$

$$\cdot 435 \text{ ft.} = \frac{2}{50} V^1 + \frac{1}{2} a^1 \left(\frac{2}{50}\right)^2$$

whence $V^1 = 15\cdot725$ ft. per sec.
$a^1 = -242\cdot5$ ft. per sec. per sec.

The point has two velocities
along 'x' of 14·475 ft. per sec.
along 'y' of 15·725 ft. per sec,

$$\text{The Resultant 'R'} = \sqrt{(14\cdot475)^2 + (15\cdot725)^2}$$

$= 21\cdot373$ . . . . .

It has also two accelerations
along x of $-127\cdot5$ ft. per sec. per sec.
along y of $-242\cdot5$ ft. per sec. per sec.

$$\text{The Resultant 'A'} = -\sqrt{(127\cdot5)^2 + (242\cdot5)^2}$$

$= -273\cdot975$ ft. per sec. per sec.

The direction of 'R'
making an angle θ with the axis of x

$$\tan\theta = \frac{V^1}{V} = \frac{15725}{14475} = 1\cdot086 = \tan 47^\circ 22'.$$

The direction of A making an angle of ψ with the axis of x.

$$\tan\psi = \frac{a^1}{a} = \frac{242\cdot5}{127\cdot5} = 1\cdot902 = \tan 62^\circ 15'.$$

At the end of the first interval of $\frac{1}{50}$ sec.

The velocity $v = V + a\,t$

$$= \begin{cases} 11\cdot925 \text{ ft. per sec. along } x \\ 10\cdot875 \text{ ft. per sec. along } y. \end{cases}$$

The resultant of which is 16·14 ft. per sec. along a line making an angle of 43°40′ with the axis of x.

The acceleration remaining constant is $A = -273\cdot975$ ft. per sec, per sec. in a direction making an angle of 62°15′ with the axis of x.

The graphic representation of the problem will give results approximating to the above, but it has not been thought necessary to show both,

B. and B.

Stress Diagram for Large Roof Truss.

S. B. W. (URMSTON) writes: "Could you inform me how I can take off the stresses for the roof truss, of which I enclose an outline to scale [not reproduced]. I have tried to get out a diagram, but seem to be lost somewhere. The roof is a boarded and slated roof over a chapel, and ordinary loading may be assumed with the addition of a ceiling. The truss is in iron. Would the sizes figured be the safe sizes? The trusses are bolted down to stanchions, size 10in. by 6in., of a considerable height, say, 30 or 35ft. How could I determine if the stanchions are strong enough to resist the thrust imparted by the trusses?"

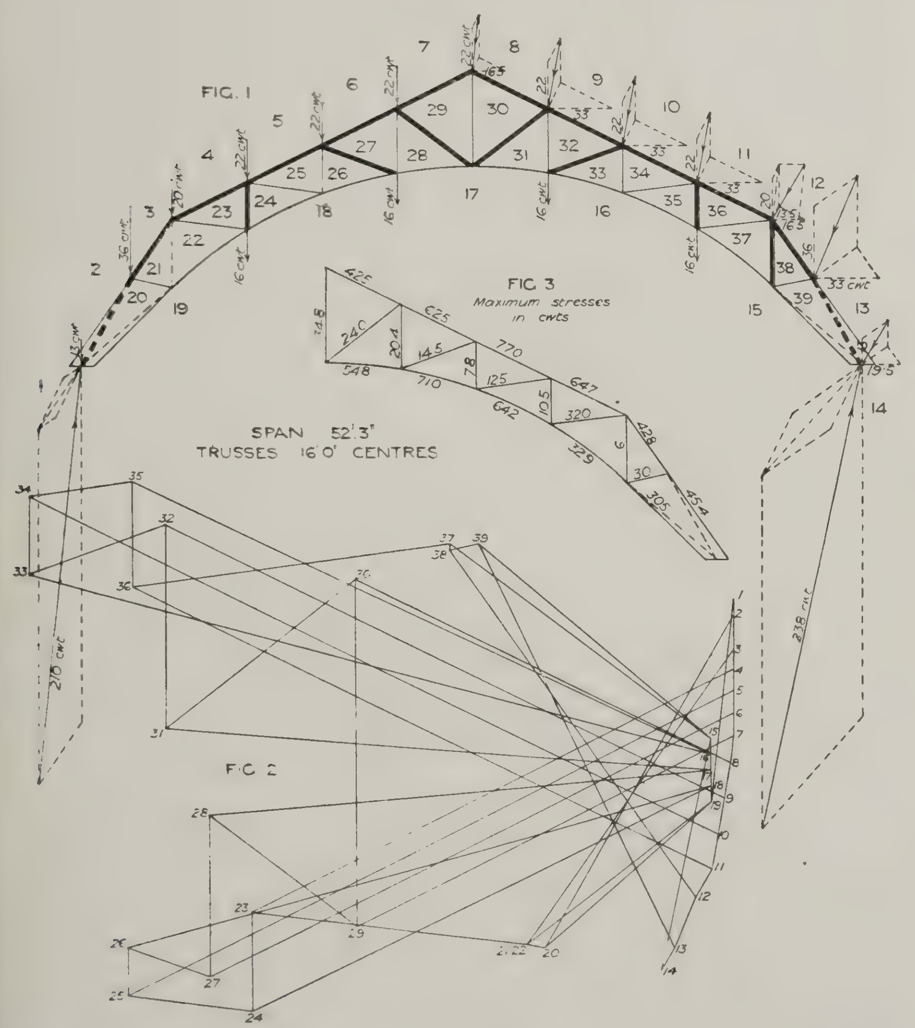
Our correspondent, replying to our request for further information, writes: "The ceiling is an ordinary lath and plaster ceiling, carried on 3in. by 2in. ceiling joists running between 9in. by 2in. wood bearers placed 8ft. centres. These 9in. by 2in. bearers run from R.S.J. No. 3 to No. 2, and from No. 1 to a similar joist on opposite side. Between R.S.J.'s Nos. 1 and 2, there is a ceiling light running the whole length of the roof, which is four bays long, the principals being placed 16ft. centres. The ceiling light is a heavy one, with iron bars, and may be reckoned at about 5lbs. super. R.S.J. No. 3 is vertical, because the ceiling is here carried over to the wall with a flat soffit and cornice. The roof is boarded 1in., felted, and slated with 20 by 10 green slates. Above the ceiling light, i.e., between purlins A and B, is a skylight of Hope's patent glazing running the length of the roof, on each side. The stanchions are, I find, cased in cement, forming a column 1ft. 6in. diameter, and are stayed at the top by struts fixed to cross joists 12in. by 5in., but not in the line with the stanchions."

—The frame diagram of truss will be as in Fig. 1, and in order to work out the stress diagram the plate must be replaced by the dotted members. Assuming the structural load to be 28lbs. per foot super, ceiling 11lb. per foot super, and horizontal wind pressure 42lb. per foot super, the loads will be as shown, and the reactions obtained by producing all the loads to the base line and calculating the reactions as for a beam with irregular loading. The load line 1 to 14 and the reactions may then be set off, and the stress diagram, Fig. 2, completed. The stresses should then be scaled off and the maximum stresses will be as marked on the half frame diagram, Fig. 3. The members in compression should be calculated by Gordon's formula

$$W = \frac{fS}{1 + \frac{m}{nq}\left(\frac{l}{d}\right)^2}$$

where f = load upon material, say, 6½ tons per sq. in. for mild steel; S = sectional area in sq. ins.; $m = 1$ for both ends fixed, 2.5 for one end fixed and the other rounded, 4 for both ends rounded, 16 for one end fixed and the other free; $n = 1\tfrac{1}{2}$ for hollow cylinder section, 1 for solid rectangle, ¾ for solid cylinder, ½ for + L.H.T. sections; $q = 3750$ for mild steel. The members in tension should be calculated by allowing 6½ tons per sq. in. on the net section of member.

HENRY ADAMS.



STRESS DIAGRAM FOR LARGE ROOF TRUSS.—REPLY TO S. B. W. (URMSTON).

R.I.B.A. Examination Questions.

STUDENT (GLASGOW) writes: "Please let me know if the questions set in the final examination held in June last by the R.I.B.A. have been published, and where; and if the answers are likely to be published in the 'Architects' and Builders' Journal" as heretofore."

—The examination questions will be printed in the R.I.B.A. "Kalendar," to be published in October next. The Institute does not permit their publication in the Technical Press, as this would affect the sale of the "Kalendar." Our correspondent's only course is, therefore, to purchase the forthcoming edition of the "Kalendar."

Laying Out Estate Under Town Planning Act.

BUILDER writes: "Please give full particulars of the proper procedure in order that a building estate may be laid out and taken over by the local Council under the recent Town Planning Act. The estate plan was approved by the local Council some time since, and some houses have been built and the roads partly formed. It is now proposed to make the roads with grass margins, and we require to know the proper procedure in order to get the local Council to take over the roads when laid out in this way."

—The only course that our correspondent can adopt is to negotiate with the local Council with a view to coming to some agreement in the event of the Council adopting a town planning scheme for the area. The Act does not prescribe any procedure for negotiations between estate owners, etc., and the local authority prior to the adoption of a scheme; but there is nothing to prevent some kind of understanding being arrived at. Otherwise, our correspondent can only proceed in the ordinary way under the existing by-laws and Public Health Act, which would not necessarily prevent the construction of streets with grass margins.

Interior Treatment of Rooms in 1700.

G. L. C. (Keighley) writes: "How were the walls of reception rooms, etc., in the larger class of house, treated in the year 1700?"

—The internal finish of rooms as executed in the year 1700 would be Renaissance wood panelling in broad, simple panels, with bold mouldings such as may be seen in Wren's work at Hampton Court. The panels stand out in advance of the stiles. The material might be oak, but little carving would be introduced unless the building was one of considerable importance, when festoons of fruit and flowers would be disposed at points of interest such as the overmantel. A great deal of panelling in pine painted was used in houses of lesser importance. The usual treatment in either case was with basemould or skirting, panelled surbase surmounted by a dado rail, and large single panels above reaching to below the wood cornice of simple classical profile. The plastered ceiling was usually plain but might be divided by soft mouldings into simple panels around a central circular or oval wreath of modelled fruit and flowers in high relief. The fireplace opening would probably have a plain marble wave-section jamb moulding. Representative details are given in "English Interior Woodwork of the Seventeenth and Eighteenth Centuries," by Henry Tanner jun., published by B. T. Batsford, High Holborn. Robert Adam did not commence to practise before 1758, when he returned from his travels abroad. G.

Books on Screw Pile Driving.

F. B. R. (Portsmouth) writes: "I am very anxious to secure a book on screw pile driving work and its branches, and should be obliged if you could give me any information as to how and where I can obtain one."

—The writer does not know of any book on Screw Pile Driving. His paper on "Timber Piling in Foundations and other Works," is obtainable through E. and F. N. Spon, 57, Haymarket, but this does not deal with screw piling. There is a short reference to screw piles in Cassell's Building Construction, part 3, Cassell and Co., price 3d., postage 1d. Usually the blades are cast upon a short length which is bolted to the next length above. A wooden frame is made like a large horizontal sprocket wheel to take the capstan rope. A large sheet of iron is placed on each side at the centre through which the various timbers are bolted to keep them in position. Other bolts then connect this frame to the head of pile column for the screwing.

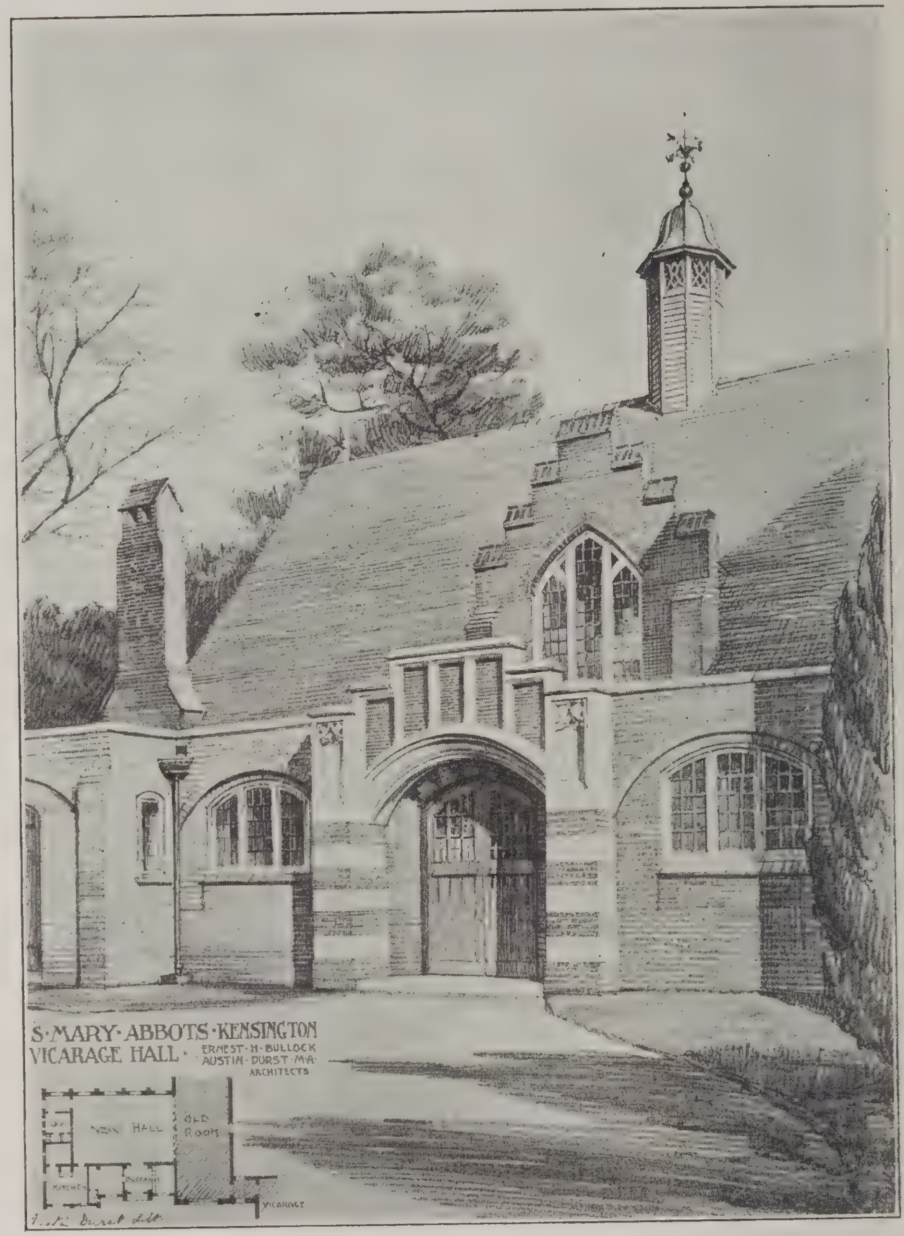
Henry Adams.

How to Become a Reinforced Concrete Expert.

A.R.I.B.A. (Birmingham) writes: "I should be greatly obliged if you would kindly give me information as to the best ways and means of becoming an expert in reinforced concrete construction; I am desirous of going into the matter thoroughly, studying all different systems, and also being able to work out the stresses and strains on same."

—We advise you to attend the course of lectures on "Reinforced Concrete," which will be given by Mr. H. Kempton Dyson, secretary, Concrete Institute, at the London County Council School of Building, Ferndale Road, Brixton, S.W., next session, commencing in September. The cost of this course will be 10s., to those earning over 30s. per week, and 4s. 6d. to those earning less than that wage. Particulars can be obtained at the School of Building. If, however, you are unable to attend London for lectures, we do not quite know what you can do, as the subject has not been dealt with adequately before. The only thing to be done is to study books on the subject, but that is rather an unsatisfactory way, being tedious and not practical enough, and affords liability to error.

D.



This new Hall, adjoining the old Gothic structure, was erected about two years ago, increasing the seating accommodation by 150. Arranged on either side of the vestibule are cloak-rooms with lavatories; there is also a service kitchen for parochial use. The new Hall, which has a panelled dado, can be cut off from the old Room by a movable partition. It is heated by hot water radiators and lit by electric light. The roof, spanning 27 feet, is open, of purlin construction, and the timberwork left untouched. The old Room has been plastered and finished with dado to harmonise with the new Hall. The architects for the work were Mr. Ernest H. Bullock and Mr. Austin Durst, M.A., 3, Raymond Buildings, Gray's Inn. Messrs. T. W. Dickens and Sons, of Ealing, were the builders.

Responsibility for Adding to Boundary Wall.

Heaton writes: "A is a private residence, B is a new council school just commenced. The boundary wall between the two, belonging to the private residence, is only about 5ft. high. (1) Can A compel B to build the wall to a further height? (2) Has B any right to use this wall, or ought they to build one of their own?"

—As to (1), it is clear that the school authorities can have no right to make A alter his wall by adding to it. The height of a wall is a matter for him to decide upon. As to (2), if (as stated) the wall stands entirely on A's property, his neighbour has no right to make the slightest use of it. Any such user would constitute a trespass for which damages could be claimed. Further than that, if A came to know that this use was to be made of his wall, he could apply for and obtain an injunction to stop it.

X.

Colonial Architectural Journals.

Colonial (Sunderland) writes: "Could you oblige me with the addresses of the principal Colonial architectural periodicals—particularly in Canada? I should be glad also if you could give me some idea of the charges for advertisements for situations required."

—There are really very few publications issued in the Colonies devoted to architectural matters. Below we give particulars of two or three, which we think might serve our correspondent's purpose, but we think his better plan would be to advertise in the leading daily papers of whichever Colony or State he particularly entertains. For these papers, the general charge for an advertisement, "Situations Vacant," would be 5s. for 40 words. The charges for similar advertisements in the following papers are as follows: "Canadian Architect and Builder," Ontario, 10s.; "Canadian Cement and Concrete Journal," 10s.; "Builder, Engineering and Mining Journal," Sydney, N.S.W., 5s. Should our enquirer desire further information, or wish to place instructions for any Colonial publications, Messrs. Gordon and Gotch, of 15, St. Bride Street, E.C., should be communicated with, as they are in a position to carry these matters through without any difficulty.

NEW BUILDINGS.

PROPOSED.

Barnes.—The District Council has approved the following plans:—Two houses, Temple Sheen Road, Mortlake; motor shed, Feldholme, Queen's Ride, Barnes; house, Hillersdon Avenue, Barnes; four houses, Rosslyn Avenue, and four houses, Tudor Gardens, White Hart Lane, Barnes; six semi-detached villas, Deanhill Road, Mortlake; one pair semi-detached villas, Temple Sheen Road, Mortlake; one pair semi-detached villas, Temple Sheen Road, Mortlake; and a ballroom, Mill Lodge, Lonsdale Road, Barnes.

Basingstoke.—The Hampshire County Council have approved of an agreement with the county boroughs of Bournemouth and Southampton for the building of a second asylum for the county, the present one being inadequate for the demands made upon it. The site of the new building will be Park Brewett Farm, Basingstoke, and accommodation will be provided for 1,300 patients.

Bolton-upon-Dearne.—The Local Government Board have communicated with the Bolton-upon-Dearne Urban Council relative to their housing proposals and the borrowing of the sum of £9,475, to the effect that an inquiry would be held as soon as the engagements of their inspectors would permit.

Bournemouth.—An inquiry has been held by the Local Government Board into an application of the Bournemouth Town Council for sanction to the borrowing of £9,500 for alterations and extensions to the refuse destructor in Iddesleigh Road.

Doncaster.—The Local Government Board have been in communication with the Doncaster Corporation with respect to the housing scheme under their Act of 1904, and the Sanitary Committee, in order to meet the requirements of the Board, have recommended that the borough surveyor be instructed to formulate a scheme for erecting on the surplus land in Marsh Gate, which was acquired in connection with the New Bridge scheme, about 144 houses for occupation by the working classes.

Fort Matilda (on the Clyde).—It is reported that the Admiralty has decided to carry out an important extension of the new torpedo factory just completed at Fort Matilda, on the Clyde. The estimated cost of the extension is £25,000, and it is expected that the work will shortly be commenced.

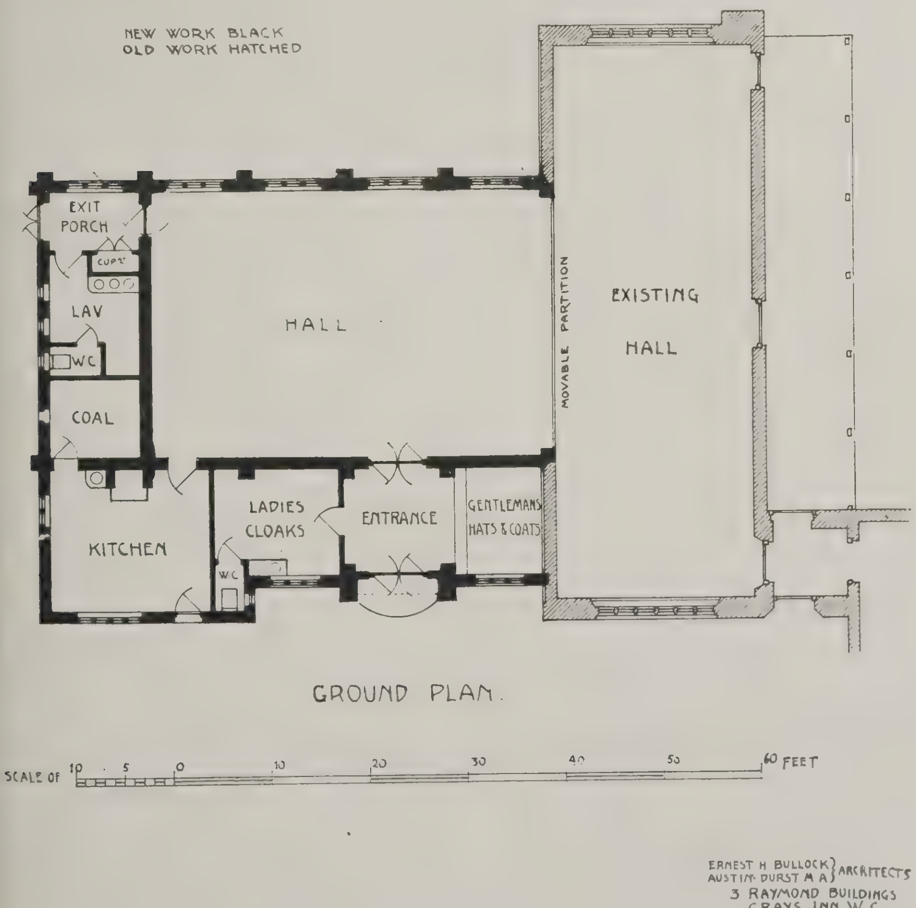
Hartlepool.—The Town Council has decided that as there had been no applications to take up leases of land belonging to them in Northgate, Corporation Road, and Warren Street, they would themselves build workmen's dwellings thereon. It is estimated that the amount required to carry out the scheme will be £4,000.

Lancaster.—The Postmaster-General has selected the site for the new Lancaster Post Office in Fenton Street and Cawthorne Street, Lancaster. The proposal to erect the new building in Dalton Square, alongside the new Town Hall, was opposed by the Chamber of Commerce. Another proposal to utilise the old Town Hall was not approved, and the site chosen is opposite the Storey Institute, near the Castle and the London and North-Western Station.

London, W.C.—Proposals are being considered by the Holborn Borough Council for a big building scheme on the site of the Italian colony. The consent of the Council is being sought for the closure of the courts, which were recently the subject of litigation.

Maidstone.—The lowering of the wall on the north boundary of All Saints Churchyard, Maidstone, has been approved by the Town Council, and it will be shortly taken in hand. The object is to show the church in its proper proportions, which are at present partially hidden when viewed from Mill Street and the Palace Garden.

Margate.—Preliminary steps have been taken for erection of an open-air concert hall and shelter on the greensward known as the Fort, to the east of the pier at Margate. From the shore a slipway is to give access to a low promenade, which will extend from the Point to Clifton Baths. The concert hall and shelter, which are to be completed next season, will accommodate 2,500 people, and the cost of the building and alterations to the Fort will amount to about £20,000.



VICARAGE HALL, ST. MARY ABBOTS, KENSINGTON.

Nelson (Lancs.).—A new church is to be built in Burnley Road, Nelson, at an estimated cost of about £5,000.

Otley.—The Urban District Council has decided to apply to the Local Government Board for sanction to obtain a loan of £3,000 to carry out private street works.

Oxford.—The report of the Oxfordshire County Council Committee entrusted with the authorised scheme for providing new buildings for office accommodation and a Council room on the site of the motor garage next to the county police station at Oxford, have approved the design for the elevation and detailed plans prepared by Mr. Stallard, the County Surveyor. Possession of the site will be obtained at Michaelmas next. The estimated cost of the buildings is £7,750, and of furnishing £1,000, and architect's commission, etc., £450, and for the new police stables and incidental matters, £800—and the committee recommend the Council to make application to the Local Government Board to sanction a loan not exceeding £10,000, and to give the committee general instructions to obtain tenders, and proceed with the work.

Pontefract.—The Town Council has decided to advertise for sites for building workmen's dwellings, and not to proceed with the Horsefair improvement scheme on account of the expense already incurred by owners on property involved.

Troon.—The Duke of Portland has promised £10,000 towards the cost of erecting new municipal buildings at Troon, Ayrshire.

Wednesbury.—The General Purposes Committee of the Wednesbury Town Council, in a report issued recently, state that they have considered an offer contained in the will of the late Mr. John Guy of £2,000 to initiate a subscription fund for the erection of almshouses in the borough at a cost of not less than £4,000, and of a further £1,000 for starting an endowment fund of not less than £2,000. The committee, after obtaining and considering information relating to the income and expenditure of almshouses in various parts of the country, and also putting themselves in communication with one of the executors under the will, had decided to recommend that the executors be informed that the Town Council regret they cannot see their way to inaugurate or to accept the administration and management of the scheme upon the terms and conditions contained in the will.

West Hartlepool.—The West Hartlepool Town Council are considering a proposal to construct a new direct road between West Hartlepool and Middlesbrough. By the existing road the distance between the two towns is 17 miles. By the new road it would be under eight miles. Over the greater part of the distance there would be, in addition to a footpath, a 24 ft. road for motor and light traffic, and a 22 ft. road for heavy traffic, and a strip of road 14 ft. wide would be retained for a light railway. The estimated cost is from £47,000 to £50,000. It is intended to arrange a conference of the surveyors of the authorities interested to discuss the whole scheme.

Wolverhampton.—The Town Council have received a formal intimation from the Local Government Board sanctioning the loan of £18,435 for the erection of a secondary school for girls.

IN PROGRESS AND COMPLETED.

Aberdeen.—Tenders from the following contractors have now been accepted for the new buildings which are in course of erection for the Royal Insurance Company, Limited, in Union Street:—Mason work, Mr. Alexander Anderson, Bieldside; carpenter, and joiner work, Messrs. D. Macandrew and Co., Loch Street; slater work, Mr. George Davidson, Thistle Street; plaster, tile, and cement work, Messrs. J. Bannochie and Sons, Belmont Street; painter and glazier work, Mr. B. Copland, Union Terrace; plumber work, Mr. John Dean, Queen Street; heating, do.; steel beams, Mr. George Bisset, Sugarhouse Lane; reinforced concrete (Hennebique system), Messrs. J. Scott and Son, George

Street. -The contracts for electric lighting and office fittings have not yet been arranged. The total cost of the building, including value of site, will be about £20,000.

Beglinog (S. Wales).—The foundation stones have been laid of the new Methodist Chapel, which is in course of erection at a cost of £2,450, and will provide accommodation for 600 persons. Mr. W. D. Morgan, Pentre, Rhondda, is the architect, and Mr. John Lloyd, Ystrad Mynach, the builder.

Bolton.—The new premises of the National Provincial Bank of England, in Bradshawgate, have been completed, and are constructed of stone in the Renaissance style. Messrs. George Temperley and Son, were the architects, and Mr. Richard Mosley the contractor, both of Bolton.

The Borough Council has approved the following plans:—11 houses in Baber Street, and 3 houses in Major Street, Astley Bridge; 23 houses off Alexander Road, Tonge; 2 houses and shops in Mirey Lane, Lostock; house in Church Road; 7 houses in Thornley Avenue; 10 houses in Melrose Avenue, Smithills; addition to premises in Deane Road; rebuilding premises in Sr. George's Road, and Vernon Street (conditionally); rebuilding shops in Deansgate and Howell Croft (conditionally); timber storing shed in St. George's Road; new meter house in Gas Street; 17 houses in Hawthorn Road; shop in Deansgate; skip store in Coe Street; workshop in Blackhorse Street; outbuildings on Chorley Old Road; 13 houses in Melbourne Road; 14 houses in Willows Lane.

Boscombe (Bournemouth).—The opening and dedication has taken place of the new Mission Hall, which has been erected in connection with St. John's Church, in Shelley Road, Boscombe, at an estimated cost of £1,925. The building is constructed of red brick with Bath stone dressings, and provides seating accommodation for 420 persons. Mr. C. T. Miles, F.R.I.B.A., Bournemouth, was the architect, and Messrs. J. and W. Hayward, Boscombe, the contractors.

Bristol.—The new Kingsdown Council School, erected between Southwell Street, and Walker Street, is constructed of blue pennant walling with rubble facing and freestone dressings. The main building has two storeys, provision being made for 620 scholars. The floors are of reinforced concrete, laid with wood blocks. All the rooms are lofty, and ventilation is provided by an electrically driven fan in a ventilating tower. The school is warmed entirely by hot water on the low-pressure system, the heating chamber being placed in the basement. Electricity is the illuminant in all parts of the building. Mr. W. S. Skinner, F.R.I.B.A., was the architect, and Mr. William Foster the contractor.

Cannock.—The Urban District Council has approved the following plans:—Two houses, Belt Road, Chadsmoor; 6 houses, Cemetery Road, Cannock; alterations to Cannock Infants' Schools; 6 houses, off Belt Road, Hightown; 2 houses, Green Heath Road, Hednesford; 2 houses, High Mount Street, Hednesford; 6 houses, High Mount Street, Hednesford; 6 houses, Littleworth Road, Hednesford; additions to house, Hednesford Road, Heath Hayes; alterations, Hednesford Road, Heath Hayes; 2 houses, Lloyd Street, Cannock; 2 houses, Belt Road, West Chadsmoor.

Croydon.—The new variety theatre, to be known as "The Croydon Hippodrome," has been completed, and was erected by Messrs. J. Smith and Sons, South Norwood, from the designs and under the superintendence of Messrs. Frank Matcham and Company, architects, London. The building is of concrete and steel construction, and occupies an island site, with a frontage of 40 feet to Crown Hill, 180 feet to the public thoroughfare of Priddy's yard, and 100 feet to a private road.

Elton-on-the-Hill.—An extensive scheme of restoration and renovation has been undertaken in regard to the parish church of Elton-on-the-Hill, which is an ancient edifice of considerable interest. The nave, which is probably Jacobean in date, contains remains of Early English pillars and arches. The tower was built about sixty years ago.

Exeter.—The Lord Bishop of Exeter has laid the foundation stone of a new church, which is in course of erection in the Polsloe Park portion of the parish of Heavitree. The first portion of the church will consist of three bays, and will cost about £1,200. The building will be of local brick, with Bath stone windows and dressings, and a slated roof. There will be seating accommodation for about 500, and a parish room and vestries will be provided. The dimensions of the building will be 31 ft. by 81 ft., with a chancel 31 ft. by 38 ft. Mr. E. H. Harbottle, F.R.I.B.A., Exeter, is the architect.

Faceby (Yorks.).—The foundation stone has been laid of a new chancel, which is to be added to the parish church of Faceby, at the foot of the Cleveland Hills. Mr. Temple Moore, F.R.I.B.A., has prepared the plans, and the sum to be expended on the addition is £1,000.

Gosforth.—The foundation stone of St. Charles's Roman Catholic Church at Gosforth has been laid by the Bishop of Hexham and Newcastle. The building, which has a frontage in Rothwell Road, is Gothic in design, and cruciform on plan. Mr. C. J. Menart, of Glasgow, is the architect, and Mr. W. C. Fleck, Gosforth, the contractor. The church is being built of Kenton stone, with dressings and mouldings of Pasture Hill stone. Its length is 85 ft., width of transept 62 ft., width of nave 38 ft., height 50 ft., height of towers 80ft. It is planned to seat 510 persons, the estimated cost being between £4,000 and £4,500.

Grangemouth.—The memorial stone of the new Parish Church at Grangemouth, situate in Ronaldshay Crescent, has been laid by the Grandmaster of Stirlingshire. The church will accommodate 800, and the hall 400 persons, the total cost being between £7,000 and £8,000. The design is Perpendicular Gothic, Messrs. Wilson and Tait, Grangemouth, being the architects.

Greenock.—The Dean of Guild Court has approved the plans of the houses which are to be erected at the foot of the Lyle Road, immediately west of the bridge at Fort Matilda Station, and the work will be proceeded with at once. The scheme consists of a block of ten self-contained dwelling houses, eight of which are of five apartments, and the two end houses are each of six apartments. The houses are to be constructed of stone for the first storey, with brick and rough-cast on the second storey, and will have, in addition to a good garden at back, the advantage of being set back from the public road by no less a distance than 30 ft. The site commands an extensive view of the Firth, and extends to over 100 poles. Mr. W. H. Kirkwood, Greenock, is the builder.

Halifax.—Good progress is being made with the erection of the new church of St. Hilda, situate at the Hopwood Lane end of Gibraltar Road, and the work of putting on the roof will shortly be commenced.

It is anticipated that the building operations in connection with the proposed new St. Paul's Church, will commence towards the end of October, the fund for the purpose having reached the £7,000 required to justify the work of actual building. The church is to be erected on a site in Queen's Road, near to the Constitutional Club.

Hampton Court.—The work of restoring the ancient moat and bridge opposite the west front of Hampton Court Palace, is expected to be finished in October. There were sufficient flat red bricks, of which the palace is built, recovered from the excavations to complete the walls of the moat where they were defective, and the freestone copings and embrasures are being made to harmonise with the rest of the buildings.

Hedworth (Durham).—The foundation-stone has been laid of the new chancel south transept and chancel aisle of St. Nicholas's Parish Church, Hedworth. The work also includes the erection of vestries and organ chamber, and will cost about £1,700, provision being also made for a future parish room, which will entail an additional expense of £315 19s. 9d., the contract price for the whole of the scheme being £1,808 0s. 9d. Mr. C. Hodgson Fowler, F.R.I.B.A., F.S.A., Durham, is the architect, and Mr. Grayson the contractor.

Immingham (Grimsby).—Good progress has been made with the Great Central Railway dock works at Immingham, and the whole area has now been excavated to the full depth. The foundation difficulties at the entrance to the dock have been successfully overcome, and no further exceptional trouble is anticipated. Some of the lock gates are in course of erection. The general equipment of the dock is proceeding satisfactorily, and the coal hoist on the Western Jetty is now ready for the shipment of coal. Good progress has been made with the electrical railway between the Alexandra Dock, Grimsby, and Immingham, and it is expected that it will shortly be ready for opening.

Jarrow.—The new building for the Kino is constructed of pressed brickwork, with stone dressings, and covers over an eighth of an acre. The hall is approached through a decorated foyer of more than 50 ft. in length, from which are approached the stairs to the circle. The picture hall has decorated ceiling and walls, and is accessible from all parts of the house. Mr. Harry Barnes, A.R.I.B.A., and Mr. Charles F. Burton, M.S.A., Newcastle-on-Tyne, are the architects, and Mr. T. Lumsden, Jarrow, the contractor. The decorations have been carried out by Mr. Dixon, Jarrow; the plumbing by Messrs. W. Scott and Sons, Jarrow and Newcastle; and the electric lighting by Messrs. Robson and Coleman, Newcastle.

London, W.C.—The Savoy Hotel is being considerably enlarged, by the addition of two storeys, which will include 30 suites of rooms and a banqueting hall. The two floors and the decorations of the new suites will cost over £80,000. When the alterations are completed, the hotel will be capable of accommodating over 600 visitors, while the banqueting hall, which is to cost £30,000, will be able to seat 500 people. The latter is to be built on the site of the old courtyard, and entrance from the street will be obtained by a flight of marble steps. The whole work is to be completed in record time, and to this end 900 men will be engaged on the construction, working in three shifts night and day. The total cost of the work is estimated at £125,000.

Morecambe.—The cost of the construction of the new conveniences has been about £1,800, and the work has been carried out by Mr. A. M. Macdonald, of Westminster, from the designs of Mr. J. W. Hipwood, A.M.I.C.E., Borough Surveyor.

Mull.—The first portion of the scheme for extending and rebuilding the Hull Corporation's Madeley Street Bath has been completed. The total cost of the bath is about £8,300. The swimming tank is 90 ft. by 30 ft. The size of the building is 110 ft. by 76 ft. 6 in. Fifty-four folding dressing boxes have been provided along the side walls, and thirty-four fixed boxes on the end galleries. Under the north side gallery provision has been made for eighteen dressing boxes. The estimates provide for a removable wood floor over the swimming tank, so that the baths may be used during the winter months as a public hall. The firms responsible for the carrying out of the work are Messrs. G. Jackson and Sons, contractors for buildings, with sub-contractors: Mr. Drury, mason; Mr. Hunter, slater; Mr. Abba, plumber; Mr. Torr, painter; Patent Indented Bar Company: Messrs. F. C. and J. Keay, Birmingham, steel roof; Mr. J. E. Railton, hardwood dressing boxes; Northern Art Pavement Co., Manchester, mosaic floors and tilework; Messrs. J. Jones and Sons, Manchester, gallery railings; Messrs. Prockter and Kenyon, Manchester, pipes, fittings, etc. Mr. A. E. White is the City Engineer.

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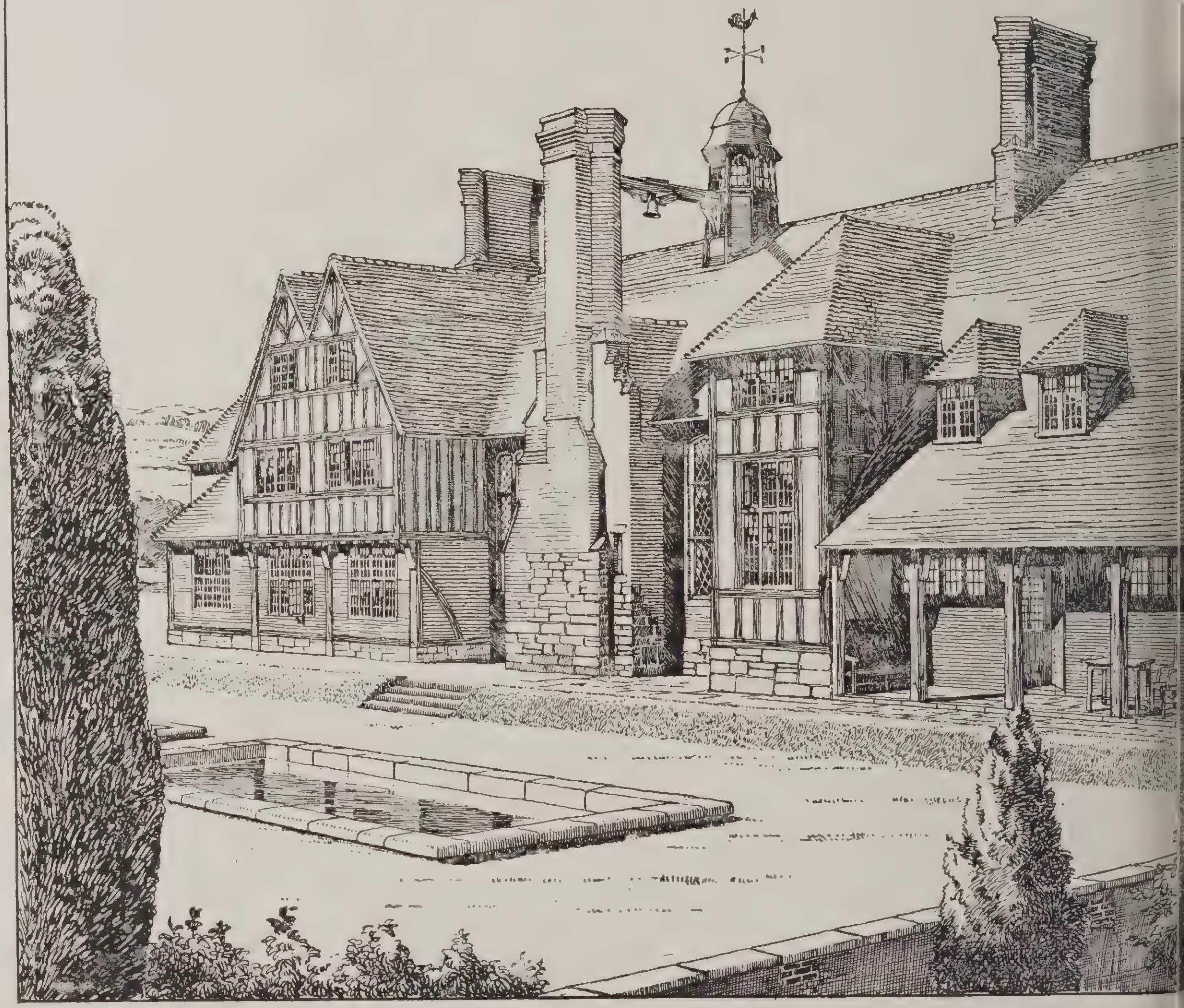
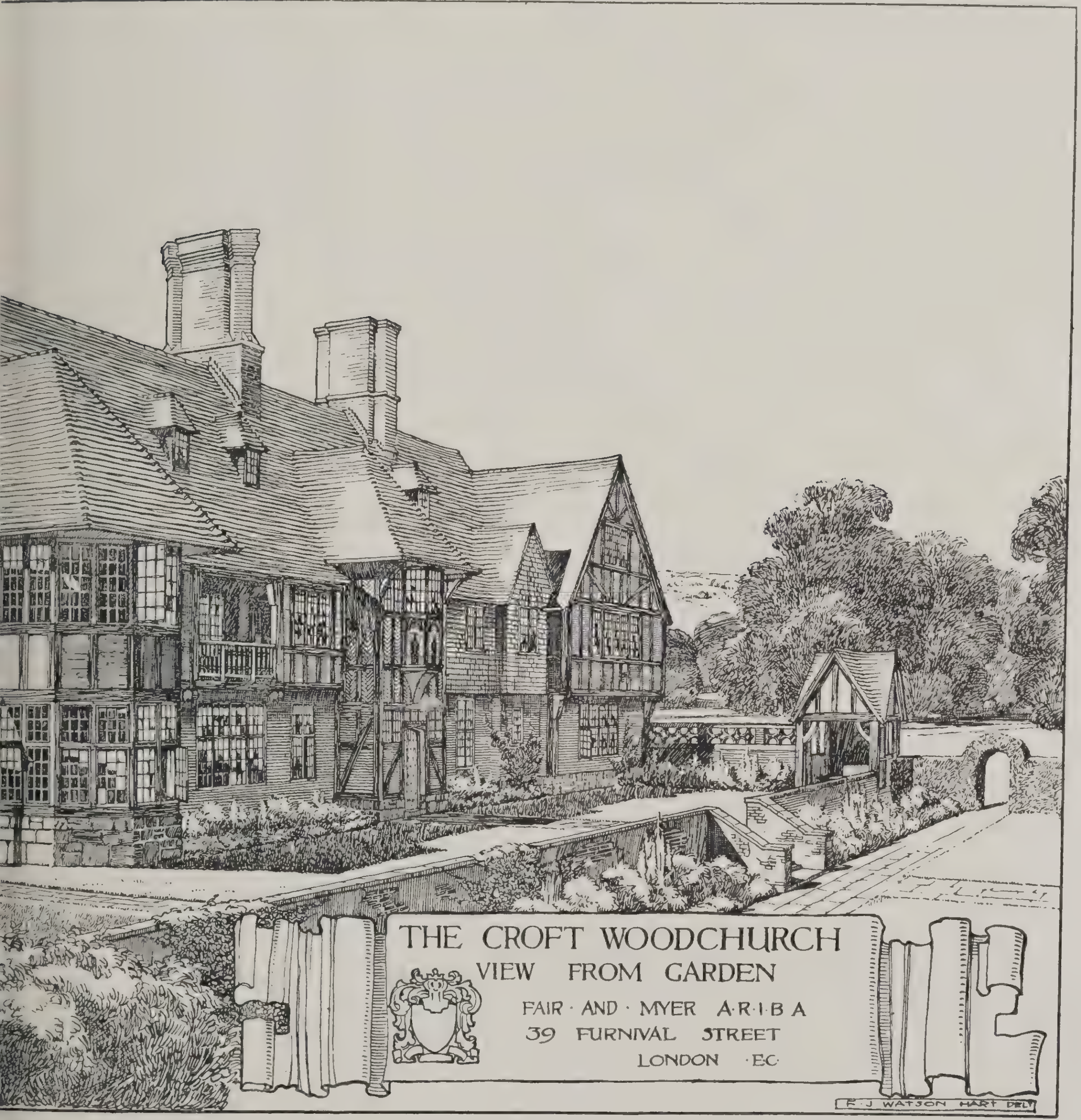
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, *Wednesday, August* 31*st*, 1910.





THE CROFT WOODCHURCH
VIEW FROM GARDEN

FAIR · AND · MYER A·R·I·B A
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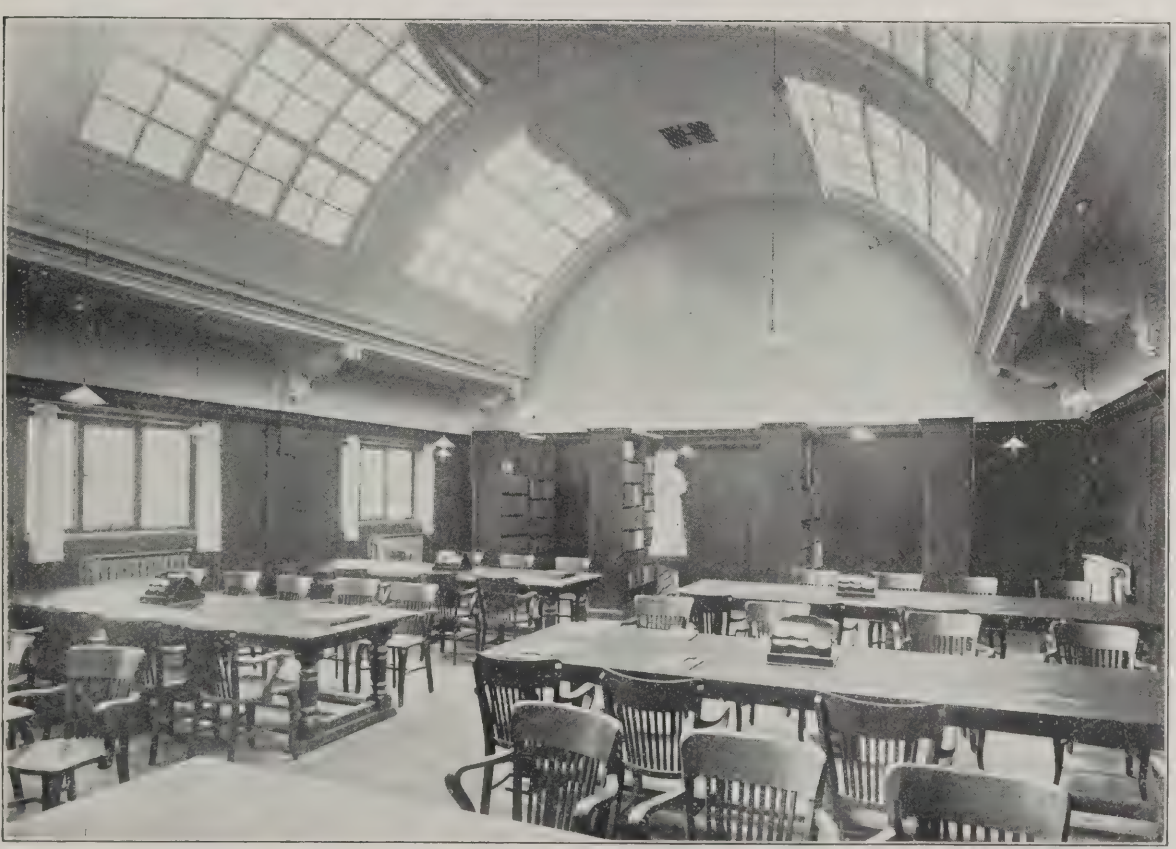
THE ARCHITECTS' & BUILDERS' JOURNAL

WEDNESDAY, AUGUST 31st, 1910.

Volume XXXII. No. 813.



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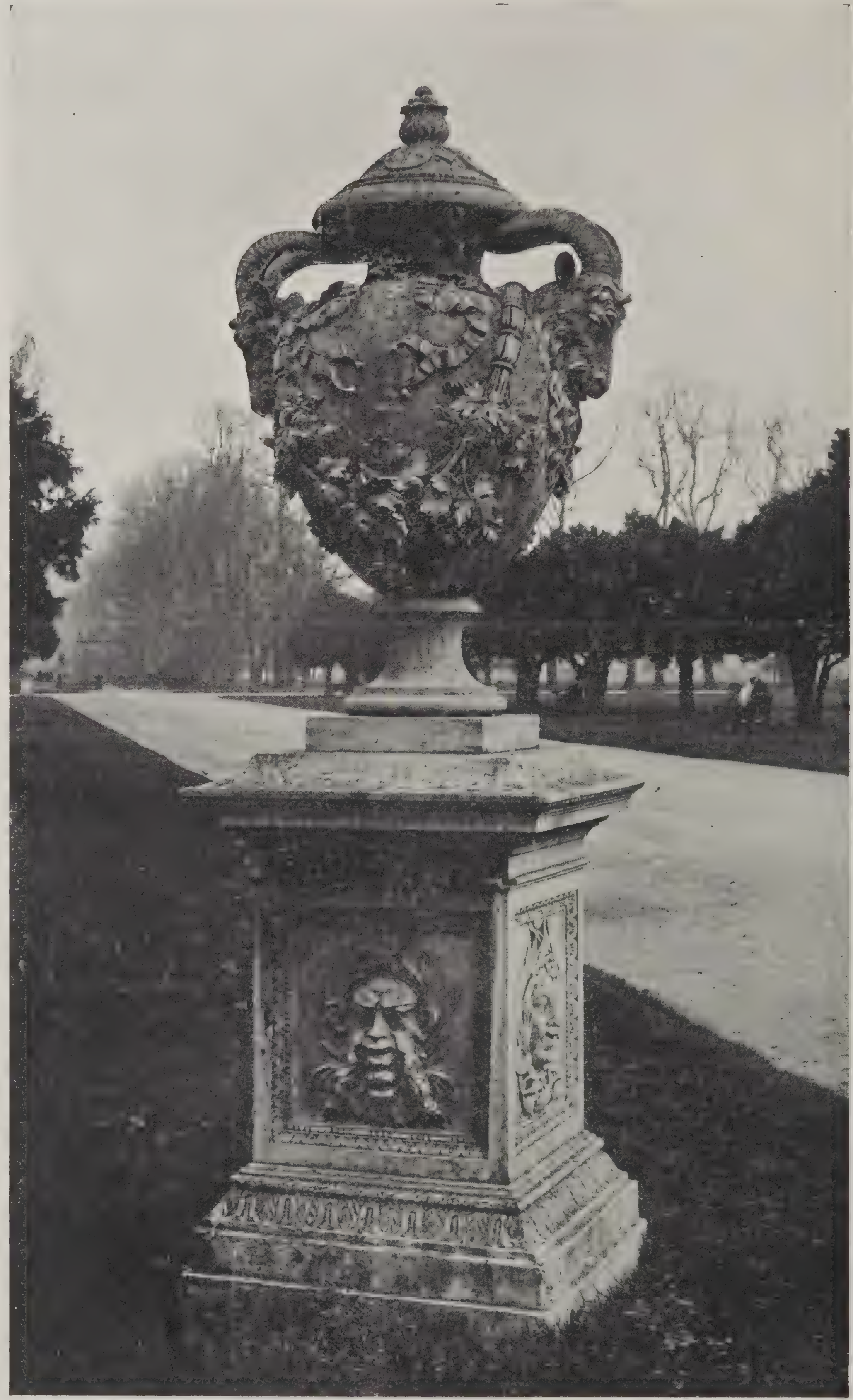
(See also pages 225-227.)



The vase is one of two placed on either side of the main walk facing the centre of the great east front of Hampton Court Palace. Careful inquiry has elicited the fact (which will be new to most people) that the pedestal, of Portland stone, is original work of the time of Wren, whereas the vase itself is of some composition having cement as its basis, and was brought to the Palace (we believe from South Kensington) about forty years ago. The vase or figure—whatever it may have been—which originally stood on the pedestal was removed to Windsor Castle some time during the last century. The present work, as it stands, offers a suggestive comparison, both in the treatment appropriate to two different materials, and in the weathering quality of each.

A GARDEN ORNAMENT AT HAMPTON COURT.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

AUGUST 31st, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 813.

***Note:** The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.*

Supply and Demand in Art.

THAT, in this country, joy in beautiful things is not so pervasive as it should and might be is a safe thesis. Mr. W. Robert Colton, A.R.A., adopts it in a long letter to the "Times," headed "Education and Art." Issue is joined when any attempt is made to assign the reasons and appoint the remedies for the conditions that are deplored; and in this respect Mr. Colton probably neither wished nor expected to escape criticism. He protests against "the radically wrong aims of our educational authorities in regard to art matters, and the foolish expenditure of public money in encouraging the wrong side of the balance of supply and demand in art production." He thinks that a wider distribution of our energies and resources is necessary to the right economic equilibrium. He therefore condemns such congestion as is represented by the storing of antiquities "in our pantechnicons called the British Museum, the National Gallery, and the South Kensington Museum." These pantechnicons are in the next sentence transformed into "universities established before their time and at a period when elementary schools of appreciation are alone needed." To keep on multiplying examples of the old masters until we are compelled to enlarge the old galleries or build new ones in the same centre, is, Mr. Colton holds, to spend the nation's wealth "in a very mad and foolish way." He concedes that the capital city should have moderate collections "made up of single examples of all schools"—when, we fear, they would be very inadequately representative—but "the starved designers and workers in metal, pottery, textiles, lace, etc., must have the finest examples of design in their respective trades brought home to where they live and work, to such places as Birmingham, Sheffield, Staffordshire, Bradford, Ireland, and a hundred other districts. South Kensington methods excite his ironic wit. "A few indifferent examples of surplus designs are lent to certain technical schools and local museums—probably embroidery designs to a wood-carving centre." South Kensington Museum, having served Mr. Colton's turn as (a) a pantechnicon, and (b) a university, now becomes (c) a white elephant — as commodious as the Trojan horse, "pretentious, very costly to keep up, full of policemen and officials, and a very few students who are not allowed to approach anything near enough to copy it without a special permit. What was simply a students' museum is now on the same footing as a foreign fortification which is approached at one's peril." There is, in short, "nothing done in England to produce an artistic public." The Government, bettering the example of France, should place in every district a small temple of art—"a small museum that shall be a criterion of taste. Builded by skilled architects, adorned and decorated by famous sculptors and painters, it shall contain the most choice examples, according to the trades of the district, and shall be a standard of taste in every particular," and the cost should be supplied from funds released by stopping the craze for collecting works of ancient art, whose rarity seems to be a stronger recommendation than their beauty. Mr. Colton's protest has called forth in the "Times" a leader which is evidently from the pen of that ready writer on æsthetics who is doing such excellent work in imparting common-sense views on art to a section of the public that is peculiarly likely to profit by them. He does not adopt Mr. Colton's view that the supply of art is greater than the demand for it, but rather seems to contend that the terms should be reversed. There is, indeed, "too much demand for art—a demand, in fact, so urgent that, when it cannot get good art, it will put up with bad." And the writer goes on to argue that the supply does not and cannot equal the demand. "That is the reason why art always declines in rich and luxurious ages. A nation may increase its income and its demand for art to any extent; but it cannot increase its supply of artists. If it insists on demanding more art than can be produced, it will get spurious art; and the prevalence of that spurious art will so demoralise taste that most people will prefer the imitation to the reality." When every well-to-do Roman wanted statuary, sculpture almost ceased to be an art, and became an industry. It is further urged that the true artist now cannot make a living because he cannot compete in a market that is flooded with adulterations which the consumers usually prefer to the genuine article. All this seems rather to smack of a kind of fatalistic resignation. Nevertheless, it may be profoundly and woefully true up to precisely the point at which Mr. Colton's argument for distribution becomes valid. If the public confuse good with bad, there are ways and means of training them to greater discrimination, and the ways and means suggested by Mr. Colton seem to us to be distinctly promising, always supposing that it is possible to correct the habit of glutting the wood-carvers with designs for embroidery. Apparently believing that "We needs must love the highest when we see it" is a saw of might, Mr. Colton simply urges the desirability of increasing our chances of "seeing it." It may be that you cannot create an artist and that you cannot create taste; but surely there are influences which tend either to foster or to quench the one or the other, and these influences are to some extent under control, and may even be brought into existence, swaying the balance for or against art. Otherwise how should the excessive popular demand be so deadly to genuine art? Yet we must sorrowfully admit the truth of the statement that spurious art gluts the market. Thousands upon thousands of "pretty-pretty" suburban villas put it beyond doubt or question. The "Times" writer's seeming paradox that the greater the popular demand for art, the scantier will be the supply of really artistic products, must necessarily include within its wide sweep the outlook for architecture; and it seems, incidentally, to involve the question of copyright, to which attention is given in a separate note; for would not copyright tend to check the multiplication of spurious imitations? But we must agree with Mr. Colton that Education and Art are really able to assist each other, rather than with the somewhat pessimistic assumption that the former brings the latter to the verge of starvation by encouraging the manufacture of shoddy imitations.

"No More Street Statues."

SOME strong—or at least strongly worded—objections to street statuary are expressed in homely fashion in the "Manchester City News" under the minatory heading, "No More Statues," in which the first sentence is, "Whatever form Manchester's memorial to King Edward the Seventh may take, it is to be hoped the city will be spared the infliction of another statue in its streets." The fault, it appears, is not always with the statues. "Two or three of the baker's dozen of statues which obstruct our streets possess artistic qualities of more than average merit, but none of them makes that appeal, or incites that measure of delight which its fine conception and clever execution warrant. Noble's Oliver Cromwell, at the foot of Victoria Street, is not only overshadowed and dwarfed by the great grimy buildings in its neighbourhood, but we have planted around it a small forest of tramway wires, and spun across it a network of electric wires almost hiding this fine work from view." We deeply sympathise. The ugly building may abuse the lovely statue, the ugly statue may ruin the lovely building; the network of electric wires impartially outrages both; having, however, more opportunities for the desecration and disfigurement of buildings, on whose very roofs it is as a loathsome parasite. All electric wires should be forthwith decently buried, and probably they would be but for the sordid consideration that it comes much cheaper to stick them up on poles. Apart from the admittedly very important question of suitability of environment, it is evident that, in most cities, existing street statues suffer cruelly from neglect. Remarking that a certain Irish statue of Goldsmith has been allowed to gather a green mould on its head, and that therefore the figure, instead of receiving respectful attention, provokes derision, the Manchester writer adds: "In our own still dirtier atmosphere, grosser disfigurations occur; streaking the marble cheeks with roulets of sooty tears, and hanging greasy, grimy stalactites from ears and nostrils, to say nothing of the defilement caused by stray pigeons and perky sparrows." In London there are statues in which the birds of the air have been undisturbed in the building of their nests, which is a monstrous pretty, but withal an inappropriate, juxtaposition of art and nature. These considerations may, perhaps, prevent the undue multiplication of statues to King Edward VII.; but, in any case, the street statues already in existence should at least be kept free from the defilement of grime and filth.

Architectural Copyright.

IN the columns of a lay contemporary four letters bearing the signatures of well-known architects, and a fifth letter that simply carries the initials "G.C.," discuss the question of architectural copyright. Mr. E. L. Lutyens thinks that while the general idea of protecting architects from the plagiarism now prevalent is a good one, it is doubtful whether a workable Act can be produced. He foresees, for instance, some considerable difficulty from the proposed dual ownership. "Having designed a mantelpiece for A's house, shall I need his permission if I wish to use the same design for B's?" Mr. Arthur T. Bolton thinks we cannot do better than proceed on the idea that difficulties exist in order to be overcome; and he cites, as instances of the kind of iniquity for which the law should provide a remedy the wholesale reproduction of a certain single-storey residence, and the caricaturing of an architect's own house in a building put up next door to it. Mr. E. Guy Dawber thinks that the proposals are obscure, but that if anything can be done to prevent speculative builders, and even some architects, from reproducing work of others without acknowledgment, the Bill contains "the kernel of an excellent Act." But the dubious points in the Bill must be thrashed out before it becomes law. Mr. C. F. A. Voysey says, *more suo*, that by claiming protection for architectural production you drag it down to the level of commercialism. "The artistic temperament must ever be producing, putting forth and giving; generosity of spirit is essential. It is the selfish commercial instinct that would wish to limit the production of beauty for personal gain. Therefore architecture as an art must be dishonoured by encouraging the artist to regard his productions of beauty from a commercial point of view. Nothing so degrades the artist as the thought of reward while at his work. When done, let him by all means attend to the commercial side of his life as a necessary consequence of his labour. But the production of beauty must be his main and primary concern, and he should welcome all the benefit his fellow-creatures are able to derive from his labour, even the influence for good that the feeble imitator may glean." This, like all Mr. Voysey's utterances, is very noble and beautiful. It recalls the rainbow splendours of Plato's Republic, Sidney's Arcadia, More's Utopia, and Ruskin's Fors Clavigera, to say nothing of the Fabian Essays. We are always grateful for Mr. Voysey's Pisgah views, and are always very willing to forgive him any little exaggeration of the æsthetic and altruistic side of architecture. But most of us, unlike Peter Pan, have been unable to refuse to grow up, and we are fortunate if in the process the visionary is not wholly eliminated. But among the stern realities before which the golden dreams of youth are so apt to fade like the baseless fabric of a vision, leaving "not a wrack behind," is—as, indeed, Mr. Voysey rather grudgingly admits—the necessity for making a living out of one's profession. The commercial side of architecture is in almost as much need of cultivation as the æsthetic; and there appears to be no earthly reason why the eminent architect should not be also a keen man of business, alert to insist on his rights as a citizen. And as a good citizen, he certainly will not—maugre the artistic temperament — disdain consideration of any legislative measure which, whatever its practical defects, is obviously designed for the furtherance of justice and equity. It has been shown in this journal—which was the first to present clearly and authoritatively the case for copyright—that on the Continent the architect's work is apparently protected without difficulty of administration, and without detriment to the profession and its art. At all events, the Bill deserves the close attention of all whose interests it affects. Whether its provisions, so far as they concern architects, are good, bad, indifferent, or merely impracticable, is for the profession to determine; and, for our part, we trust that they will grapple with the question with such determination and skill as shall prove once again that they are fully capable of paying due regard to both the business and the artistic side of their profession. For in the Bill both are undoubtedly involved.

New Use for Clock Towers.

SOME association of motorists has conceived the very businesslike idea of supplying to local authorities a most useful indicator of direction and distance. Incidentally, the indicator includes an advertisement of the association, which is perhaps admissible as a fair *quid pro quo*, although it might perhaps be urged that the convenience to members should have been a sufficient compensation. Our complaint, however, is not against the device of the motorists' association, but against the occasionally deplorable misuse of it by local authorities. In one flagrant instance that has been brought to our notice, a very respectable Jubilee clock tower, standing at the cross-roads of a London suburb, has been gravely disfigured by fixing to it some of these direction tablets. The effect is exasperating in the extreme. The occasion for regret does not begin or end with the disfigurement of the monument. It is symptomatic of indifference to art, and it perpetuates and propagates that indifference by the force of bad example. It is plain that there is a crying need for the formation of properly constituted committees who shall relieve borough councils and other local authorities of responsibilities which they are so ill able to bear. As a first step special committees might be formed, with the addition of architects.

NOTES AND NEWS.

London Fountains.

The Metropolitan Drinking Fountain Association have moved the fountain, formerly standing at the foot of the steps leading to the Royal Exchange, but now too small for the position, to a new position at the top of the steps leading to the landing stage by Blackfriars Bridge. For this purpose the remaining pylon of the old bridge at this point has been remodelled. Architecturally speaking, this remodelling is very far from good. The new fountain at the Exchange is to be 15ft. high and 13ft. wide. Its centre will represent a woman's figure holding a Roman lamp, and the stone used will be red granite. Who looks after these things we wonder.

Sir Thomas Lawrence's House.

According to a paragraph in the "Daily Graphic" of August 17th, the proprietors of the Imperial Hotel, Southampton Row, are taking No. 65, Russell Square, under a scheme of extension. This is the house in which Sir Thomas Lawrence, the great portrait-painter, lived for the last twenty-five years of his life, dying there on January 7th, 1830. In addition some part at least of the next house is also said to be included in this extension scheme.

"The Neglected Art."

A correspondent of the "Manchester Guardian" applies the above tribute to Architecture after the London correspondent of that paper had applied it to sculpture. He believes that "we have as fine an architectural and its allied sculptural power as ever was known. One need only point to Street's Law Courts, with its enchanting detail, chiefly from that great man's own hand, and the truly noble interior of the Roman Cathedral at Westminster. These are specimens in two different styles at their highest. Then there are countless modern houses of great beauty and fine style." Well, this betokens a discriminating taste. But the reason for the lowering "in architectural quality," in our new city buildings is then disclosed. "It is," the correspondent avers, "the rigid iron skeletons which are now in use everywhere. Everything is conditioned by this grim rigidity, and how the great professions of sculpture and architecture are going to encase these frames in the future with anything like the delightful exteriors of the best in the past remains to be seen. I could point to a score of recent buildings in our own city [Manchester] where the ghastly ugliness of exterior is obviously owing to the unyielding mass behind or within. It is seldom that a finely gifted architect gets his full chance. The opinionated committee, the desire for cheapness, the dirt and grime of the atmosphere, and now this all-prevailing structural demon, are enough to kill anything. Opinions differ as to whether the new metal skeletons are cheaper and safer than the old tried methods. That they are ruinous to the play, the dignity, of what we know of architecture, and the crafts that cluster round it, there is no doubt. We are in a grim, materialistic age, and this is shown with tremendous and deadly force in most of our modern buildings and their decorations." We are afraid that the rigid iron skeleton (apart from the fact that it has come to stay, and must be endured) is not responsible for faults of the outer skin. Too often we fear the hidden steel frame is the only part in a building which is true, direct, and architectonic.

Against Back-to-Back Houses.

In the Local Government Board Report by Dr. Darra Mair on back-to-back houses, which was issued last week, this method of building is again condemned as being relatively insanitary. The same broad conclusion had been reached in 1887 by Dr. Barry and Mr. Gordon Smith, whose evidence was derived from Salford; in 1903 by Dr. Herbert Jones, whose investigations refer to Shipley; by Dr. Niven, who dealt with nine Manchester districts; and by Dr. Evans, Medical Officer of Health of Bradford. Dr. Darra Mair's investigations cover a much wider area, include a much greater variety of factors, and exhibit a good deal of scientific refinement on the mere collection and tabulation of crude statistics, and he finds that even relatively good types of back-to-back houses, when compared with through houses, have a death-rate from all causes which is fifteen to twenty per cent. greater than the death-rate in through houses. This excess, however, is not evident in back-to-back houses built in blocks of four, which, unlike those built in continuous rows, possess some degree of cross-ventilation. The corrected death-rate for the three types of houses compared was as follows:—Through houses, 15.51; back-to-back houses, with side ventilation, 15.69; back-to-back houses without side ventilation, 17.94. The mean annual corrected death-rate per 1,000 at all ages was found to be as follows: (a) Pulmonary diseases, excluding phthisis, 3.16 (100) in through houses, 4.44 (141) in back-to-back houses, excluding those having side ventilation; (b) for infectious diseases, the relative figures, given in the same order, are 1.35 (100) and 1.60 (119); and (c) for phthisis, 1.15 (100), compared with 1.29 (112). It is admitted that the rent of back-to-back houses is materially less than that of through houses; but it is observed that "as much of this cheapness of back-to-back houses seems to depend not only on the fact that there are fewer walls to build, but also on the fact that, on a given area of land, it is possible to erect a greater number of back-to-back houses than through houses, the advantage is perhaps of doubtful value." The Report, of which a summary appears on p. 219, justifies the attitude on the subject that has been consistently assumed in this Journal, often in face of somewhat vehement opposition.

Granite Memorials.

An interesting account of the Scottish granite industry appears in the August issue of "Cassier's Magazine," in which Mr. William Diack remarks that while importing granite to Aberdeen may seem like carrying coals to Newcastle, nevertheless the amount of foreign material—from Norway, Sweden, Russia, etc.—which entered the stoneyards of Aberdeen in 1908, a normal year, was no less than 27,000 tons. The stone may be brought to Aberdeen from Sweden and Norway with less trouble and expense than from inland Scottish quarries, some forty miles distant. The first statue cut in granite since the days of the Ptolemys, the author asserts, was that of the last Duke of Gordon, which stands in the Castlegate of Aberdeen, and was cut more than thirty years ago by Messrs. Alexander Macdonald and Co.

The Mistress Art and the Handmaiden.

Those who regret always the separation of sculpture from architecture will not be particularly grateful to Mr. C. Lewis Hind for his adulation of Donatello, who is alleged to have procured the divorce. "In Egypt and Greece they loved a statue for its own sake; but the mediæval cathedral builders, those nameless craftsmen, were content to let their figures and reliefs blossom from the stone, until a wonder-child was born in 1836—Donatello. He is the founder of sculpture in its modern sense, divorced from architecture, and the oftener one sees his work, the more one wonders. Explain Donatello and you explain that over-used word—genius." He thinks that, if Mr. Colton's Artillery Memorial may be taken as an augury, it may be that in the Mall architecture and sculpture may be again wedded. He thinks that while much modern British work, as exemplified in specimens at the Japan-British Exhibition, is dull and uninspiring, there are, on the other hand, a few delightful things there, such as those statues and reliefs that are the work of Mr. F. Derwent Wood. Mr. Hind, therefore, does not despair of British sculpture; and it is obvious that, despite his worship of Donatello, he is still free to admire sculpture which, as he says, was, ages ago, "the handmaiden of architecture, growing graciously from the fabric." Such sane and catholic-minded criticism as that with which he is popularising Art among such of the readers of the "Evening News" as have the good sense to turn to his occasional column, is a gratifying portent.

A New Type of School?

The London County Council Education Committee have just inaugurated their new scheme of Central Schools, which are "to serve as a bridge between the elementary and the secondary school," suitable pupils being drafted from the elementary schools for instruction in such subjects as may give them a definite bias towards some kind of industrial or commercial work. Provision has been made for ten such schools, which are situated in Kensington, Brixton, Mile End, Haverstock Hill, Hackney, Deptford, and St. Pancras. If the scheme turns out to be successful, a new type of building may be required to meet conditions that, if there is any vitality in the movement, are certain to diverge from stereotyped precedent.

The Architectural Steelwork Problem.

Mr. Walter J. Pearce writes from Vron, Bull Bay, Anglesey:—"As a logical lover of fine architecture, I am hoping that architects will seriously set themselves, as one or two have done already, to the real problem that confronts them. This, in my opinion, should be to compel modern structural methods to their own peculiar possibilities of line, grace, dignity, and beauty. To attempt to 'encase' steel construction in a preposterous veneering that pretends to the world that the structure is built of something other than its real material is not, in my opinion, architecture at all. I believe it to be quite possible to invest the meanest and cheapest of iron construction with interest and beauty. Proofs that this can be done are constantly cropping up. Note, for instance, some of the detail of the Franco-British Exhibition temporary buildings—say the towers of the Palace of Women's Work, in which the ironwork was overlaid with plaster in such a way as to emphasise the principles of construction and not disguise them. It gave the observer intense satisfaction, reminded him of no particular precedent or style, but seemed as fitting as the skin and muscle that overlay the bones of the human structure. When architects cease to leave the design of the framing to the engineer, who is too often bounded by the tee-square and plumb-rule, and put their own vigorous conception into the very bones of the structure, we shall see a real improvement in the exterior appearance of steel-constructed buildings." This letter appears in the "Manchester Guardian" of August 20th. There is nothing in it that can be regarded as aggressively novel; and one cannot withhold admiration for the sanguine courage with which the writer associates beauty with ironwork that is mean and cheap even unto the superlative degree. Doubtless Mr. Pearce's superlatives are merely rhetorical; and that point being waived, we are, as our readers are very well aware, quite willing to concede that structural ironwork can be made interesting and beautiful, although this admission does not commit us to unreserved approval of Mr. Pearce's instance.

Ivy and Architecture.

The enormous growth of mean architecture during the last 60 or 70 years is the reason, according to a "Times" leader-writer, for the enthusiasm lavished on ivy and other climbing plants, since "the most unattractive dwelling-house or tastelessly ornate church or public building becomes comparatively inoffensive" if "sufficiently masked by a hanging ivy-bush or a tight-fitting uniform of ampelopsis. At the same time, the writer protests against the concealment of many architectural features in the historic ruins of Britain even by a picturesque but confused growth of verdure; and he takes occasion to point out the damage to old and mouldering walls which may result from neglecting these overlying encumbrances. In many cases the unchecked growth of ivy not merely conceals but destroys our old ruins. It is doubtful if the younger and thinner shoots do any real harm; but when the ivy plant becomes a veritable tree, and drives sinuous stems, as thick as a man's arm, into the joints and interstices, the stems act as living wedges, and prise the wall asunder as they grow. Serious damage may result from the growth of trees or shrubs on the top of the walls, the result of bird sown or wind blown seeds; and not less harmful are trees which obtain a foothold close to the foundations of old walls, and undermine them at the base. As an example of the intelligent use of climbing plants upon ancient ruins the work of Commendatore Boni in replanting the Forum at Rome is mentioned. "Ivy and flowering plants have here been used to beautify bare corners and to conceal the supports and buttresses of new masonry which it has been necessary to insert in various places. On the other hand, nothing is allowed to grow where it can either hide or injure any existing feature of interest, or might impede future excavation at any likely point. It is to be wished that all our own famous architectural sites were watched over with equal providence and good taste."

The New Admiralty Buildings.

The First Lord of the Admiralty has decided to retain as his official residence the old building in Whitehall which for so long a period has been the political home of many rulers of the Navy. The premises, which have access to the Horse Guards Parade, had at one time a tiny garden, which, however, has been completely swept away to make room for the new Admiralty buildings. The residence nearest the offices of the London County Council will be tenanted in due course by the First Naval Lord. The remainder of the new buildings at the end of Processional Road are already occupied by the Director of Works, hitherto in Northumberland Avenue; the Royal Marine Office, also removed from the same thoroughfare; the Medical Department, until the present time in Victoria Street; the Superintendent of Contracts; and the Library, wherein is housed a valuable collection of books relating to the naval history of the country.

John Dobson's House.

A writer in the "Northern Echo" draws attention to the lamentable state of the house of John Dobson, the architect who designed the Central Station and many other notable buildings in Newcastle, and also this house in New Bridge Street. "Like all his productions," we are told, "it was very solid, and in its erection only big, fine stones were used for the exterior. Long ago the house disappeared from view. An enterprising bill-sticker had filled in the windows and doors with wood, and on three sides the once noble house now does duty as a bill-posting station. A further indignity has lately been offered to it, in that the railings which ran along the front have also had boards attached to them, and now also do duty in displaying posters. As the interior is now also used as what the proprietor euphemistically terms a "Temperance Hotel," with beds—good beds—at 6d. per night, it is not likely that the premises can fall any further in the social scale." Our contemporary appropriately heads its paragraph: "Departed Glory."

A Georgian Engraver.

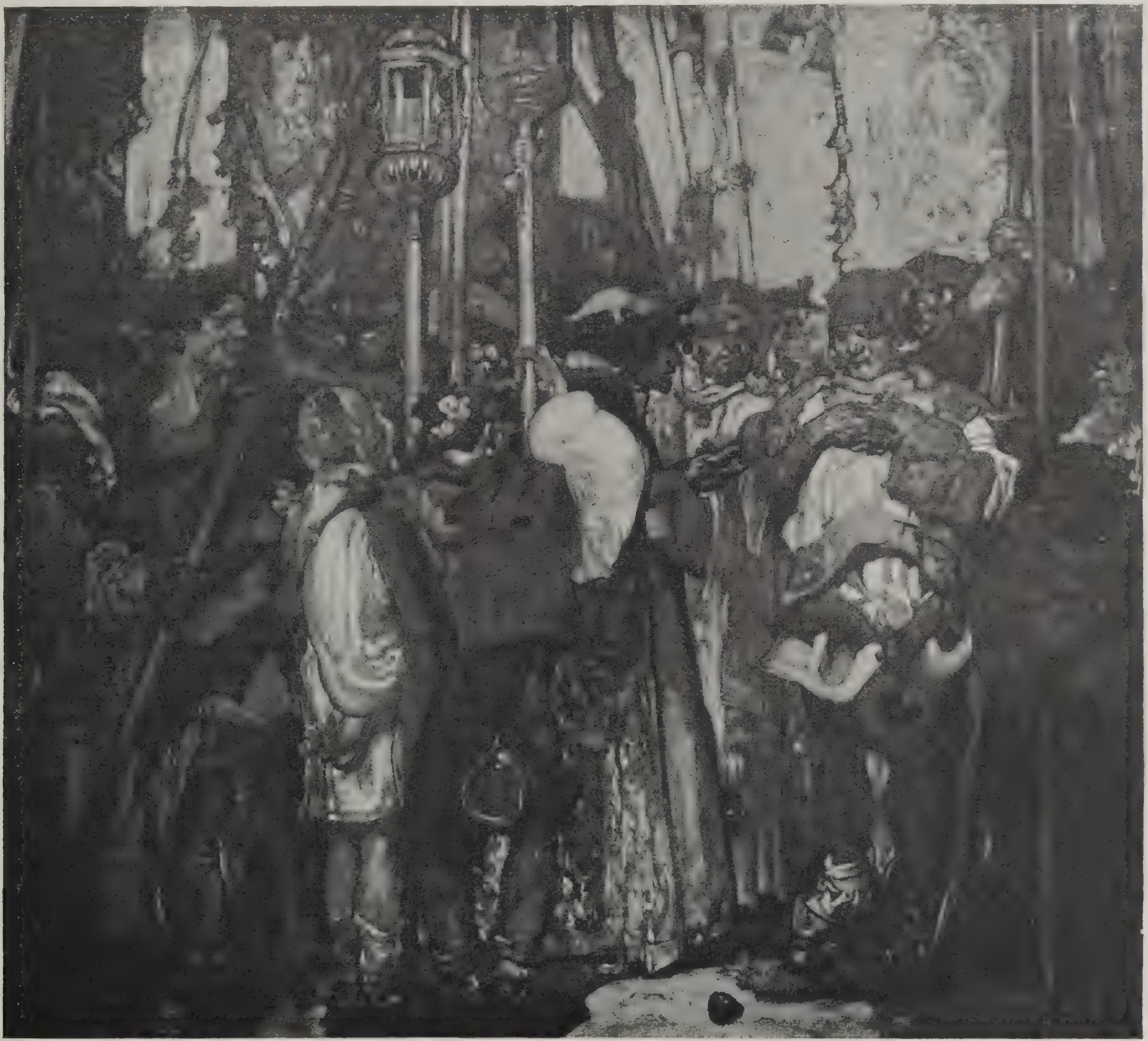
The old building on the north side of Chiswell Street associated since 1735 with the famous type-founding firm of the Caslons has been handed over to the house-breakers, the business having been transferred to new premises nearly opposite. William Caslon, the first of the line, was born in 1692 at Cradley, Worcestershire. He served his apprenticeship to an ornamental engraver of gun locks and barrels, and in 1716 set up in that business in Vine Street, Minories, and added tool-making for bookbinders and silver-chasers. In the same year an eminent printer, John Watts, recognised Caslon's skill in cutting binders' punches, and employed him for that purpose as well as for cutting type-punches. He also gave him the means to fit-up a small foundry and introduced him to other printers. Caslon's business grew, and in 1735 he removed to Chiswell Street, where he carried on work so successfully that he eventually surpassed all his Continental competitors, and was called by them "the English Elzevir," being particularly famed for his beautiful execution of Roman, italic, and Hebrew type. He was noted for his hospitality, and was fond of entertaining his guests to musical evenings at Chiswell Street, where Handel frequently delighted the company by his playing. Dying at his "country residence" at Bethnal Green in 1766, William Caslon was succeeded by his sons, and since then the business has been carried on uninterruptedly in the building which Londoners will know no more.

The Romford Garden Suburb Competition.

Referring to our note under this heading last week, we desire to add some further necessary particulars which were not then available. In the first place, Mr. John Burns, M.P., President of the Local Government Board, has consented to become President of the Exhibition next year. The dates for the sending in of designs have also been amended. In Class I. (a detached house to cost £500) and Class II. a detached house to cost £375) the designs must be submitted by October 31st, 1910. In Class V. (garden design for house or cottage in Classes I. or II.) and Class VI. (Perspective drawing, suitable for reproduction of a house or cottage entered for competition in Classes I. or II.) designs must be submitted by the 30th of November, 1910, and in Class IV. (town plan of Gidea Park) designs must be sent in by March 31st, 1911. The directors of the Romford Garden Suburb will purchase 12 of the houses and cottages erected by exhibitors. Arrangements are also being made by which at least three-quarters of the cost of the erection of all competition houses will be advanced to competitors.

The Decoration of the Skinners' Hall.

Mr. Frank Brangwyn has during the past few years built up a great reputation for himself as a decorative painter, and it will be further enhanced by the fine series of decorative paintings which he has executed for the Skinners' Company's Hall. In all there are eleven canvases, five on each side of the hall, each 9ft. 6in. high, and one at the end over the minstrel gallery. Ten of them memorise striking incidents in the history of the ancient and worshipful company; the eleventh is a figure painting of purely imaginative character. The following is a list of the paintings in chronological order as they are placed. I. Skin merchants or Skinners selecting furs and pelts at the City mart in the days before the Guild of Corpus Christi received its charter. II. The granting of a charter to the Skinners' Company by Edward III., March 1st, 1327. III. A river procession of the City's and the companies' barges to Westminster, A.D. 1453. IV. The opening of the strife between the Skinners and the Merchant Taylors, A.D. 1484. V. The founding of Tonbridge School by Sir Andrew Judd, A.D. 1553. VI. An incident in the defence of London Bridge by Sir Andrew Judd, A.D. 1554. VII. A City pageant in the Olden Times. VIII. The departure of Sir James Lancaster for the East Indies, A.D. 1594. IX. Reception of General Monk at the Skinners' Hall, April 4th, 1660. X. Sir Thomas Pilkington's Banquet to King William III. and Queen Mary, A.D. 1684. XI. "Harmony." In deciding the merits of these works one must recognise that Mr. Brangwyn makes no attempt at archæological accuracy in costumes or scenes. One cannot tick off their exactitude like photographic records in a museum. But in their main purpose, the decoration of the



THE OPENING OF THE STRIFE BETWEEN THE SKINNERS AND THE MERCHANT TAYLORS. A.D. 1484. ONE OF THE SERIES OF DECORATIVE PAINTINGS IN THE HALL OF THE SKINNERS' COMPANY, BY FRANK BRANGWYN, A.R.A.
(Reproduced by permission of the Skinners' Company.)

hall, they succeed magnificently, and the Skinners' Company are to be congratulated on the possession of so fine a scheme of decoration so worthily commissioned.

The Scottish System of Tendering.

The Scottish system of dividing a contract into several trades, and making each tradesman directly responsible to the proprietor, seems to be gradually yielding place to the English practice of placing the job in the hands of a single contractor. A "Glasgow Herald" correspondent deprecates the change. In some cases, he admits, and in very small contracts, it may be necessary; but with such a splendid system of specification and measurement as has been evolved and made nearly perfect by the architects and measurers of Glasgow, single contracting is in most cases not necessary. "Suppose," he argues, "a mason has taken over the whole contract; can he be expected to take all the details of the plumber work from the architect? The technical knowledge required for each trade is such that a mason cannot be expected to judge of the best manner of carrying on plumber work." He objects, further, that the single contractor generally proceeds to set one sub-contractor to bid against another until "the sub-contractor's prices are so cut that either he is going to have no profit or the work and material used are going to be inferior." Nevertheless, the cost of building is bound to be greater, for "off each trade there are going to be two profits taken, viz., the main contractor's profit and the sub-contractor's profit." Whether or not there is any force in these contentions we prefer to leave it to our Scottish readers to decide. We would remind them, however, that, south of the Tweed, an innovation of which fears have been expressed is almost the reverse of that which is alarming our Scottish friends. The complaint here is that there is a marked tendency to make too much of the specialist. The conditions, however, as between England and Scotland, present so much variation, that any attempt at comparing them might easily give rise to false impressions, and we therefore do not insist on the comparison. It may be, however, that the two systems are on the eve of becoming more closely assimilated.

The House-breaking Nuisance.

Holborn Borough Council has not seen fit to adopt the proposals submitted by its Public Health Committee with regard to the rendering less inconvenient the demolition of buildings; and the "City Press" comments that "it is permissible to house-breakers to pull down buildings how and when they please, irrespective altogether of the inconvenience or the comfort, to say nothing of the health, of residents and passers-by." Our contemporary further remarks, with a perhaps pardonable tone of self-righteousness, that in the City there have been in operation by-laws upon this subject which are much more drastic and far-reaching than those which Holborn has just rejected, and that they have worked admirably all round, causing inconvenience to none, and adding immensely to the amenities of living in the "one square mile." One specially beneficent provision of the City by-laws is that which secures comparative — and indeed almost total — immunity from what is perhaps the chief nuisance of house-breaking—namely, the scattering of dust. No matter how occasioned, floating dust, acting, as it does, as a vehicle for the dissemination of disease germs, as well as a mechanical irritant, is always a serious menace to health; and when it comes from the partial pulverisation of old houses in which generations of people may have suffered and died from all kinds of loathsome and deadly diseases, there is an imperative necessity for minimising its creation and spread. And the ruination it causes to goods in adjacent property, as well as the custom it drives away where the neighbouring premises are in business use, are surely considerations that should not have been lightly ignored; nor should the health and comfort of the house-breakers themselves, who, while they certainly have the remedy in their own hands, are but little likely to adopt it unless they are compelled.

DISCOVERY OF THE PLANTAGENET TOMBS AT FONTEVRAULT.

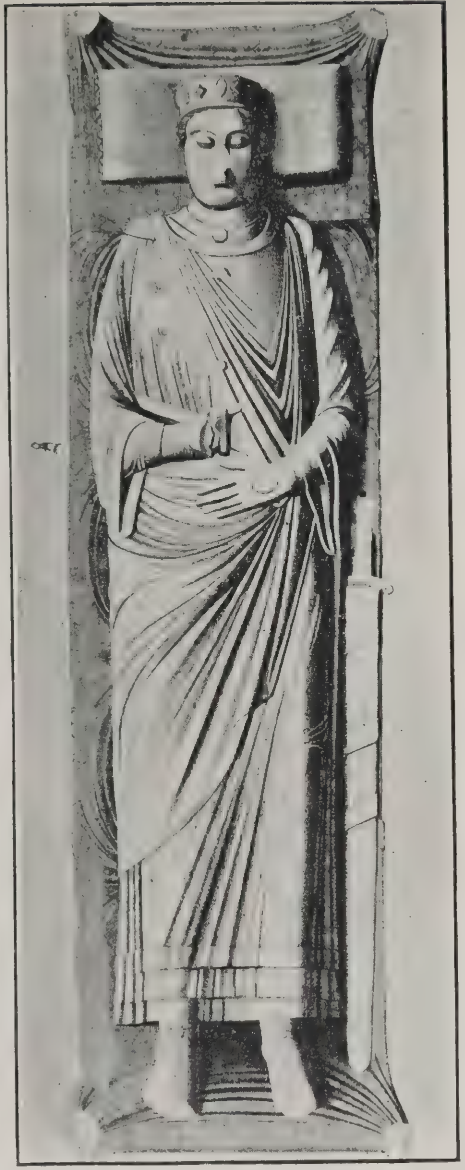
In an article by Mr. Cecil Hallett, which appeared in the "Architectural Review" for June, 1902, attention was drawn to the vicissitudes of the ancient abbey of Fontevrault, once one of the wealthiest monastic churches of France, which was dissolved with much sacrilege and violence at the great Revolution, and under Napoleon I. became a house of correction, in which state it still remained at the date of the above-mentioned article.

The chief interest to English readers in the church, besides its interest architecturally, lies in the fact that it was the burial place of the remains of several of our Plantagenet kings. We say remains advisedly, as, though only the kingly bodies of Henry II. and Richard I. were there interred, the hearts of John, Henry III., and, it is believed, of Edward I., also found sepulture at Fontevrault. Eleanor, Queen of Henry II., Joan, Queen of Sicily, sister of Richard I., and her son, Raymond VII., Count of Toulouse, and Isabella, Queen of King John, were among the other Royalties buried there; and it is believed that there were cenotaphs of Berengaria, Queen of Richard I., and of Eleanor, Queen of Henry III. The six splendid royal tombs, with effigies, were disturbed in 1504, and again in 1638, when the figures of Raymond and Joan were renewed, and the six effigies were placed against the north choir wall in a grandiose classical sculpture. Fortunately the effigies of Henry II., Richard, Eleanor, and Isabella have survived, and though moved about many times since the great Revolution—once even to Paris—and after repeated fruitless negotiations on the part of the British Government to acquire them for Westminster Abbey, they were at last allowed to rest in the apsidal chapel of the south transept, where they lie behind an iron grille with their feet to the west. One (that of Isabella) is of wood; the rest are of stone, and all are life-size and coloured. The four sovereigns are represented as lying in state on draped biers, and as wearing royal robes and crowns.

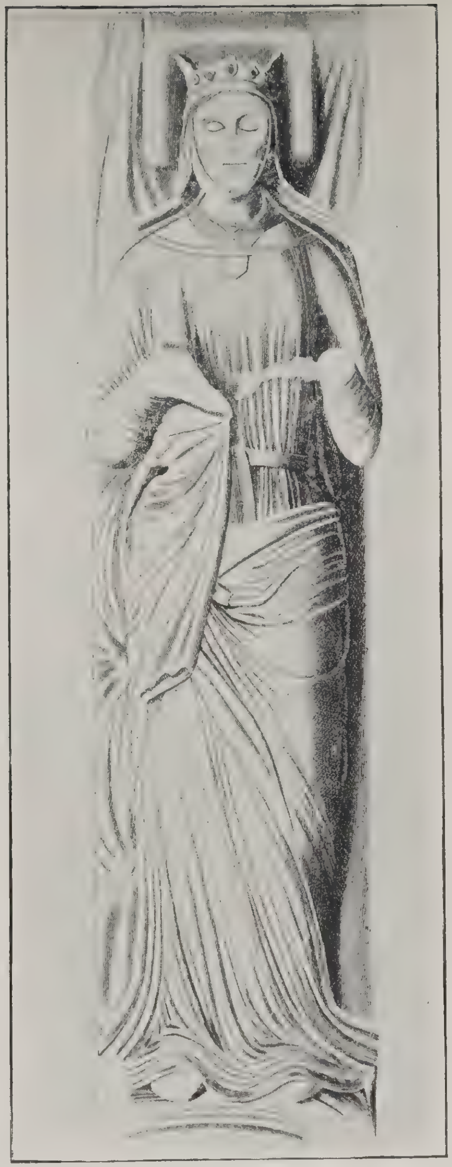
Since the date of Mr. Hallett's article, and possibly in consequence of conversations he had with Government officials, and of representations then made, the French Government began to take an interest in Fontevrault, and in a further note which Mr. Hallett contributed to the "Architectural Review" in December, 1903, he mentioned that the French Government had decided upon and commenced the task of restoring Fontevrault, the work being carried out by the Administration des Beaux Arts. At that time the exact position of the Royal tombs was unknown.

They have now been discovered by M. Lucien Magne, Government Inspector-General of Historical Monuments, and the "Times" Paris Correspondent, under date August 21st, gives some details of the discovery. The nave floor has been lowered to its original level, and the seventeenth century partition that had been built up against the wall of the transept has been pulled down. Traces of inscriptions and paintings were then discovered in an arched recess of the north-west wall of the transept. This ornamentation consisted of gold crosses, six escutcheons, and traces of heraldic devices in gold representing leopard's paws. Under this ornamentation there remained traces of names inscribed in a line, the first name ending in "T." The names of "Richard," "Alienor," and "Henri" were clearly decipherable. Under the floor below these inscriptions were found the tombs of Richard I. and of Queen Eleanor, protected by a sort of vaulted roof composed of debris. Next to them were the tombs of Henry II. and of Isabella of Angoulême.

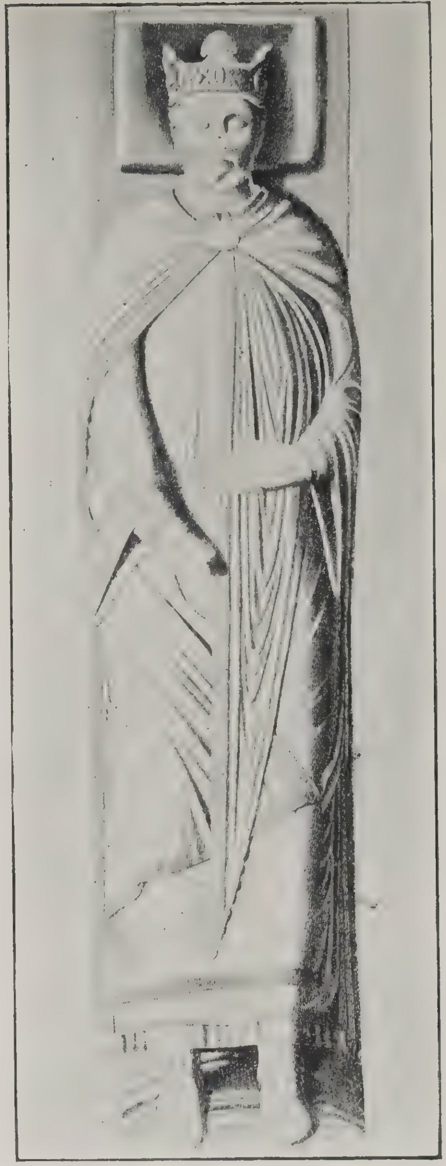
The skeleton of Henry II. was doubled up in order to shorten the tomb so that it might serve to support the vaulted arch designed to protect the second pair of tombs. It is thought that this was done by the sixteenth century builders when they transferred the tombs to the side chapel. The "*Journal des Débats*" holds out some hope that the tombs may ultimately be moved to their original place at the entrance to the choir.



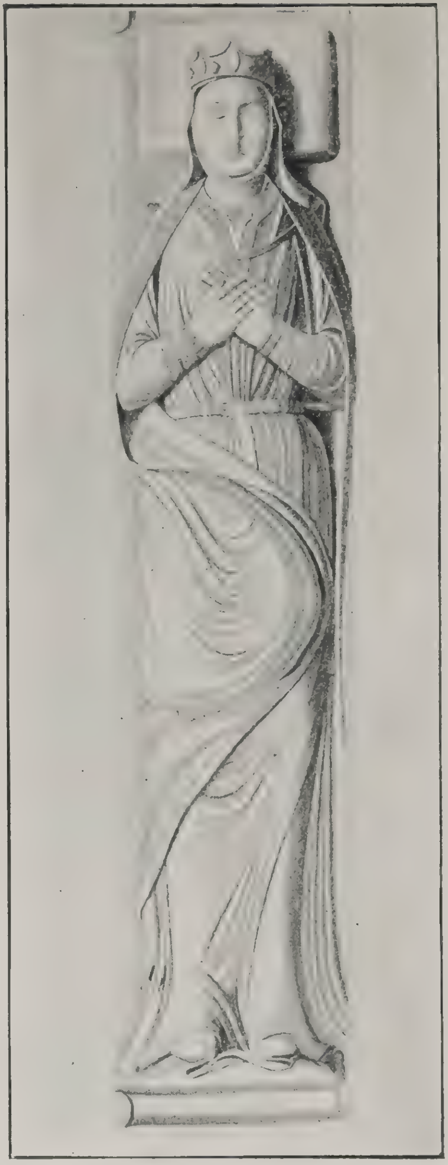
Henry II.



Eleanor, Queen of Henry II.



Richard Cœur de Lion.



Isabella, Queen of King John.

EFFIGIES ON THE ENGLISH ROYAL TOMBS AT FONTEVRAULT ABBEY, FRANCE.

(*From Stothard's "Monumental Effigies."*)

CORRESPONDENCE.

R.I.B.A. Town Planning Conference.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Owing to recent legislation, a new era of town planning and reconstruction is about to open in the United Kingdom. That there is no danger of the legal and public health aspects of the question of receiving inadequate attention is already clear. But it is equally important in the interest of our own future generations alike, that the artistic side of such improvements, with its lasting result in beauty and convenience, be not less fully and authoritatively considered.

With this object, the Council of the Royal Institute of British Architects have made arrangements to hold an International Town-Planning Conference, of which His Majesty the King has graciously consented to be Patron, on a comprehensive scale in the second week in October, and we are glad to state that we are already assured of the participation and assistance of many of the most distinguished experts on the subject, not only of our own country, but of Europe and the United States, as well as of others from the overseas Dominions of the Crown.

By an act of disinterested generosity on the part of the president and members of the Royal Academy, the Galleries at Burlington House have been placed at the disposal of the Royal Institutute for the display of the notable designs and illustrations of town planning and remodelling which have been collected from all parts of the world.

In order that the proceedings of the Conference may be of the widest utility, and that the welcome offered to our numerous foreign guests may be of the most representative character, we desire, by your courtesy, cordially to invite the presence and co-operation of all those who are concerned in order to secure the best results from a movement of not merely local, but national, and even imperial, importance.

Forms of membership, and all particulars, may be obtained from the secretary of the Royal Institute.

We are, Sir,
Your obedient servants,
JOHN BURNS,
Honorary President of the Conference.
LEONARD STOKES,
President.
ASTON WEBB,
Chairman of the Executive Committee.
JOHN W. SIMPSON,
Secretary-General.

Temporary Exhibition Buildings.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Those of us who have been associated with exhibition work, as I have for several years, in England and elsewhere, must have read with peculiar pleasure your interesting article on this subject. The only point one would venture to criticise is the idealistic declaration that nothing else but concrete-steel ought to be countenanced for temporary exhibition buildings in future. Even governments do not willingly spend more money on exhibition buildings than they hope to get back, and certainly semi-national exhibitions instituted primarily by companies or private individuals would be very rarely promoted if the cost were so largely increased as the article suggests. Large exhibition buildings constructed of steel, the whole of which had to be enclosed in concrete and modelled in cement, would probably cost nearly as much as so-called permanent construction, and would, in fact, not be temporary buildings at all, if the expression has any reference to the time they would last if permitted to remain. Plaster has made exhibitions possible all the world over, and in spite of your authoritative verdict, I think that steel buildings with wood studding to receive fibrous or ordinary plaster is amply sufficient for safety, if efficient fire protection is provided, and assuming sensible control of all interior fittings and decoration of stalls and partitions.

The article was wholly admirable in emphasising the temporary and decoratively festal character of exhibition buildings, and that essential idea is always present, no doubt, in the minds of exhibition architects, though the dominant views of clients are not always to be evaded, however much mistaken and unæsthetic or even imitative. French architects seem to have a natural genius for delightful novelty in exhibition design, and are perhaps allowed a freer hand, though possibly the Glasgow Exhibition had done work worthy almost of as much praise as your article so rightly awards to the Paris Exhibition of 1889.

Yours faithfully,
A. O. COLLARD.

Courses in Reinforced Concrete.

In reply to a Birmingham correspondent in our last issue on the question of lessons in reinforced concrete, we recommended him to attend a course of lectures in reinforced concrete construction to be given in London next session, failing which we were at a loss what to recommend. The Embankment Engineering Institute, of 64, Victoria Street, Westminster, S.W., draw our attention to the fact that they have been conducting a course of correspondence tuition on the subject for some years past.

MEMORIALS TO THE LATE KING.

Sunderland.

It is suggested that the memorial here shall take the form of a fund to furnish and equip the Children's Hospital. The building has already been erected, but cannot be opened because the £5,000 required to equip it is lacking.

London.

Fresh suggestions for a suitable memorial continue to reach the Mansion House Committee. Among the latest is one for the building and equipment of a National Institute of Medical Research on the lines of the Rockefeller Institute, New York, also one for the purchase of the Crystal Palace for the Nation.

The following names have been added to the Lord Mayor's Committee of the Mansion House Fund for providing a memorial to King Edward in London:—Lord Stalbridge, Sir Trevor Lawrence (President of the Royal Horticultural Society and late treasurer of St. Bartholomew's Hospital), Sir William Crump, Sir Walter Johnson, Mr. George Alexander, Brigadier-General Henry N. C. Heath, C.B. (Master of the Grocers' Company), and Mr. G. H. Ryan (President of the Institute of Actuaries).

Chester.

It has been decided to reconstruct the Chester Infirmary at a cost of £25,000, and towards this it is proposed to appropriate the surplus resulting from the recent Chester Pageant.

SOCIETIES' REPORTS.

Royal Sanitary Institute.

The preliminary programme has been issued of the twenty-fifth congress of the Royal Sanitary Institute, to be held at Brighton from September 5 to 10. There will be a reception of the members and delegates in the Royal Pavilion on *Monday September* 5, at 1 p.m., by the Mayor of Brighton (Councillor Edward Green), and this will be followed, at 1.30, by a public luncheon in the Pavilion, at which the Mayor will preside. Afterwards, at 3 p.m., the Mayor will open the exhibition, and between 7 and 8 p.m. he will receive the members and delegates in the Royal Pavilion, where the inaugural address to the Congress will be delivered by the Hon. Sir John A. Cockburn, K.C.M.G., M.D. On *Tuesday, September* 6, at 8 p.m., in the Royal Pavilion, Dr. Arthur Newsholme, Principal Medical Officer, Local Government Board, will deliver a lecture. On *Wednesday, September* 7, at 8 p.m., there will be a conversazione and reception in the Pavilion, at the invitation of the Mayor. The meeting of the Engineering and Architecture Section will be held at 10 a.m. on Wednesday, September 7, when Mr. Baldwin Latham will introduce the subject of "The Influence on Health of the various levels in Subsoil Waters," and "School Planning" is also set down for discussion. On *Friday, September* 9, at the same hour and place, Dr. Alex. Hill will deliver a popular lecture, illustrated with lantern slides, on "The Bricks with which the Body is Built." At 3.30 of the same day, there will be a garden party at the Royal Pavilion.

Glasgow and West of Scotland Technical College.

The Calendar for the one hundred and fifteenth session (1910-11) of the Glasgow and West of Scotland Technical College is a stout volume of more than five hundred pages, giving full particulars of the rather multifarious activities in which this institution is engaged. These include the operations of the Glasgow School of Architecture. The director of architectural studies and professor of architectural design is Professor Eugène Bourdon, B.A., and the subjects are divided between the Technical College and the School of Art. In the former, Professor C. Gourlay, B.Sc., A.R.I.B.A., deals with the History of Architecture; and Mr. James S. Boyd deals with Constructive and Historic Design; while among the assistants are Mr. Vernon Constable and Mr. A. G. Henderson, who are both associates of the R.I.B.A. In the same college, the teaching of mechanics, mechanics of structures, natural philosophy, chemistry, and geology, is in the hands of well-qualified experts; and the same observation applies to the School of Art, in which the subjects are—Architectural Design (Prof. Alex. McGibbon, A.R.I.B.A., with an instructor and assistant); Drawing, Antique and Ornament; Modelling—Life, Antique, Ornament; and Design and Decorative Art; while the Life School has for its professor so accomplished an artist as Mr. Maurice Greiffenhagen. It is noted that, on the recommendation of the Glasgow Institution of Architects, December 12, 1906, the Royal Institute of British Architects granted that: "The Diploma or the Senior Certificate of the Glasgow School of Architecture (the latter with the full preliminary examination of that school) exempts from the Preliminary and Intermediate examinations of the R.I.B.A." There are day and evening courses, and bursaries are awarded in both.

BOOKS.

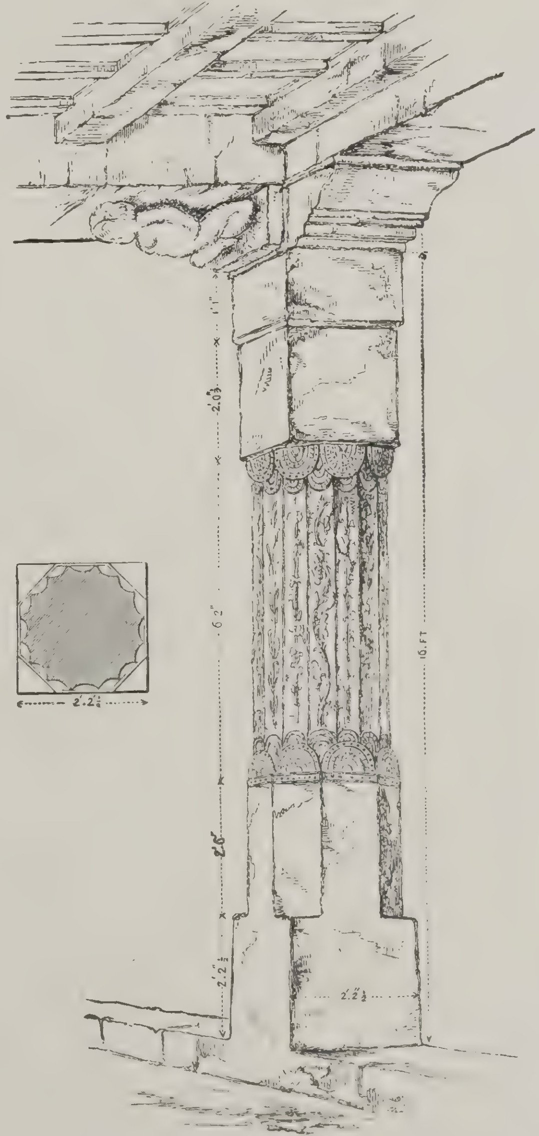
History of Indian and Eastern Architecture. By the late James Fergusson. Revised and edited, with additions, by James Burgess, C.I.E., and R. Phené Spiers, F.S.A. Two vols. London: John Murray, 1910. 42s.

It is thirty years since Fergusson's treatise on Indian and Eastern architecture made its first appearance, occupying what was at that time almost absolutely new ground to the majority of architectural students. It was only natural that an author making the first intelligent and comprehensive treatise on a subject that he had studied for many years and made his own should have attached an importance to it which few of his readers were quite prepared to accept. To those accustomed to regard architectural history as the study of the Greek, Mediæval, and Renaissance styles, with all their intellectual interest and artistic beauty, it seemed almost monstrous that we should be asked to follow out the misshapen forms and barbarous detail of many of the objects delineated in this book, as if they belonged to serious architectural history. To those who accused him of dogmatising in regard to the history and relations of some of these styles, on insufficient data, the author had a satisfactory answer in the preface to his own second edition. No one, he said, could direct his mind for forty years to the earnest investigation of any department of knowledge, and not become acquainted with a host of particulars, and acquire a species of insight which neither time nor space, nor perhaps the resources of language would permit him to reproduce in their fullness. "I possess," he added, "to give a single instance, more than 3,000 photographs of Indian buildings, with which constant use has made me as familiar as with any other object that is perpetually before my eyes, and to recapitulate all the information they convey to long-continued scrutiny would be an endless, if not an impossible, undertaking." That is a perfectly reasonable claim, and we have no doubt that Fergusson's knowledge of the details and the historical relations of the structures described in his treatise were quite exceptional, and such as entitled him to express decisive opinions on the subject.

But as to Fergusson's exaggerated views on the architectural merits of the great mass of the architectural monuments of India which he had, in a sense, discovered for the European world, opinion at the present day will hardly differ much from what it was thirty years ago. The historical study of man is important on the principle of *humanum nihil a me alienum puto*; an immense population, over an immense tract of country, had for successive centuries built thus and thus, and the mere fact that they had done so makes part of the study of human history. But to class a great deal of this as architecture of any artistic interest is absurd. A great proportion of it is barbarous stuff, ugly and abnormal in outline, deficient in any refinement of moulding (which is one of the great tests of architectural taste), and covered often with grotesque ornament applied without any sense of selection or artistic restraint. It is only when we come to the Indo-Saracenic architecture that we find anything that really deserves the name of architectural art. Much of that is of the highest class, and of the greatest beauty. But in its architectural forms and relationship it has closer connection with Persia than with India.

Although the book in its present form fills two volumes, each of the apparent size of the one original volume, the additions are not so extensive as this increased size would imply. The paper appears to be thicker, which probably makes the difference. The history of Indian architecture has, however, been extended from 610 to 785 pages, and the illustrations in the text increased by 98, besides 34 plates from photographs. These last are an important addition, as the system of printing illustrations direct from photographs was hardly in use when the original work was issued, and they are, of course, far more trustworthy as giving the most truthful representation of the state of a building. On the other hand, many of the original engravings in the text are by no means so well printed as in the original work. Whether this is the difference in the paper, or whether the blocks are worn, or have been reproduced by a process which has taken something from their effect, we do not know; but anyone who compares, for instance, the illustration of the tomb of Sher Shâh, Fig. 381 in the new edition, with the same illustration on page 517 of the second edition, or the "carved pillars in the mosque at Fathpur-Sikri" (cut 423 in the new edition), with the same illustration on page 579 of the second edition, will see what we mean. It is not surprising to find that the spelling of nearly all the Indian names has been altered; there appears to be a new theory as to the spelling of Indian names in English characters about every ten years; and we hardly recognise our old friend "Minar, Kutub," under the guise of "Qutb Minâr"; and so on throughout the book. This seems rather unnecessary, as we do not know after all whether the new spelling comes any nearer the actual sound than the old one.

Mr. Burgess, who for many years was closely connected with Fergusson, besides knowing India well, has edited the Indian portion (much the greater part) of the book, Mr. Spiers editing and partly rewriting the part dealing with Further India, Java, and China. A certain amount of new information has been available for settling dates and other points of fact, since the original publication; and it is a testimony to Fergusson's insight that although some of the actual dates as given by him have had to be altered, his relative dates, *i.e.*, the chronological order of buildings, have been found mostly correct. It is stated, however, that the Archæological Surveys have collected vast stores of draw-



PILLAR IN VIHÂRA AT AJANTÀ.

From Fergusson's "History of Indian and Eastern Architecture."

ings, only a fraction of which have yet been published. We observe that a bitterly satirical foot-note of Fergusson's (page 513 second edition) about the vandalism of government officials in respect of ancient monuments has been suppressed in the new edition—let us hope because it is thought to be no longer necessary.

The architecture of the topes and of the chaitya caves is no doubt interesting in a way; the chaitya caves partly because they are examples of rock-cut imitation of timber structure, and partly from the curious resemblance of their plans to those of the Latin basilica churches; a resemblance of course purely accidental. But the first things in the book that seem to be interesting from the point of view of architectural art are the columns with bracket capitals in the caves at Ajantâ. One of these, which was sketched by Fergusson himself, is quite an architectural design, and the hint which it gives might be worked out into a new form of column with little modification. The Jaina system of bracketing and roofing also has its points. The ruined temple or pagoda at Chidambaram (Fig. 223), which is a new illustration, has a curious resemblance to a Greek columnar temple, only with the columns covered with carved ornaments, reminding one that the difference between barbaric and educated architecture lies precisely in the fact that the former does not know where to stop in the application of the ornament; everything must be ornamented all over, whatever its architectural function. As to the monstrous and quasi-phallic erections of what is called "the Northern or Indo-Aryan style" (as if such stuff could be called a "style"), it has about as much relation to rational architecture as the Hindu mythology has to a rational religion, and so far is no doubt characteristic.

It is into another world that we come when we get to the Indo-Saracenic architecture, with its beautiful pointed arches and fine mosque plans. Most of this is really worth study and illustration; and its crowning glory, the Taj Mahal, shows how elaborate ornament can be grouped and arranged so as to have its greatest effect, without crowding the structure with a meaningless mass of decoration.

The new edition, as a whole, is a credit to the two editors, and has given fresh value to a remarkable and monumental publication.

Painters' Work.

Staining, Varnishing, and Enamelling. By J. H. Galloway, London: The Trade Papers Publishing Co., 1910. 3s.

This is a small book intended to explain the operations required to be gone through by the house decorator in order to obtain the best results in staining, varnishing, and enamelling. It is an entirely practical book on such matters as the making of stains, the preparation of wood previous to staining, the application of varnish, and enamelling, etc. It seems to be exceedingly complete, giving a great deal of information, in a small space, on the subjects of which it treats.

The Training of a Municipal Engineer.

How to become a Municipal Engineer. By the late J. Freebairn Stow. Second Edition. London: The St. Bride's Press; 1910. 1s.

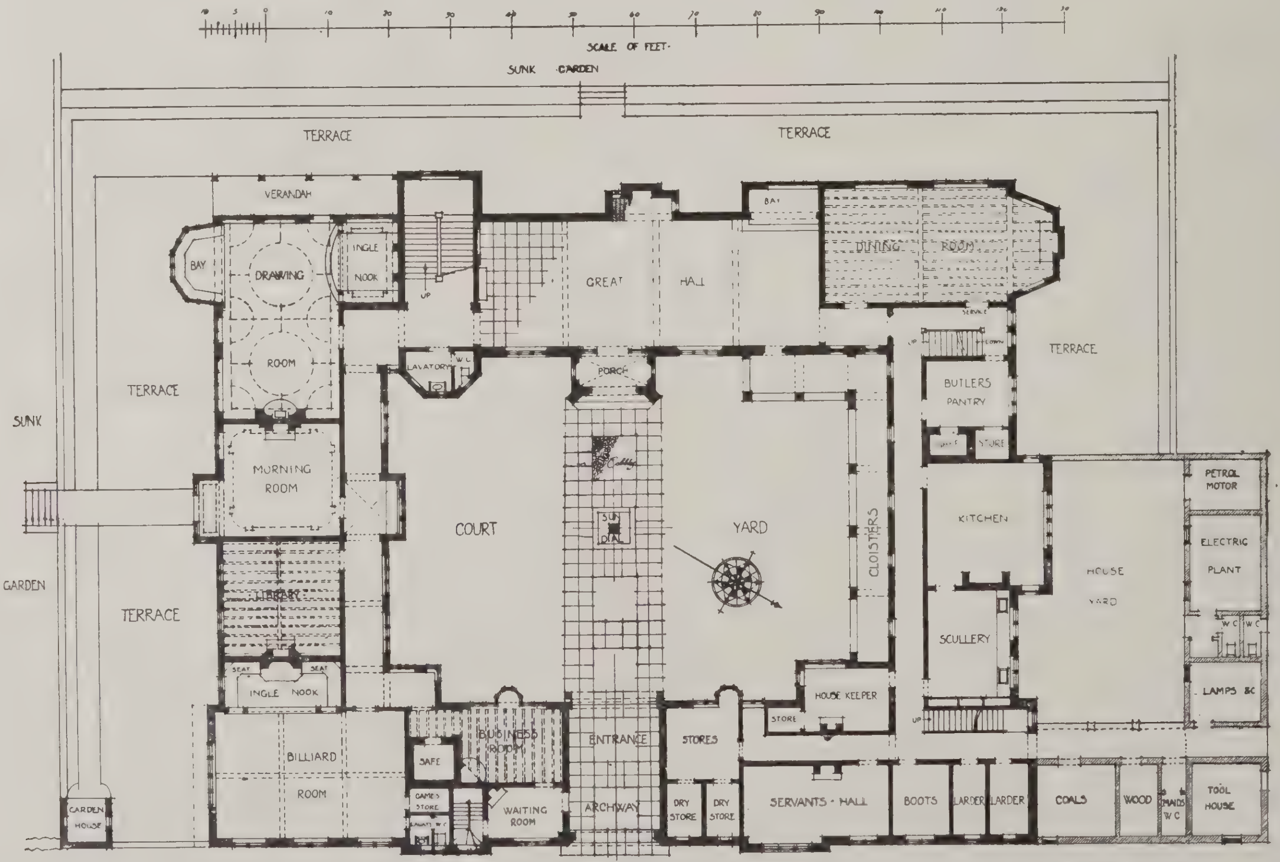
This is only a paper-covered pamphlet of 48 pages, but it is a most useful one for any young man who thinks of training himself, or getting trained, with a view of ultimately filling the position of a municipal engineer. It contains advice as to the preliminaries for entering into the position of a pupil, followed by a series of short sections giving a summary of the various branches of knowledge with which he will have to become acquainted, an account of the requirements for entering on one of the examinations of the Association of Municipal and County Engineers, and a series of short specimen examination papers in various branches of the subject, compiled from the contents of papers which have actually been set, so as to give the student an idea of what he has to work up to. The late author, in his preface to the first edition, said he believed the publication was the first of its kind, and that it was written "in as practical language as possible"; a claim fully justified by its contents.

Cement and its Uses.

The Atlas Portland Cement Company, of 30, Broad Street, New York, which appears to be the largest firm of cement manufacturers in the United States, is very enterprising, and realises that in popularising cement and assisting manufacturers generally this broad policy will lead to their own advantage as they secure their proper share of increased business. The Atlas Company go out of their way to provide useful information in a handy form that will appeal to each class of user of Portland cement, and we have recently received a set of their publications, namely:

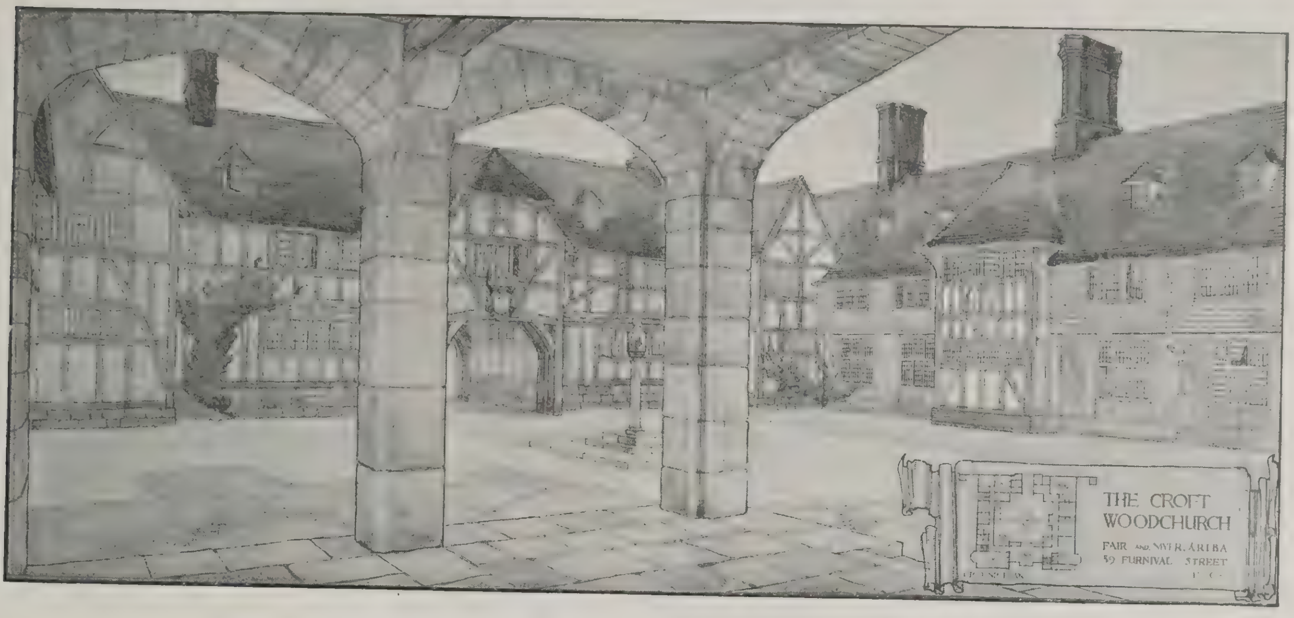
"Concrete Construction about the Home and on the Farm," 25 cents; "Concrete in Highway Construction," one dollar; "Concrete in Railroad Construction," one dollar; "Reinforced Concrete in Factory Construction," 50 cents; "Concrete Houses and Cottages," vols. i. and ii., one dollar each; "Concrete Cottages," free; "Concrete Garages," free.

All these books are most valuable. They contain numerous illustrations—photographs of completed works, sketches, and working drawings. They are proper treatises on their respective subjects, and provide information of great value to the concrete expert as well as the layman.



GROUND FLOOR PLAN

THE CROFT, WOODCHURCH.



THE CROFT, WOODCHURCH: THE COURTYARD FROM THE CLOISTERS.

THE "CROFT," WOODCHURCH.

The design of "The Croft" has been based so far as possible upon local tradition, the materials used being selected from those obtainable in the neighbourhood.

The main entrance to the property is through a half-timbered gate-house, partly weather boarded with rough elm boards, the garage and stabling being both grouped up with this building. A long curved drive leads up from this entrance to the house, where a Tudor archway with a timbered gable over it leads through into the central courtyard. The quadrangle is paved with cobble stones, and has intersecting paths of squared stone and a raised sundial in the centre. Along one side of this yard stone cloisters with oak beams across the ceiling, supported on carved corbels, make a cool and shady retreat in the hottest weather. The great hall is 55 feet long, with an open timber roof of great oak principals and beams. The lighting of the hall has been arranged to come entirely from one side, in order to show to the best advantage some fine old Norman tapestries which are to be hung on the opposite walls, the mullioned windows being filled with Heraldic stained glass. At the far end of the hall is the minstrels' gallery, leading out of the main staircase. The wide, open Gothic fireplace also makes an interesting feature; it has wrought-iron dogs and basket grate. A good view of the garden is obtained from the large bay window here, which overlooks the lily pond.

The archway at the Southern end of the hall leads to the main staircase. This has richly carved newels and balustrade, the lighting being from a mullioned window on the half-landing. Beyond the staircase hall, a wide panelled corridor leads through to the other reception-rooms. Upon the brackets supporting the beams of the ceiling of this corridor are carved various episodes from Chaucer's "Canterbury Tales," the lighting being through leaded lights to the mullioned windows. Half-way down the corridor is a recess or bay to hold a settee.

The drawing-room, 32 feet by 20 feet, has been kept much later in character than the rest of the building, and has white panelled doors and an enriched ceiling in "Adam" decoration. The room is warmed by two fireplaces, one of which is arranged with a deep recess raised up two steps. The door from this room leads out to a wide verandah on the south-west of the building. The morning-room has panelled walls and an enriched ceiling, the modelled frieze, showing various figure groups, being of special interest. From this room also, a door leads into the garden.

The library is surrounded with special book-cases designed in walnut wood, and has a fireplace built of small bricks and old Dutch tiles, the grate having an old Sussex cast-iron fire-back and wrought-iron dogs. The billiard-room is rather larger than usual, in order to leave plenty of space for onlookers without interfering with the players. The walls are finished with timber framing with plaster in between, and the ceiling intersected with stout cross beams. The ingle-nook, finished in old bricks and tiles, has been kept up two steps, so as to give a good view of the game, and a fine old pair of fire-dogs have been secured for this fireplace. The carvings on the timbers represent various sports and pastimes. The billiard table, etc., is specially designed to be in keeping with the rest of the room. The business-room is so placed as to allow the proprietor to consult with his steward and at the same time to be close to his library. By an underground passage from the servants' quarters, one of the footmen is able to attend to tenants and business visitors. The dining-room has been placed on the north-west corner of the building, to be on one side next to the great hall, and on the other adjoining the kitchen quarters for convenience of service. This room is panelled in oak, with a dark beamed ceiling and a large recessed fireplace.

The servants' and domestic portions of the house have been made complete and kept throughout in the most convenient positions possible, the housekeeper's room being so arranged as to have complete control over this department. On the first floor, there are 14 bed-rooms, sewing-room, three bath-rooms, housemaid's cupboard, etc., the principal bed-rooms having very simple enriched ceilings. On the top floor are aranged 14 more bed-rooms, six of which are intended for the use of the maid-servants.

The erection of the house will shortly be commenced.

BACK-TO-BACK HOUSES: L.G.B. REPORT.

A Local Government Board Report on Back-to-Back Houses, prepared by Dr. L. W. Darra Mair, with an introduction by Dr. Arthur Newsholme, Medical Officer of the Board, was issued last week (Cd. 5314, price 3d.). The problem has been studied, Dr. Newsholme states, as in previous enquiries on the same subject, by instituting comparisons between death-rates in back-to-back and in through houses of similar class. Dr. Mair's comparison, however, has not been limited to one town, but has extended to thirteen industrial towns in the West Riding of Yorkshire; and the comparison of the two types of houses has been limited to houses in good structural condition situated in healthy areas, in order that, so far as practicable, the issue might not be confused by influences other than that of through ventilation. In order to avoid accidental statistical error, the vital statistics have been taken for a period extending over ten years. Lastly, and most important of all, the death-rates were corrected for variations in the age and sex constitution of populations.

Dr. Darra Mair's summary and conclusion are as follows:—

1. The comparison which has been made between through houses and back-to-back houses has been carried out so as to bring under review good types only of back-to-back houses, situated in healthy areas.

2. The through houses and back-to-back houses thus compared were situated in 13 industrial towns in the West Riding of Yorkshire.

3. Every care was taken to select strictly comparable through and back-to-back houses, occupied by the same class of people, with similar occupations and wages. Nevertheless, the rent of the through houses was, on the average, appreciably higher than that of the back-to-back houses—the average rent of the former being 5s. 6d., and of the latter 4s. 6d. per week.

4. The vital statistics which have been obtained regarding these areas, cover a period of 10 years (1898-1907); and, on the basis of a special detailed census of each area, corrections have been made, through-

out, for difference in the age and sex constitutions of the populations concerned.

5. The corrected average annual death-rate from all causes was greater in the back-to-back houses than in the through houses, to the extent of 15 per cent.

6. The excess of mortality in back-to-back houses built in continuous rows was greater still, amounting on the average to a little more than 20 per cent.

7. The corrected average annual death-rates from all causes in through houses and in back-to-back houses possessed of means of side ventilation (blocks of four), were about equal.

8. The outstanding causes of death which produced the excess of mortality in back-to-back houses were:

- (*a*) pneumonia, bronchitis, and other pulmonary diseases (exclusive of phthisis), and
- (*b*) diseases of defective development and of malnutrition in young children.

The corrected excess of mortality from each of these two groups of diseases, in back-to-back houses, approached 40 per cent.

9. There was also some excess of mortality (10 per cent.) in back-to-back houses from infectious diseases, and a small excess (5 per cent.) from diarrhœa.

10. Mortality from phthisis showed an excess, amounting to 12 per cent., in back-to-back houses houses built in rows, but not in back-to-back houses built so as to admit of side ventilation (blocks of four).

11. Although the average rate of mortality from all causes was about the same in through houses and in back-to-back houses built in blocks of four, there was a large excess of mortality in the latter from pulmonary diseases (exclusive of phthisis), as was the case in back-to-back houses, in rows, and also a large excess of mortality from the diseases (except premature birth) of defective development and malnutrition in children.

12. Approximately, the ages at which the excess of mortality in back-to-back houses occurred were the early ages of life from infancy up to 15 years, and the late ages of life from 65 years and upwards. At both of these periods of life, the predominating cause of the excess was mortality from pulmonary diseases, and at the early ages, as well, from diseases of defective development and malnutrition.

13. At the age periods intervening between these two extremes, the relative excess of mortality in back-to-back houses was comparatively small.

On the whole, therefore, it is reasonable to infer from the data given in this report that, even in good types of back-to-back houses situated in healthy areas, the mortality from all causes is higher by 15 to 20 per cent. than in comparable through houses; but that this excess is not evident in back-to-back houses built with means of side ventilation.

Furthermore, it may likewise be inferred that the chief sufferers from residence in back-to-back houses are infants, young children, and old persons, in consequence, principally, of the greatly increased liability of both young and old to death from pulmonary diseases (other than phthisis), and, of the young, to death from diseases resulting from defective development and malnutrition.

[The thirteen towns in which Dr. Darra Mair's investigations were made were: Leeds, Morley, Batley, Bradford, Huddersfield, Halifax, Keighley, Cleckheaton, Brighouse, Dewsbury, Linthwaite, Heckmondwicke, and Pudsey. Dr. Mair counts it as among the indirect disadvantages of back-to-back houses that they are comparatively devoid of sunshine.]

OXFORD'S RECENT BUILDINGS.

No English city, not even London, has seen more rebuilding in proportion to its size than that which Oxford has experienced during the last fifty years. With the Commission of 1854 there began that reorganisation of studies and that increase in the number of undergraduates which has been proceeding ever since; and the improved values of some estates and the better management of all has made it possible to provide a large number of new and imposing buildings. Many old Oxford men (a writer in the "Times" remarks, in a long and interesting article from which these extracts are taken) remember the time when there was no University Museum, no Keble College, and no Examination Schools, when Christ Church, Balliol, Merton, and Magdalen had no new buildings, and when the growing University had not called into existence the vast residential suburb which now reaches from the Parks to Summertown. More recent buildings, some of them not yet completed, show that the transformation of the old University town is still proceeding. These are numerous, and some of them are important, both from the point of view of architecture and from that of study.

The Electrical Laboratory.

The Electrical Laboratory is the second important gift made to the Museum by the Drapers' Company. The first was the new building for the Museum Library, which liberated the room formerly occupied by the Radcliffe Librarian, and allowed it to be converted into an Electrical Laboratory. Within a few years the Drapers handed over a further £20,000 to the University, to build a new Laboratory. The work was placed in the hands of Mr. T. G. Jackson, R.A., who, since his first great success with the Examination Schools, more than thirty years ago, has been popularly regarded as the Oxford architect *par excellence*. The Electrical Laboratory, carried out by Mr. Jackson in close accord with Professor Townsend, is believed to be one of the most perfect of its kind existing. It will easily accommodate 150 students at a time. There are three floors, with large and small class rooms on each; a very large room at the top for elementary students; and a lecture theatre, with seats and desks most simply and ingeniously arranged, to hold about 120 persons. Professor Townsend has provided that spaces which are to support his tables for sensitive instruments such as galvanometers, etc., shall be concreted, and shall rest upon the piers of the building and not in any sense upon the walls. They are thus as firm as human skill can make them, and 100 students can move as they please over the wooden floors without shaking the concrete. The external appearance of the building has been much discussed in Oxford. It is close to the other buildings of the Museum—Ruskin's freakish Venetian front, the Clarendon Laboratory, and all the rest; and these are all of stone. But Mr. Jackson's building is only of stone on the ground floor, with charming stone decorations about and above the doorway. The remaining floors are built of hard and very bright red brick. There are, of course, plenty of precedents for this in English Renaissance architecture, and if it stood by itself we (says the writer in the "Times") should have no criticisms to make; but as the Laboratory is grouped with a number of stone buildings, it would surely have been better to build it entirely of stone.

St. Aldate's and the Front of Christ Church.

A part of Oxford that has been, or is being, very much altered is St. Aldate's. Here the Corporation some fifteen years ago pulled down their shabby and inconvenient town hall and replaced it with a new and excellent block of municipal buildings from the designs of Mr. H. T. Hare, more or less in Mr. Jackson's seventeenth-century style. Even more important work had to be done a little lower down. The noble front of Christ Church, faced apparently with that Headington stone which crumbles so badly in the Oxford climate, has for generations divided the palm of beauty, in the eyes of Oxford men, with Magdalen Tower. The colour of the decaying stone was especially lovely; but the time came when the claims of safety and permanence had of necessity

THE CROFT, WOODCHURCH: THE GREAT HALL. FAIR AND MYER, ARCHITECTS.

THE CROFT, WOODCHURCH: THE ENTRANCE GATEWAY. FAIR & MYER, ARCHITECTS.

to be preferred to those of beauty and old association. The front, and the famous gateway which Wren built in 1681, "to harmonise with Wolsey's Tudor Gothic," were found to be in a condition absolutely demanding a thorough restoration. The governing body voted £10,000, and entrusted Mr. Caröe with the task of refacing the front and the tower, which in the latter case, implied replacing the rich old carving with new. Everything seems to have been done with care and exactness; and doubtless fifty years hence people will take as much pleasure in the renewed building as our generation has taken in the old one.

Changes in "The High."

He who had not seen Oxford since 1870 and were to walk down "the High" to-day, would find the famous street changed almost beyond recognition. But the new schools, Mr. Bodley's new buildings at Magdalen, and the restored St. Mary's and All Saints, are an old story by this time. So is that part of Brasenose which Mr. Jackson built some years ago. This, however, was incomplete, and it was only last year that the foundation-stone of the remaining portion was laid—a worthy commemoration of the 400th birthday of Brasenose. The builders have worked quickly since that day, and now it is possible to see what the completed front will look like—very harmonious, very academical, and as perfectly in keeping with the place as with the needs of future undergraduates. Nearly opposite are rising the walls of the new buildings of Oriel, provided by Mr. Rhodes's will. These are the work of Mr. Basil Champneys, who is to be praised for the care with which he has preserved as much as possible of the old quadrangle of St. Mary Hall, incorporated several years ago with Oriel College. So far as can be judged at present, the buildings will be creditable to Mr. Champneys's scholarship and academical experience. He has built much at Cambridge; and, at Oxford, Mansfield College, the Indian Institute, the new small quadrangle at Merton, and, across Merton Street, the large new house for the Warden, are his.

The New Chapel of Hertford.

The new chapel of Hertford College was opened in 1908, in lieu of an older structure with no pretensions to beauty. Old Hertford College was demolished about 1770. Plain and dull Magdalen Hall was built on its site; and about 35 years ago the late T. C. Baring refounded the college, endowed it richly, and revived the name. The new chapel, in the south-east corner of the quadrangle, may fairly be called Mr. Jackson's masterpiece, with its perfect proportions, its well-designed windows (as yet waiting for their stained glass), and the admirable carving of the stalls. With respect to this chapel, Mr. T. G. Jackson writes to the "Times" correcting a slight misapprehension with respect to the executants of some of the work. "The joinery," he explains, "as well as the general fabric, was done, and done admirably, by Messrs. Long, of Bath, but the carving was done in the workshops of Messrs. Farmer and Brindley, in London, principally by Mr. Childs, their foreman, with whom I have worked for more than a quarter of a century, mutually learning from and, I trust, improving one another."

NEWS IN BRIEF.

The Society of Architects has now moved to its new premises at 28, Bedford Square, London, W.C. The members' rooms (reading rooms, etc.) will not be available for use until after the annual general meeting in October, notice of which will be given in the Society's journal.

* * *

The Lord Lieutenant, High Sheriff, Chairman of Quarter Sessions, and Chairman of County Council of Middlesex, announce officially, in a jointly signed letter, that the question of a Middlesex memorial to King Edward is receiving attention, and will be carefully gone into by an influential and representative committee as soon as the holiday season is over.

* * *

The alterations and improvements at Buckingham Palace have been started by overhauling the water mains in the forecourt, which have given a good deal of trouble at times. When this and the other outside work has been completed, a start will be made with the works inside.

* * *

A memorial to Signor Francisco Ferrer, in commemoration of his execution by the Spanish Government, was unveiled at Brussels on Monday week. The memorial, which was initiated by the International Freethought Congress, consists of a large marble slab, with suitable inscription, which has been let into the pavement at the foot of the steps of the historic Maison du Roi.

* * *

Mr. Albert C. Hill, managing director of Messrs. Pinchin, Johnson and Co., Ltd., Minerva House, Bevis Marks, E.C., was presented by the staff with a gift of silver, on Saturday week, to mark the occasion of his silver wedding.

* * *

Excavations have been begun at Ealing Station in connection with the construction of a Great Western Railway line from Ealing to Shepherd's Bush. A new section will be laid from Ealing to Park Royal, where trains will pass to the existing line and run to a point near North Acton. There the line will branch off beneath the present main line, skirt Wormwood Scrubs on a new section, and form a direct communication with the Central London Railway at Shepherd's Bush.

Mr. George Batty, a well-known Northumberland contractor, has died at Brighton at the age of 60 years. He was formerly a member of Berwick Town Council and Sheriff of Berwick. He was also a churchwarden and overseer of Berwick parish, and a prominent Unionist.

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The manufacturing quarter of Jersey City was swept by fire on August 17, and the damage is estimated at from £200,000 to £400,000. One person has been killed, and one fatally injured. The fire broke out in the factory of Messrs. Truslow, Tulle, and Company, makers of cork products, and also destroyed the establishment of Messrs. Ames, Spike, and Company.

* * *

Mr. Campbell Douglas, F.R.I.B.A., of Edinburgh, a former Vice-President of the Royal Institute of British Architects, a member of the Glasgow Institute of Architects, and designer of several public buildings in Scotland, who died on April 14, at the age of eighty-one, left personal estate valued at £8,023.

* * *

A marble tablet, in memory of the late Mr. Godfrey Wedgwood, has been placed in the little church at Moddershall, built by him in 1903. It consists of a portrait shown nearly in profile, carved in low relief from a block of Serravezza marble, framed in alabaster; the whole mounted upon a slab of Trieste marble. The sculptor is Mr. Albert Toft.

* * *

Mr. W. T. Hampton, an architect, of Loughborough, has died as the result of a motor accident. He was found lying unconscious beside his car. It appears that he was driving to an appointment in the country, when his hat blew off. He lost control of the car, which ran up a bank and capsized.

* * *

The Epping Board of Guardians have adopted plans for the proposed extension of the workhouse buildings at a cost of £11,000. This decision has been arrived at after a prolonged controversy with the Local Government Board, who have for several years been urging the extension.

* * *

Chetwynde House, in Greengate Street, Stafford, built by a member of the Chetwynde family in the middle of the eighteenth century, has been chosen by the Government as the site of the new post office.

* * *

Having had plans prepared for the erection of new Municipal Buildings on the site of the old Corn Exchange and for new buildings on the site of the present Municipal Chambers, the Stirling Town Council has resolved to get an estimate of the respective costs, and then to have a plebiscite of the ratepayers as to which scheme they prefer.

* * *

Leeds, with an area of 21,572 acres, is contemplating the extension of its boundaries so as to include Roundhay and Shadwell. The points for and against the scheme are being keenly discussed. The rateable value of Leeds exceeds two millions sterling; that of Roundhay and Seacroft is over £40,000, and that of Shadwell is between £5,000 and £6,000.

* * *

The Coldingham Schools, N.B., are being supplied with Shorland's patent Manchester stoves by Messrs. E. H. Shorland and Brother, Limited, of Failsworth, Manchester.

In a communication which he has addressed to Mr. Ellis W. Davies, M.P., Mr. Masterman states that the question of the large number of accidents in Welsh slate quarries is engaging the attention of the Home Office.

* * *

It is understood that Messrs. W. Pattinson and Son, of Ruskington, have secured the Government contract to build the administrative block and the surrounding walls, eight feet high, of the new criminal lunatic asylum, at Rampton, near Retford. The work has to be completed in eighteen months, and the contract amounts to some £80,000. It is contemplated making a light railway from the Great Central line to the asylum works.

* * *

Mr. George Careless Trewby, M.I.C.E., of Fenton House, Hampstead Heath, N.W., formerly in charge of the Sultan of Turkey's gas works at Constantinople, and afterwards of the Brentford Gas Company's works, who died on July 19, aged 71, left estate of the gross value of £120,118 14s. 6d., of which the net personalty has been sworn at £110,253 13s. 6d.

* * *

The Local Government Board has decided to hold inquiries into proposed expenditure by public bodies as follows:—*Sewerage and Sewage Disposal Works and Plant.*—Horsham Rural District Council, £3,530 (August 30); New Sarum (Salisbury) City Council, £4,176 (September 1); Poole Borough Council, £1,927, for surface water drainage, and other amounts for sewerage (September 2). *Water Supply.*—Okehampton Rural District Council, £1,200, for North Tawton (August 30); Tiverton Borough Council, £2,800 (including construction of 236,250-gallon reservoir) (August 31). *Street Improvements, etc.*—Hastings Borough Council, £3,411 (August 30). *Various.*—Camberwell Borough Council, £1,195, for public baths (August 30); Tiverton Borough Council, £4,000, for gas undertaking (August 31); Stalybridge, Hyde, Mossley, and Dukinfield Tramway and Electricity Board, £22,268, for electric supply purposes (August 31).

* * *

Mr. W. Rees Jeffreys, secretary to the Road Board, has sent to county councils and other highway authorities of the United Kingdom a circular letter informing them that the Board will proceed to consider and deal with applications for grants in November, and intimating that any applications to be then considered should be sent in not later than October 31. The Road Board's circular has been considered by a large number of local authorities, and the course of action most generally adopted has been to nominate delegates, including the council's surveyor in almost every instance, to attend a conference convened by the county council. A conference of the surveyors of local authorities in the county of Buckingham has already been held, at which a resolution was adopted affirming that, "owing to the inadequate amount which it is estimated the county of Bucks will receive from the newly formed Road Board during the immediate future, grants applied for should be towards surfacing work by approved methods on roads which already have suitable foundations, and to improve dangerous corners, as suggested in clauses 3 and 4 of the Road Board's circular letter of July, 1910."

* * *

The public statues in Bradford are being freed from the accumulated grime of many years. "Now at last," says the "Bradford Daily Telegraph," "shall Peel be purified, our long Town Hall line of kings shall be cleansed, and Forster shall forswear his grimy coat. . . . the hands of Peel shall become clean literally as they were figuratively in life—and, indeed, cleanliness shall abound amongst the lot of them, to the very tip of Forster's argumentative finger." Our contemporary thinks it a debatable point whether, in such a town as Bradford, the erection of statues is a worthy method of doing honour to great men.

* * *

As regards the competition for laying out the site of the dismantled fortification of Antwerp, noted in our list of competitions open, the premiated plans will become the property of the Belgian Government, and the Commission will be at liberty to use the details of any scheme on payment of £40. The general conditions laid down include plans for a circular boulevard, a circular metropolitan railway, the widening of existing streets, open spaces with public buildings, educational establishments, such as an Academy of Fine Arts and "a Palace of Industry, Commerce, and Navigation," parks, lakes, squares, and playing fields, spaces for hospitals, and the indication of appropriate spots for statuary. Not more than 40 per cent. of the zone thrown open must be used for buildings and garden cities, and no level crossing on the railways will be permitted. Plans and details are provided on payment of £4. The competition will close on October 1. Finished schemes must be sent to the President of the Commission, Rue du Jardin des Arbalétriers, 57, Antwerp.

* * *

Messrs. Turner, builders, of Cardiff, who have for many years past owned extensive quarries in the Forest of Dean have now sold them to the Forest of Dean Quarries Company.

* * *

A deputation of some sixty delegates from the German Garden City Association are visiting various points of interest in the United Kingdom. Letchworth, Hampstead, Birmingham, and Bourneville are among the places already seen. Professor Martin Dulfer, President of the German Institute of Architects, is one of the members of the deputation.

* * *

The Commons and Footpaths Preservation Society, 25, Victoria Street, Westminster, is offering its services to landowners and local authorities in regard to difficulties in connection with footpaths, etc., in filling up the land taxation forms.

* * *

An appeal has been made on behalf of the funds for the erection of the Church of St. Jude-on-the-Hill, Hampstead Garden Suburb. The proposed cost of the church and vicarage, for which Mr. E. L. Lutyens, F.R.I.B.A., is the architect, is £13,000. It is desired to put up a really meritorious building, for as the Dean of Westminster has said. "It would in the garden suburb be a scandal to the Church of England if you put up a cheap building."

* * *

We understand that Messrs. William Moss and Sons, Ltd., of Queen Anne's Chambers, Westminster, who are the owners of the Pohlman system of concrete reinforcement in the United Kingdom, have, owing to the success of this system of reinforcement, found it necessary to establish a branch office in the Liverpool and Manchester districts, and have therefore appointed Messrs. Mould and Brown, of Devon House, 19, Whitechapel, Liverpool, as their local representatives.

A discovery of considerable interest has been made within the last few days on the estate of Mr. A. S. Boucher, Sharpcliffe Hall, Ipstones, Staffordshire. Some workmen, while cutting through a gravel pit, exposed the remains of buildings, which on examination by experts are pronounced to be prehistoric. They are of stone, and form two distinct chambers. Further investigations are being made, and discoveries of great interest are anticipated. The announcement of the find was made at a meeting of the North Staffordshire Field Club.

* * *

A statue to the Emperor Francis Joseph of Austria-Hungary has been erected at Ischl, to mark the occasion of His Majesty's 80th birthday. The monument has been subscribed for by the huntsmen of the Monarchy.

* * *

The work of widening Bishopsgate Street Without, which has been undertaken by the City Corporation, has already begun, and the housebreakers are now busy in several of the buildings on the west side. The improvement will involve the disappearance of some 30 houses, including four taverns, on this side of what is at present the narrowest portion of the thoroughfare, and will extend from No. 137, opposite the Bishopsgate Congregational Chapel, to the quaint old building on the face of which a sculptured tablet indicates the boundary between the City and Norton Folgate. Fortunately nothing of historical or architectural note is to be found in the doomed buildings, although some of them are wainscoted from top to bottom.

* * *

Professor Meister, of Leipzig, has delivered an opinion on the alleged discovery of the orginal shrine of Aphrodite Astarte in Cyprus by Dr. Ohnefalsch Richter as follows:—"I should be prepared to confirm his hypothesis to this extent, that all syllabaric inscriptions found at Rantidi are in very ancient Paphian characters, while alphabetic inscriptions, so far as I am aware, have not been found there at all; the few inscriptions which have so far been deciphered go to show that Aphrodite under many names, Apollo, and a deity designated as *φίλος θεός*, were worshipped there, that a very ancient Altar of Incense stood there, and that there were also tombs near the places of worship. It follows that what has been discovered at Rantidi is not in the nature of a single *τέμενος*, but a great place of worship, which will perhaps prove to be the ancient Paphos."

* * *

Work is being actively pushed forward night and day in connection with the new additions to the Savoy Hotel. In the evening a number of huge flare lights are to be seen on the scaffolding lighting up the Embankment and the river, and a small army is busily engaged. Inside, however, everything proceeds as usual. It is a triumph of the modern system of construction. As originally designed, the building had seven floors, but the seventh consisted merely of attics for the sleeping accommodation of the servants. This is now being reconstructed so as to convert it into suites of rooms for visitors, with windows and balconies commanding magnificent views of the river, and in fine weather of the far-off hills of Surrey and Kent. Above this will be an entirely new, or eighth, floor, which will also consist of suites of apartments. Among other important new features will be a banqueting hall of large proportions. It is expected that the work will be finished by the beginning of November.

SURVEYING : THEORY AND PRACTICE.*

By ARTHUR BOWES, Assoc.M.Inst.C.E.

(Concluded from page 197, *No.* 812.)

Pile-driving, on its theoretical side, affords some good examples of the highly useless formula. A writer took the trouble to compare eight different formulæ, and found that they gave results varying from 20,000lb. to 399,840lb. The old-fashioned rule of guessing at the quarter and multiplying by four would seem to be about as practical a way of arriving at the truth. It is the function of practical common sense to guard us against placing too much trust in a formula without making sure that all the elements of the formula are reliable. You are aware that the Board of Trade prescribes a limit of stress of five tons per square inch on any part of the iron of a railway bridge, and all the stress calculations are made with this limit in view, yet Sir Benjamn Baker—who was, perhaps, the happiest combination of practical and theoretical knowledge since the younger Brunel—proved by experiment that in a well-riveted joint the rivets were subjected by their own contraction to a stress of twelve tons per square inch.

Theory versus Practice.

It is no wonder, then, that actual facts in the engineering world do not always square with a theoretical expectation. Sometimes a structure fails when by all the rules of arithmetic it ought to stand safe and sound; sometimes it refuses to fail when mathematically it has no right to exist ten minutes. When the Bouzey dam collapsed, a few years back, there were at once dozens of experts who proved satisfactorily why it failed, but no one could account for its having stood so long. And again, in designing arches of brick or stone, the law of the "middle third" is an institution of which we would no more speak slightingly than a nautical man would speak disrespectfully of the equator, yet Sir Benjamin Baker has ventured to say that "the middle third is merely an assumption made to facilitate calculations, and has led to a great deal of waste" in the design of arches. In another place he has said that 90 per cent. of the arches now standing in the kingdom do not fulfil the theoretical requirements.

Another example of the non-accordance of theory with practice is to be found in the strength of egg-ended boilers. In such boilers the ring seams are theoretically twice as strong as the longitudinal seams, and yet in cases of explosion the former are often the first to yield. It is the consideration of such anomalies as the above that lead one to agree with Sir Benjamin Baker in declaring that "writers of textbooks may properly suggest formulæ, but it is for practical men to decide whether they can or cannot be accepted as reliable."

General Conclusion.

The general conclusion to which the above remarks tend has been pretty clearly anticipated. It is the old conclusion of the Greek philosophers, that the truest wisdom lies in the happy medium. Practice and theory are both good in their way, and the wisest and cleverest engineer is he who combines as far as possible both in his mental equipment. A modicum of theory will save him from some disastrous and wasteful blunders, but his theory must be controlled by what Locke calls "a large, sound, round-about sense," or he may be led into equally foolish and extravagant blunders by his over devotion to the rule of figures and formulæ. Practical knowledge without theory is only half an equipment for an engineer, as George Stephenson recognised when he decided that his son Robert should be well educated in theory; while theory without practice leads to a rigid conception of things, bounded by red-tape rules, which is very far from a true reflex of the reality. All knowledge is useful, but the attainment of all knowledge is impossible for us, and the limitations of our little lives make it imperative that we should concentrate our efforts on those particular departments which will be of most use to us in our individual work. We cannot expect to attain proficiency in many branches of practical handicraft—no man can be at once a skilled carpenter, stonemason, bricklayer, slater, mechanic, and plumber. All that he can do is by constant observation to make himself as familiar as possible with the methods and details of such handicrafts and with the properties of the materials used in them, and at the same time furnish himself with a large and comprehensive view of engineering principles by studying the written records of works already executed and the results of experiments carried out by others.

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* A paper read at Manchester on August 10, before the Institution of Municipal Engineers.

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

AUGUST 31. COVENTRY. NEW ELEMENTARY SCHOOL in Centaur Road. Limited to architects practising in Coventry. Particulars given in our issue of March 16th.

AUG. 31. GORLESTON-ON-SEA. The Governors of the East Anglian Institution for Blind and Deaf Children invite plans and designs for a new building to be erected at Gorleston-on-Sea. D. O. Holme, Clerk of the Governors, Castle Chambers, Norwich.

SEPT. 1. CARNEGIE LIBRARY, KINGSTOWN, CO. DUBLIN.—Particulars from J. Sherlock Vaughan, Town Clerk, Town Hall, Kingstown. Deposit one guinea.

SEPT. 5. SHERINGHAM COUNCIL OFFICES.—Particulars on written application, accompanied by a stamped addressed envelope, to Edgar C. Rolfe, Clerk of the Council, Church Street Chambers, Sheringham.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects). Particulars, together with site plan can be obtained from A. F. Kidson, Town Clerk, Folkestone.

SEPT. 15. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, etc., from the engineer, Samuel J. Harpur, Town Hall, Maesteg.

Oct. 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., or obtained from the "Commission d'études de l'aménagement de l'agglomération anversoise," Due du Jardin des Arbalétriers 57, Antwerp. Deposit 100 francs.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

OCTOBER 31, ETC. ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Entries to be made by the date given. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

Nov. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

NO DATE.—MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

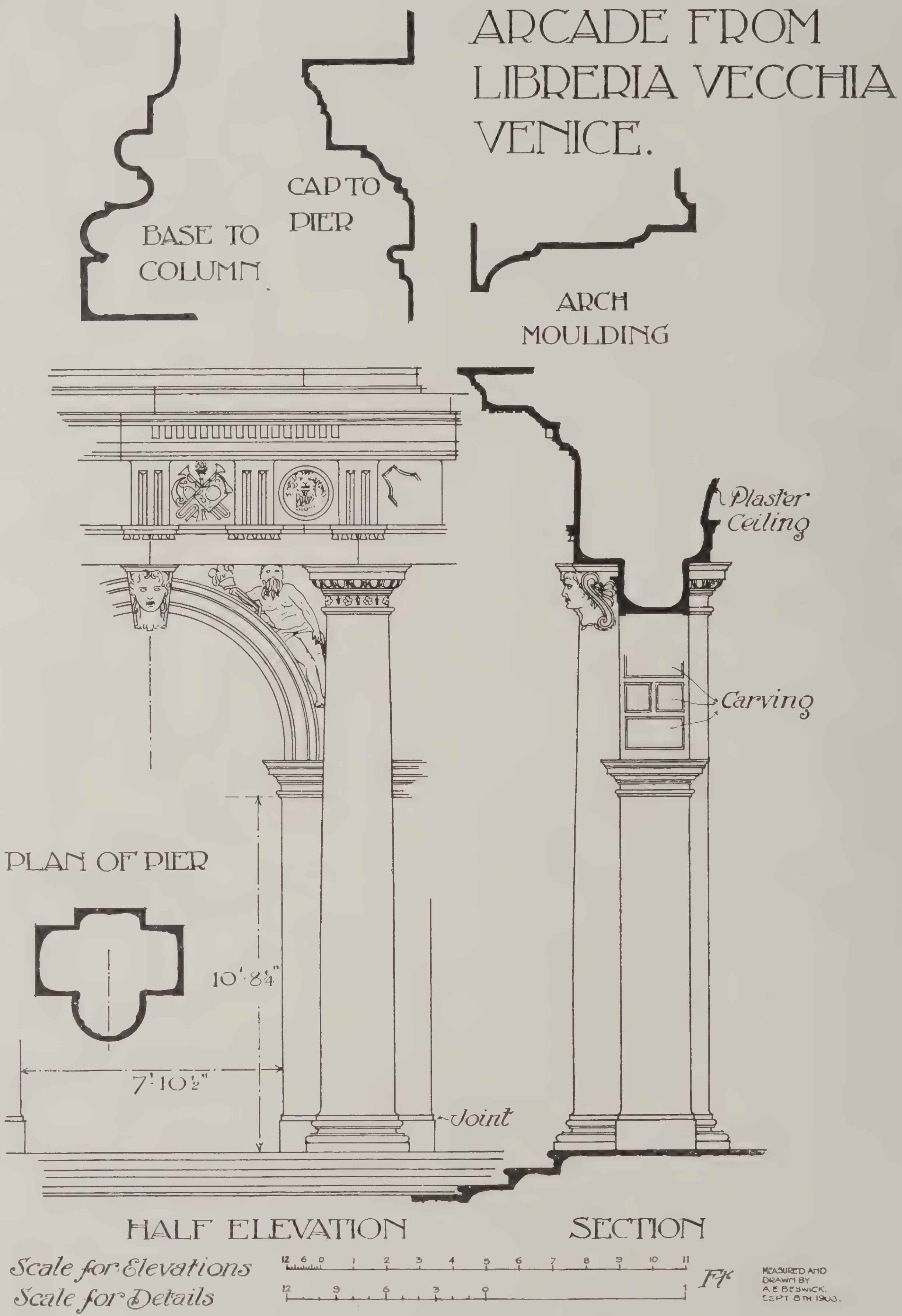
NO DATE.—TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Assessors: Sir Aston Webb, R.A., and Mr. Raymond Unwin. Premiums of £150, £100, and £50. Terms and conditions of the Company on and after September 1st. Deposit, one guinea.

OBITER DICTA.

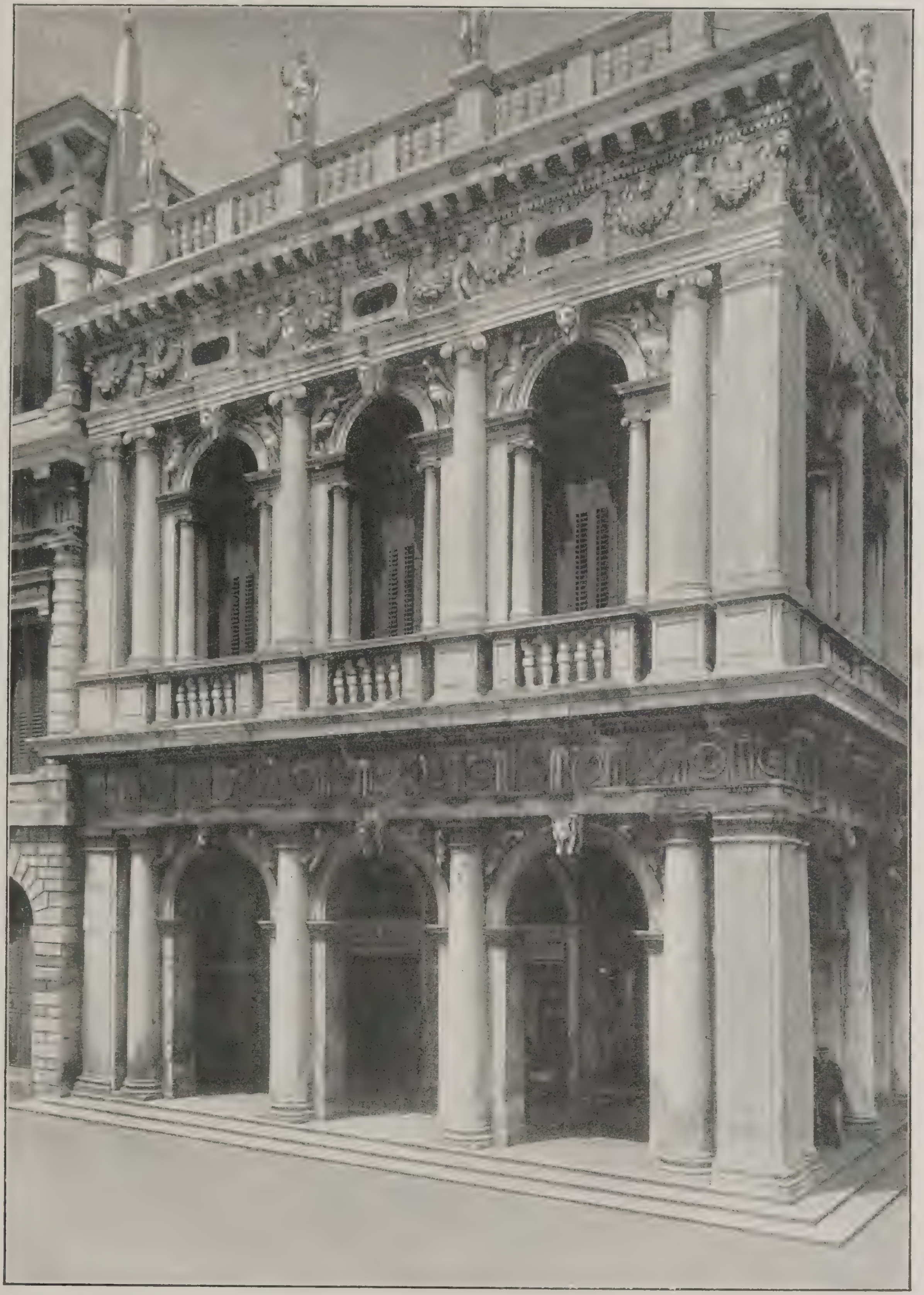
The Bane of Abounding Art. Art among the Romans, and with it architecture, was almost killed by overproduction; and it revived in Rome only when Rome was impoverished by barbarian invaders and the demand for art no longer exceeded the supply. But our demand for art seems to be more inordinate even than that of the wealthy Romans. We want it everywhere, all over our houses. We want it cheap and abundant, and we have got it. But the abundance of our spurious art has blunted our understanding of the significance of art. We no longer see that art is nothing unless it is excessive. Indeed, we have lost the power of distinguishing art that is expressive from art that is not.—"*Times.*"

Engineers and Town Planning. In some respects it is to be regretted that the list of vice-presidents and contributors of papers, as it stands at present, is so singularly unrepresentative of engineering, since the real spadework in the improvement of cities is essentially a task for engineers. Nevertheless, so long as the architects keep the conference under control, with a determined check upon irrelevant contributions, engineers will not be disposed to grumble. Very short papers by acknowledged specialists, followed by open discussion under rigorous restraint, is now becoming the rule, and it should work well in this instance. Briefly, the town-planning problem, apart from technical detail, must follow two lines of advance towards that great object—the betterment of the citizen. The first is the improvement of the relationship between municipal bodies and public and private owners and enterprises, whereby reforms may be carried out at reasonable cost and within reasonable time. The second depends upon closer accord between engineers and architects, so that strength and art may go together.—*The "Times" (Engineering Supplement) on the R.I.B.A. Town Planning Conference.*

ARCADE FROM LIBRERIA VECCHIA VENICE.



MEASURED AND DRAWN BY A. E. BESWICK.



The finest portion of this building (built 1536) is the open arcade at the ground level of which a detail is shown on the opposite page. The proportions are extremely fine. Above this the building falls somewhat under the criticism of being "Sculptors' Architecture." Nevertheless, it has been universally admired and frequently copied, notably in the Carlton Club, London.

THE LIBRERIA VECCHIA, VENICE. JACOPO SANSOVINO, ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

THE NEW GERMAN STANDARD SPECIFICATIONS FOR CEMENT

As is well known, sevral commissions nominated by the Association of German Portland Cement Manufacturers have been co-operating for a number of years with the Royal Testing Laboratory at Gross Lichterfelde in investigations regarding changes in the old standard specifications for Portland cement, because some of the clauses were obsolete, others no longer in accordance with the spirit of the age or not sufficiently accurate.

The work of this commission had proceeded so far that in 1909 a draft of the new standard specifications could be presented to the Prussian Minister of Public Affairs by the above-named association. The minister has by a decree of March 16, 1910, agreed to these specifications and at the same time to the new standard specifications for iron-Portland (Eisen-Portland) cement, presented by the Association of German Iron-Portland Cement Works.

The two specifications are similar except the paragraphs on "Definition" and "Packing and Weight." The requirements of the specifications are given below.

Portland Cement Specifications.—Definition.—Portland cement is a hydraulic cementing material with not less than 1.7 parts by weight of lime to 1 part by weight of soluble silica (SiO_2)+alumina (Al_2O_3)+oxide of iron (Fe_2O_3), prepared by fine grinding and intimate mixing of the raw materials, then burning at least to sintering, and another fine grinding. To the Portland cement shall not be added more than 3 per cent. of other materials for special purposes.

The maximum content of magnesia shall not exceed 5 per cent. and that of sulphuric anhydride shall not exceed 2½ per cent.

Essential Principles and Explanations.—Portland cement differs from all other hydraulic compounds by its high content of lime, which requires an intimate mixing of the raw materials in quite distinct proportions, such as can be obtained (very few natural products excepted) with safety only in an artificial way, by the finest grinding or dredging and most intimate mixing under chemical control. In the interest of the users it must be demanded that similar products, made of natural rock by simple burning, are marked "Natural Cement."

By burning to sintering (incipient fusion), the product acquires great density, which is an essential property of Portland cement. The content of 5 per cent. magnesia, which it can have when dolomitic limestone is used, has proved harmless, if the content of magnesia is taken into consideration when adding the lime. In order to make Portland cement slow setting, it is customary to add raw gypsum when being ground; in addition nearly all Portland cements contain sulphurous combinations from the raw materials and the fuel.

Additions for special purposes, particularly for regulating the time of setting, which cannot be avoided, are, however, to be limited to 3 per cent., in order to exclude the possibility of additions solely for increasing the weight. A sulphuric acid content up to 2½ per cent. has proved harmless.

Packing and Weight.—Portland cement is generally packed in bags or barrels. The package should show, besides the gross weight and the term "Portland Cement," the name of the firm or the mark of the factory distinctly printed thereon. Loss by sifting out as well as variations from the standard weight are admissible to the extent of 2 per cent.

Explanation.—As various weights are in use with bags as well as with barrels, it is absolutely necessary to give the gross weight on the bags or barrels. By the term "Portland Cement" the purchaser shall be assured that the product is in accordance with the definition given below.

Agreement.—The Association of German Portland Cement Manufacturers binds and controls the members to maintain the standard specifications given above and the therein specified properties for Portland cement. This obligation reads: "The members of the association are permitted to bring into the market under the name 'Portland Cement' only such a product as is obtained by burning an intimate mixture of finely powdered calcareous and clayey materials or lime-alumina-silicates to sintering, and subsequently grinding to the fineness of flour. They bind themselves not to recognise as Portland cement any material which is manufactured otherwise than above stated or which during or after the burning has been mixed with foreign substances, and to look upon the sale of other material under the name of Portland cement as deceiving the purchaser. These requirements do not forbid the addition of not more than 3 per cent. of other material to the Portland cement for the purpose of regulating the time of setting. The members of the association further bind themselves to furnish Portland cement which will in all respects meet the requirements of these specifications. If a consumer requires cement for a particular purpose, ground coarser than required or coloured, the delivery of such cement is permissible. If a member of the association violates the above given obligations, he shall be excluded from the association. His exclusion is made known publicly." The products of the members of the association are tested yearly in the laboratory of the association at Karlshorst, near Berlin, and the results are presented at the general meeting of the association.

Setting.—The initial set of normal Portland cement shall not take place in less than one hour after gauging. For special purposes a quicker setting Portland cement can be prepared; such cement is to be marked on the package accordingly.

Explanations.—The initial set of normal Portland cement should require at least one hour, because the beginning of the setting is important; on the contrary, if a definite interval of time is required for the hard set, it is of less value in the use of Portland cement if the process of hardening is completed in a shorter or longer time. If possible specifications concerning the setting time should therefore not be limited too closely. The initial set and the time of setting are determined by use of the Vicat needle.

As the setting is influenced by the temperature of the air and water used for gauging, high temperature accelerating, and low temperature delaying the setting, it is necessary, in order to obtain comparable results, to make the tests with the same temperatures of cement, water and air, and also to bring the apparatus and sand to this temperature. The opinion that Portland cement decreases in quality during storage is erroneous, assuming that the Portland cement is stored dry and free from draft. Specifications prescribing fresh material only should be abandoned.

Constancy of Volume.—Portland cement must be volume constant. It shall be recognised as decisive proof of this when a pat of neat cement, prepared on a glass plate, protected from drying out, and placed under water after 24 hours, shows no sign of curvature or cracking on the edge, even after a long time.

Explanations.—For this test the pat made for judging the setting process is, with slow setting cement, put under water after 24 hours, but in any case only after being hard set. With quick setting cement this can be done after a shorter time. The pats, especially those of slow setting cements, should be protected from drying out by storing in a covered box until the setting is finished. If the pats, while under water, curve or show cracks on the edge, this indicates undoubted expansion of the cement, i.e., in consequence of the increase of volume disintegration of the cement occurs by gradual loss of coherence, leading to complete crumbling.

The signs of change in volume are generally shown after three days; in any case an observation of 28 days is sufficient.

Fineness of Grinding.—Portland cement shall be ground so fine that it leaves a residue of not more than 5 per cent. on a sieve of 900 meshes per square centimetre, the width of the mesh being 0.222 mm (corresponding approximately to a sieve having 76 meshes per linear inch, width of the mesh being 0.0087 in.).

Explanation.—For the test 100 g. of cement are to be used. Correct sieves are not to be had on the market, and therefore differences in the width of the meshes between 0.215 and 0.240 mm shall be admissible.

Strength Tests.—Portland cement shall be tested for compressive strength with a mixture of Portland cement and sand, according to uniform methods, in cubes having a 50 sq. cm. (7.75 sq. in.) surface.

Explanations.—As experience shows that the results of strength tests of Portland cement without the addition of sand do not allow of uniform conclusions on the binding property with sand, especially if Portland cements from various factories are to be compared, it seems wise to make tests of Portland cement by the addition of sand.

As mortars in practice are first subjected to pressure and the compressive strength can be determined in the most reliable manner, the test of compressive strength only is decisive.

In order to secure uniformity in tests it is recommended that such apparatus and tools be used as are used by the Royal Testing Laboratory at Gross-Lichterfelde. [The Royal Laboratory, on request, tests and compares tools and apparatus for testing materials.]

Strength.—Slow setting Portland cement shall show a compressive strength of at least 120 kg. per square centimetre (1710lb. per square inch) when tested with 3 parts by weight of standard sand, after 7 days' hardening, 1 day in moist air and 6 days under water; after further hardening of 21 days in the air at room temperature (15 degrees to 20 degrees Cent.), the compressive strength shall be at least 250 kg. per square centimetre (3,570lb. per square inch). In cases of controversies, only the test after 28 days is decisive.

Portland cement which is intended for use under water shall show a compressive strength of at least 200 kg per square centimetre (2,850lb. per square inch) after 28 days hardening, 1 day in moist air and 27 days in water.

For controlling the cement at the place of construction a test on tensile strength can be made. The cement shall show a tensile strength of at least 12 kg per square centimetre (171lb. per square inch) when tested in a mixture of 1 part by weight of cement, and 3 parts by weight of standard sand, after 7 days' hardening, 1 day in moist air and 6 days in water.

The strength of quick setting Portland cements after 28 days is generally less than that given above. On this account, besides the strengths, the time of setting should also be noted.

Explanations. — As different Portland cements behave very differently with regard to their binding capacity to sand, which point is of most importance for judging their availability for practical use, the test with the addition of a high proportion of sand, principally in comparing several Portland cements, is absolutely necessary. The normal proportion accepted is 3 parts of sand to 1 part of Portland cement, because with 3 parts of sand the degree of the binding capacity of the various Portland cements is sufficiently indicated.

If, however, the binding capacity of Portland cement is to be fully learned, it is recommended that more tests be made with larger additions of sand.

Portland cement showing a greater strength in many cases admits of a higher addition of sand and has, viewing it from this point, and in consideration of its greater strength with an equal addition of sand, a right to a comparatively higher price.

NEW PUBLIC LIBRARY, DUDLEY: GENERAL VIEW. GEORGE H. WENYON, ARCHITECT.

As by far the largest quantity of Portland cement is used out of water, and the hardening capacity cannot be sufficiently determined within a short time, the deciding test adopted as to the compressive strength after 28 days' hardening is the placing of the specimens for 1 day in damp air, 6 days under water and then 21 days in the air of room temperature (15 degrees to 20 degrees Cent.). This is adapted to practical conditions.

The test of Portland cement to be used under water is made on cubes stored to resemble practical use, after hardening under water for 27 days.

As from the tensile strength of the cement conclusions cannot be drawn in all cases as to the relative compressive strength, it is recommended with very high tensile strength figures, to especially determine the compressive strength of the cement after 7 days' hardening.

In order to obtain corresponding results, sand of equal size of grain and equal quality (standard sand) must always be used.

The German standard sand is taken from the tertiary quartz layer of the brown coal formation in the neighbourhood of Freienwalde a. Oder. The nearly white raw sand is washed in a machine and dried artificially. The sifting of the sand is done on swing sieves suspended like a pendulum. One sieve is used for sifting off the coarse part, while the other is destined for the finer sand. From every day's output a sample is examined as to size of grain and purity by the Royal Testing Laboratory at Gross-Lichterfelde.

For controlling the size of grain sieves, made of yellow metal sheets, 0.25 mm thick, with circular holes of 1.350 and 0.775 mm are used. [The sieves are made by the Royal Testing Laboratory.]

The standard sand found good after repeated tests is put in bags and sealed with a lead seal of the Royal Testing Laboratory. [The sale of this seal has been taken over by the laboratory of the Association of German Portland Cement Manufacturers at Karlshorst.]

Test Specimens.—As it is important to obtain corresponding results when testing the same Portland cement in various places the rules given hereafter must be carefully adhered to. In order to get correct average figures, at least five specimens must be made for each test.

The mixing of the mortar of one part by weight of Portland cement and three parts by weight of standard sand should be done in the mortar mixing machine designed by Steinbrück-Schmelzer, in the following manner: 400 g. of Portland cement and 1,200 g. of standard sand are first mixed dry, with a light spoon in a dish, for one minute. To the dry mixture is added the quantity of water determined beforehand. The moist mass is then mixed another minute and then distributed equally in the mortar-mixer and worked by 20 revolutions of the dish.

The roller of the mixing machine is 3,15in. thick, 7.90 to 7.94in. in diameter weighs 42.42 to 42.68lb. without the axle, and 47.30 to 48.46lb. with the axle in place. The distance of the roller from the mixing dish is 0.20 to 0.23in.

The addition of water for the standard mortar is determined by using square moulds in the following manner: Dry mortar mixtures of the quantities given above are gauged with 128 g. (8 per cent.) and then if necessary with 160 g. (10 per cent.) of water, and mixed in the mortar-mixer as indicated; 850 to 860 g. of the mixed mortar are placed in the mould, the upper part of which is provided with two notches, as illustrated.

and rammed in the Boehme hammer-apparatus with 150 blows. The behaviour of the mortar when rammed indicates about the right quantity of water to be added; accordingly the tests with different quantities of water may be continued. The percentage of water is correct if between the 90th and 110th blow water or mud-water begins to flow out of one of the two notches. The average of three specimens with the same addition of water is to be taken as the standard.

The water flows from a new upper box slower than from one already used once, and therefore the first test with a new upper box is unsafe.

Specimens of standard mortar shall be made as follows: 850 to 860 g. of mortar mixed as prescribed are put into the standard moulds and into the Boehme hammer apparatus and rammed with 150 blows. [The moulds should be well cleaned before using, and be slightly oiled. A mixture of two-thirds linseed oil and one-third petroleum gives the best results.]

The specimens so made are struck off with a knife, polished and marked.

The quantity of mortar made with 400 g. Portland cement and 1,200 g. standard sand suffices for two compressive test specimens.

The hammer head of the apparatus is 4.37in. long, 2in. wide, and 2in. thick, and has a fall, a, of 6.55in. The length of the tailpiece, f, is 3.32in., its height, g, 2.76; the distance h, is 2.38in. and i, 6.63in. Distance b is 9.75in.

The specimens are placed with the mould on a non-porous bed in boxes kept moist and covered, and are taken out of the moulds after about 20 hours; 24 hours after the manufacture the specimens are taken from the boxes and placed under water at a temperature of 15 degrees to 18 degrees Cent.

The specimens of cement to be used under water must be taken out of the water only shortly before the test. The water should not stand more than 2 cm. above the specimens, and should be renewed every 14 days.

The specimens of cement destined for use in the air must be placed standing on triangular wood slats in a closed chamber kept at room temperature.

In order to obtain uniform results when testing the pressure must always be exerted on two sides of the cubes, but not on the bottom surface and the worked top surface.

The average of five specimens shall be considered the compressive strength.

Specifications for Iron-Portland Cement.—Only the first two sections of the specifications for iron-Portland cement differ from those for Portland cement, and therefore only these two are given here.

Definition.—Iron-Portland cement is a hydraulic compound which consists of at least 70 per cent. Portland cement clinker and at most 30 per cent. granulated blast-furnace slag. The Portland cement is prepared according to the definition of the German standard specifications for Portland cement. The furnace slags are lime-alumina-silicates.

They shall contain at least one part by weight of lime and magnesia to one part of weight of soluble silica (SiO_2)+alumina (Al_2O_3). The Portland cement and the slag must be ground finely. Additions for particular purposes, especially for regulating the time of setting, are admissible, limited, however, in amount to 3 per cent. of the whole mass, in order to exclude the possibility of additions solely for increasing the weight.

Essential Principles and Explanations.—It is stated as a result of long-time official tests that if proper granulated slag up to 30 per cent. is thoroughly mixed in factories with Portland cement the iron-Portland cement thus obtained is considered equivalent to the Portland cement and can be judged according to the standard specifications for this cement.

Iron-Portland cement is under the regular control of the Association of German Iron-Portland Cement Works, the members of which have bound themselves to furnish iron-Portland cement exactly according to the specifications given above.

Packing and Weight. — Iron-Portland cement is generally packed in bags or barrels. The package should show distinctly, besides the gross weight and the name, "Iron-Portland Cement," the name of the firm or the mark of the works, as well as the brand of the association. Loss by sifting out as well as variations from the standard weight are admissible to the extent of 2 per cent.

Essential Principles and Explanations.—As various weights are in use with bags as well as with barrels, it is absolutely necessary to give the gross weight. By the term "Iron-Portland Cement" and the brand of the association the purchaser shall be assured that the product is in accordance with the definition given in the specification above.

NEW PUBLIC LIBRARY, DUDLEY.

This building, the gift of Mr. Carnegie, was opened to the public last September. The accommodation on the ground floor comprises a lending library of 20,000 volumes, a large general reading-room, a magazine-room, and staff room. On the first floor are the reference library (with accommodation for about 7,000 volumes), and a ladies' reading-room. In the basement are the heating-chamber, fuel-store, and a large general store-room. When the building was nearing completion it was decided to have the "open access" system in the reference library. This necessitated placing book stacks in the public room, and also allowing the public free access to the stack-room. A special feature is being made by Mr. Timmins, the secretary, and Miss Southall, the librarian, of giving the public absolute freedom in consulting works of reference.

The façade of the building is faced with Hollington stone (coarse quality), which is relieved by a small amount of brickwork. The whole of the bricks used for external facing are 2in. dark red sand stocks with ½in. weathered joints. The two figures surmounting the pediment over the main entrance represent "Literature" and "Science" respectively; while the centre is crowned by a figure symbolising "Philosophy." This sculpture is by Messrs. H. H. Martyn and Co., of Cheltenham, who also executed the decorative plasterwork in the building.

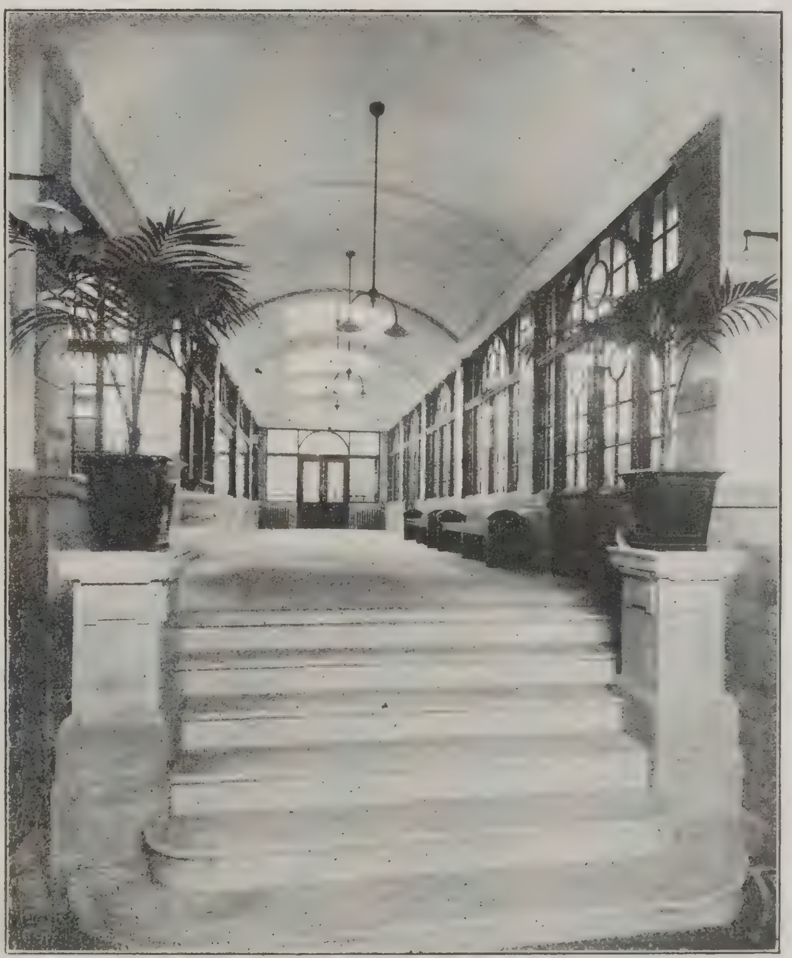
The public staircase is constructed of concrete and steel, and the steps and walls are lined with Hopton-Wood stone (supplied by Messrs. the Hopton-Wood Stone Firms, Ltd., of Derbyshire). A dado of Hopton-Wood is also carried round the hall and borrowers' space.

It will be seen from the plan that a flight of steps is placed in the hall near the main entrance. This arrangement was adopted owing to the difficulty arising from the steep slope of the street, and also to obtain sufficient head-room in the main porch.

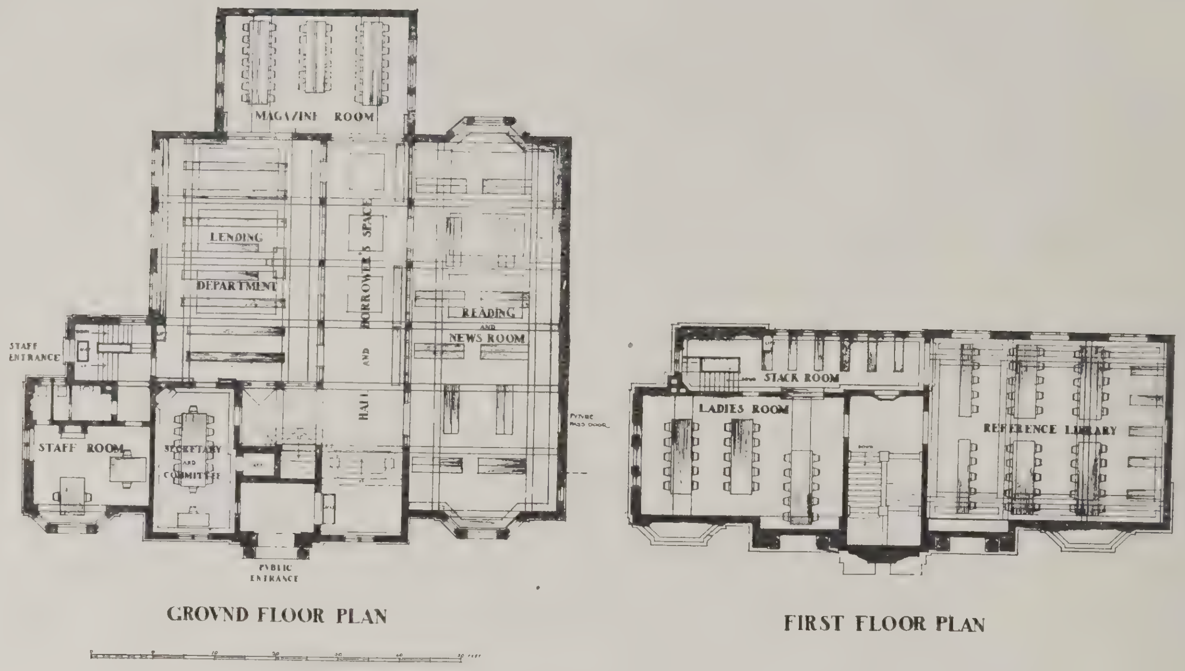
The porch is groin-vaulted and has a marble floor, the hall floors being in terrazzo mosaic with cube borders. The ground-floor rooms are laid with pitch-pine blocks, and the first-floor rooms with oak blocks, the latter being polished. The walls of the first-floor rooms are panelled in mahogany to a height of 8ft. 6in., with furniture and fittings of mahogany also. Roofs are covered with Delabole slates, and flats with asphalt. Warming is effected by radiators and pipes on a low-pressure hot-water system. Inlet ventilators are provided behind the radiators which are fitted with baffle plates. Two electric fans serve for extract ventilation.

The general contractors were Messrs. Mark Round and Sons, of Dudley, and among the sub-contractors, in addition to those already mentioned, were the following: Wood-block floors, Messrs. Hollis Bros. and Co., of Hull; bronze memorial table and mahogany vases, Messrs. the Bromsgrove Guild, of Bromsgrove, Worcestershire. The book lift was supplied by Messrs. J. E. Lucas and Co., Ltd., of London

The clerk of works was Mr. E. Seckerson. The architect was Mr. George H. Wenyon.



PUBLIC LIBRARY, DUDLEY: THE HALL. GEORGE H. WENYON, ARCHITECT



GROVND FLOOR PLAN

FIRST FLOOR PLAN

PUBLIC LIBRARY, DUDLEY: PLANS. GEORGE H. WENYON, ARCHITECT.

NEW BUILDINGS.

PROPOSED.

Devizes.—The following plans have been passed: (1) Proposed alterations and additions to Southbroom House. (2) New w.c.'s in Short Street. (3) Tennis Pavilion in Brickly Lane, for Mr. Cole.

Goldthorpe (Rotherham).—It has been decided to erect a new Primitive Methodist Chapel at Goldthorpe, to provide seating accommodation for 500 persons, at an estimated cost of £1,600.

Halifax.—A new drill hall for the West Riding County Association Territorial Forces, 4th Battalion West Riding Regiment, is to be erected at Blackwall. The site selected is in the corner of the field opposite the Friendly Wesleyan Chapel. The new hall is to be built entirely of stone, and will be two storeys high, with a frontage abutting on to Burnley Road, 88ft. 6in. long, by 45ft. wide. In the basement there is to be a miniature range 60ft., and also the heating apparatus. On the ground floor there will be a drill hall 60ft. by 30ft., an armoury, orderly room, lecture room, bar, and kitchen, parlour, scullery, etc., for the steward. Mr. A. E. Kirk, A.R.I.B.A., of Leeds, is the architect.

Hamilton.—The plans of Hamilton New Academy have been passed by the Dean of Guild Court. The plans show elementary, secondary, and technical schools, the estimated cost of which, including equipment, will be about £40,000.

Harrow.—It is proposed to erect new Congregational Church buildings in Hindes Road, Harrow. The architects are Messrs. Mould, of Victoria Street, E.C., and Bury, Lancashire.

Horden Colliery (Durham).—A new church is to be built at Horden Colliery from the design of Messrs. Potts and Son, of Sunderland.

Lincoln.—The cost of the proposed building of a side chapel under the tower of St. Martin's Church, Lincoln, as a memorial to the late Bishop King, will be about £600. A faculty for carrying out the proposed work has been granted, and tenders will shortly be invited.

Liskeard.—The Chancellor of the Diocese of Truro, has held a Consistory Court to hear an application for a faculty for the removal of the gallery in the parish church. It was stated that a gallery was erected in 1793 at a time when pews were placed in the church and the screen removed. Evidence was given that the gallery was not needed for seating purposes, and that it was objectionable from an architectural point of view. The Chancellor reserved judgment.

Mansfield.—It is the intention of the governing authority to widen Albert Street, and to do so it is necessary to acquire land on the south-west side. The Mayor has a site there, and the Corporation desire a strip, for the improvement of the thoroughfare, varying from 11½ft. to 1½ft. The award made by the Arbitrator of Nottingham is that the Corporation shall pay £456 for the land, to include interest on the capital outlay, cost of the preparation of plans, and in fact all expenses of any kind.

'Maritzburg, S.A.—Before the late Government of Natal went out of office, a substantial sum was allocated towards defraying the costs of extensive improvements at Grey's Hospital, 'Maritzburg, and between £6,000 and £7,000 represents the outlay at present being incurred in connection with an admirable scheme of alterations. The main features of the undertaking are: (1) The provision of a new operating theatre; (2) the erection of a new house for the resident medical officer; (3) the building of additional isolation ward accommodation; (4) a wholesale extension and improvement of the sanitary installation; and (5) a general improvement of the institution grounds.

Mexboro'.—The following plans have been approved:—Fourteen houses, Ferry Boat Lane; two houses, Wellington Street. The amended plan for seventeen houses in Lorna Road, for Mr. S. Jackson, has also been recommended for approval.

Newmarket.—The following plans have been recommended for approval:—Those deposited by Messrs. Holland and Son on behalf of the Exning Conservative Club for the conversion of a building at Exning, subject to satisfactory drainage plans being submitted. Plans deposited by Mr. Potter on behalf of Lord Derby for the re-drainage of Falmouth Cottage into cesspools. Plans deposited for alterations to the servants' apartments at the Kremlin, and for certain drainage work at Kremlin Stud, for Sir R. W. Jardine, provided (with regard to the latter) that the down pipes are connected with the surface water system and not the sewerage system.

Ormskirk.—The Guardians of the Ormskirk Union have decided to apply to the Local Government Board for sanction to borrow £900, which is part of the total of £1,015 required for the extension of the south block of the workhouse infirmary. The total of the various loans outstanding for extensions now stands at £19,993.

Redruth (Cornwall).—The Local Government Board has held an enquiry at Redruth into an application of the Urban Council to borrow £100 for street improvement at Westend, and £400 for works of water supply. The Clerk stated that the population of the town was 10,451, the assessable value £31,800, and the total outstanding debt £7,276.

Rhyl.—A special committee has been appointed to inspect the seawall at the end of the West Promenade, where, owing to the ravages of the sea, the defences are considered to be in a dangerous condition. As a result the Council have instructed the Town Surveyor to prepare plans and estimate of cost for extending the promenade westward to Foryd.

Woolacombe (Devon).—A new church is to be built at Woolacombe, in the parish of Morthoe, near Ilfracombe, at a cost of about £6,500, and the foundation-stone will shortly be laid. The church, which is to accommodate 500 persons, will be of a plain and severe type, and have only a low tower, on account of the winter storms from the Atlantic.

IN PROGRESS AND COMPLETED.

Bacup.—A new Council school in Burnley Road, Bacup, built at a cost of over £6,000, to accommodate 400 scholars, has been opened by the Mayor of Bacup. Messrs. Butterworth and Duncan, Rochdale, were the architects.

Benwell (Newcastle-on-Tyne). — Building operations in Benwell at present include the erection of two picture halls—one at the corner of Condercum Road and Benwell Lane, and the other on Elswick Road. With the latter, considerable progress has been made, but with the other little more than the foundations have been completed. Close by the extension of St. James's Parochial Hall is also in progress.

Brighton.—The foundation-stone of a new church at Preston Park, Brighton, has been laid by Bishop Amigo. The edifice is to be in the perpendicular style of Gothic architecture, and will consist of a nave and one aisle. The length of the building is estimated at 87ft., while the frontage is to be 45ft. The scheme is to build a crypt, which will be used as a parish hall, and it will be so made that it can be enlarged as necessity requires. The portion now in course of erection forms the foundation to the nave of the church, it not being deemed advisable to build the chancel until sufficient funds are available.

Cheadle Hulme.—The foundation stone has been laid of the new parish room in connection with All Saints' Church, Cheadle Hulme. The present contract, let to Messrs. W. L. Atknson and Son, of Bramall, is for the main hall, 50ft. by 25ft., with a large gallery at the west end, and a permanent raised stage or platform, 16ft. by 25ft., at the east end, with retiring-rooms, lobbies, lavatories, heating chamber, store cellars, and kitchen. The complete scheme, which is estimated to cost about £1,800, comprises the addition of a church parlour, crushroom, and cloakrooms. The work is being carried out from plans prepared by Messrs. John Newton, Son, and Bayley, of Manchester, and under their supervision. The heating is being carried out by Messrs. J. Constantine and Son, and the ventilating by Messrs. E. H Shorland and Bros., Ltd. Messrs. John Newton, Son, and Bayley, Manchester, are the architects.

Clifton Campville (Staffs.).—The work of restoration of the parish church is now in active progress, Mr. W. D. Caröe, F.R.I.B.A., being the architect. Many interesting features are being disclosed in the fabric, which proves to be in a more unsafe condition even than was at first believed.

Doncaster.—Plans have been passed by the Doncaster Sanitary Committee for the development of the extensive estate known as Fisher's Park. The estate has recently been put into the market, and some local agitation in favour of its acquisition by the Corporation as an open space has produced no effect. Altogether the estate, when fully built up, will be occupied by over 500 houses, providing accommodation, on the usual calculation basis of five persons per house, for a population of over 2,500.

Dawdon Colliery (Durham).—The new schools at Dawdon Colliery, erected by the Education Committee of the Durham County Council, at a cost of about £9,000, have been opened. There are three departments, with accommodation for 300 children in each. The boys' and girls' departments are contained in a two-storey block on the north of the site, the boys occupying the ground floor and the girls the upper floor. The infants' department is placed in a one-storey block at the south end of the site. All the departments are designed on the central hall system, and each is divided into six classrooms for fifty scholars, and one central hall. The exterior is of brick, with terra-cotta dressings. Mr. J. Eltringham, Sunderland, was the architect.

East Molesey.—The foundation-stone has been laid of the new hospital at East Molesey. The architects are Messrs. Foster, Lovell, and Lodge, of Old Queen Street, and the contractors Messrs. J. Appleby and Sons, of Silwood Street, Southwark Park, whose accepted tender was £3,336.

Gosforth.—The foundation-stone of the new church, which is being erected at the corner of Rothwell Road and Church Road, Gosforth, was laid recently. Gothic in design, the new edifice will be built of stone, and accommodation will be afforded for 510 people. The estimated cost of the scheme is over £4,000.

Harrogate.—The Town Council has approved the following plans:—House at Vernon Road and Kenilworth Avenue; additions to Roughstone, Cornwall Road; house at Warwick Crescent; bungalow at Bilton Lane; alterations to 39, Kent Road; greenhouse at Franklin Mount; greenhouse, Belfort House, Leeds Road; 8 cottages at Regent Street; alterations to Grove Cottage, at Forest Lane.

Herne Bay.—The new Pier Pavilion has been completed, Mr. Percy J. Waldram, F.S.I., and Messrs. Moscrop-Young and Glanfield, London, being the architects. The design was selected in public competition, the assessor being Mr. Edwin T. Hall, F.R.I.B.A.

L.N.A.

The view, taken from the roof, shows the remains of the bedroom in which the female assistants slept.

THE RECENT FIRE AT A BRIXTON DRAPERY STORE.

Kirkby Lonsdale.—The parish rooms at Casterton, near Kirkby Lonsdale, Westmorland, for the Rev. Canon Burton, are now being erected at a cost of £650, from the design by Mr. Tom M. Banks, of Kendal.

Leeds.—Extension of St. Chad's Church, at Far Headingley, is making rapid progress towards completion. The tiling of the extension to the main building has been completed, roofing operations have been commenced on the western transept, and the walls of the eastern transept have been raised almost to the roof level. It is probable that the new portions of the building will be ready for opening within the next six weeks.

The Dewsbury Road Wesleyan Church, which was destroyed by fire some nine months ago, has been rebuilt at a cost of about £3,700. The new building conforms in external appearance to the old structure, but contains many internal improvements. Mr. G. F. Danby, who designed the original building, was the architect, and Messrs. H. Atkinson and Sons, of Leeds, were the contractors.

Christ Church, situate in Meadow Lane, is undergoing extensive renovations, at a cost of £2,000. Some time ago, the tower was found to be cracked and the south wall bulging out. Mr. Sydney D. Kitson, the architect, reported that the only safe course would be to pull down the three most westerly bays of the south aisle, and rebuild them with the old material upon a wide concrete bed or "raft." The whole of the south wall is now down, and during the process of demolition the keystone of the old choir vestry archway was found to be displaced and useless, the structure being held together by a thin iron clamp. Christ Church was built in 1823, in what was then a popular residential part of Leeds. The old stone flags on the floor of the church were put there in 1825.

Leigh-on-Sea.—The Urban District Council has approved the following plans:—House and stable in Theobalds Road; house and cowshed in Tankerville Drive; house in Lymington Avenue; two houses in Burnham Road; house in Salisbury Road; four houses in Leighton Avenue; addition to house (conservatory) in Leigham Court Drive.

Lichfield.—The City Council has approved the following plans:—Cottage, St. Chad's Road; two houses, Birmingham Road; two houses in Leomansley Lane.

FIRE-PREVENTION NOTES.

Drapery Fires.

Yet another devastating fire at a huge linen-drapery establishment, following at no very long interval three or four other great fires, at least one of them involving heavy loss of life, emphasises the need for exceptional treatment of such inflammable premises in the matter of construction and in the equally important matter of such frequent inspection as may ensure reasonable precaution against fire. The fire which consumed the premises of Messrs. Morley and Lanceley, in the Brixton Road, late on Friday night of last week, was luckily unattended by loss of life, although the staff, numbering about seventy, most of them, apparently, young women, were abed when the alarm was given. They were able to get away by means of a back staircase; and their immunity from accident was largely due to the cool capacity of a male assistant who happened to be outside the premises, and who, as soon as the fire was discovered, broke into the premises, awoke the inmates, and lit all the gas jets along the corridors through which they could get away. The flames spread so rapidly that the firemen, although they arrived with the utmost promptness, were unable to prevent the building becoming an utter wreck, as shown in the accompanying illustration. They took great risks, however, in their strenuous and successful endeavours to save adjacent premises. The damage to the drapery is estimated at about £40,000.

Another large drapery establishment fire is reported from Buenos Ayres, where the block of buildings known as the Ciudad des Londres has been totally destroyed, with an estimated loss of £250,000 to insurers.

* * *

Train Fires.

A collision that occurred on the Grand Trunk Railway last week, when a Grand Trunk train crashed into the rear of the Chicago and Montreal express at a spot not far from Durand, was horribly complicated by the usual fire. A sleeping car was wrecked, and immediately burst into flames. Eighteen passengers were killed, and twenty injured. The catastrophe emphasises the necessity for the adoption of more effectual means of fire prevention than railway authorities usually assume to be essential. Not only should the rolling stock be as far as possible constructed of, or lined with, incombustible materials, but the lighting and heating arrangements should be contrived with more regard to contingencies which are, unhappily, not sufficiently rare to warrant general neglect.

Forest Fires. The forest fire of which "settlers" live in such constant dread is easily started, and soon assumes enormous magnitude where the woods are extensive; and they sometimes, as a "Times" writer reminds us, stretch over hundreds, sometimes thousands, of square miles. Such a fire was that which broke out last week in Western Montana, where several townships have been destroyed, and many lives have been lost, and it was stated in a cablegram that "a solid wall of fire was extending for fifty miles from Thompson to the Idaho boundary." A small army was sent to endeavour to cope with the flames. It is a matter, however, in which, for the moment, pigmy mankind seems utterly powerless in face of the stupendous forces of nature. The problem would no doubt ultimately solve itself by the disappearance of the forests, which were in itself a tremendous calamity, independently of the other interests involved. Perhaps it is beyond the wit of man to devise any very effective means of preventing such calamities; yet it should surely be possible to create safety areas that should protect important townships from being completely at the mercy of a mere spark. The "fire breaks" that are commonly made round inhabited districts near forests are sometimes effective; but often they have proved to be entirely futile—worse than useless, because they have given a sense of security that has turned out to be disastrously illusory. Nothing—not even a fairly broad river—can stop a many-miles-long wall of fire driven forward by a strong wind.

Exhibition Fires. The fire at the Brussels Exhibition, to which reference has been already made in this journal, seems to have orginated in the ignition of a curtain in the needlework hall. One of the attendants and a soldier at once tore down the curtain, but the flames had already spread to the roof, and the lath-and-plaster building, stocked with flimsy materials, was entirely destroyed within a few minutes, and, as already recorded, the British section and the Belgian section, forming the main front of the exhibition, were mere ruins within an almost incredibly short space of time. The loss to English insurers, it is now believed, will not much exceed £150,000, although it had been estimated at a million and a quarter. It would have been much greater but for the fine efficiency of some English-made safes in which were deposited a great deal of valuable jewellery. If the fire had occurred earlier in the day, when the gems were on exhibition, these must have perished, to the enormous loss of the underwriters. The British and Belgian sections are being rapidly rebuilt, and the offers of Messrs. Merryweather and Sons to send a steam fire engine of the latest type, and of Messrs. Mather and Platt to supply a complete installation of sprinklers, have been accepted. Although it cannot be said that these precautions are a day after the fair, they are being taken some time after a fire that possibly they would have prevented or restricted. It is further announced that a fire brigade is to be organised to ensure the safety of the new section in the Salle des Fêtes. The lessons of the fire will not, it is to be hoped, be lost upon the promoters of future exhibitions.

BUILDERS' NOTES.

Aberdeen Building Trades. A joint conference of plumbers, painters, carpenters, plasterers and others in the building trade was held recently at Aberdeen with regard to encroachments by the different trades. It appears that complaints have been made of tradesmen doing work which really does not belong to their particular branch of business, and the purpose of the conference was to arrive at some agreement by which the grievance could be stopped. It was decided that the matter should be laid before the different unions in order that a definite settlement might be come to on the question.

The Leigh Painters. Mr. A. A. Hudson, the arbitrator appointed by the Board of Trade to enquire into the painters' dispute in the Leigh district, has delivered his award. The painters struck 16 weeks ago to resist a reduction in wages of from 9d. to 8½d. per hour. Mr. Hudson has decided that the men shall receive 9d. per hour, that the hours of work shall be from 6.30 a.m. to 5.30 p.m., that further disputes shall be submitted to him, and that men taken on during the dispute by the employers shall be retained, about 70 or 80 men have been affected, and work has now been resumed.

Firemen as Painters. A Sheffield painter writes to the "Sheffield Independent" commenting very strongly on the employment of firemen to painting at the local fire stations. He asks: "I should like to know how we are going to be able to pay our rates if our living is taken out of hands in this manner." Two or three years ago the same correspondent complained of a similar state of things. "It is not only of the present I am thinking," he adds, "but by the time our firemen have earned a pension they may blossom out as full-blown painters, while we, who have had to serve an apprenticeship, can retire to the workhouse.—Yours, etc., G. H. H."

The Osborne Judgment and After. The Labour party finds itself in grave difficulty as a result of what is known as the Osborne judgment, by which Trade Unions are debarred from making a compulsory levy on their members for the maintenance of representatives in Parliament. The first case, initiated by Mr. Osborne, a railway signalman, against the Amalgamated Society of Railway Servants, was carried to the House of Lords, and since the decision of that house, twelve other injunctions have been obtained against various Unions, affecting the position of sixteen members of Parliament. The number of applications for injunctions, also, seems likely to increase. The Unions then made an appeal for voluntary subscriptions; but this has been a complete failure. A meeting of the Joint Board, representing the various recognised labour organisations, has therefore been held in London to consider the situation, and the following resolution was passed:—

> That the Joint Board, representing the Parliamentary Committee of the Trades Union Congress, the Labour Party, and the General Federation of Trade Unions, having considered the events which have followed the Osborne decision, resolves:—
>
> (1) That the decision does not merely affect Parliamentary representation, but make it impossible for Trade Union branches to join in the work of local trades councils, and also strikes at the freedom of discussion and of resolution which has always been enjoyed by the Trade Union Congress in so far as that Congress has taken action of a political character in the interests of wage-earners;
>
> (2) That the decision denies the right of Trade Unions to carry out their nominal statutory purpose of "regulating the relations between employers and employed" in so far as modern conditions of industry and the highly organised state of capital render Parliamentary action necessary for this purpose.
>
> (3) That the decision deprives the Trade Unions of the freedom and the right which they have enjoyed for nearly fifty years, and which they have exercised only with the approval of their members and to the advantage of the community.
>
> The Board therefore claims: That these rights be restored at once so that the Trade Unions may be put in a position to fulfil their statutory functions in such a manner as the members of the respective unions according to their rules shall decide.
>
> The Board therefore regrets the decision of the Government not to grant facilities for the consideration of the Bill introduced in the early part of the session to carry out their object, nor even to give definite guarantees as to their frequently repeated pledges to provide for the payment of members and returning officers' expenses; and having regard to the injustice of the decision and of the urgency of the matter the Board calls upon all affiliated organisations, in view of the misrepresentations of the position which have appeared recently in the Press
>
> (1) to co-operate in enlightening public opinion as to the issue, (2) to approach their Parliamentary representatives on the subject, and (3) to urge their members to make this a test question at all elections.

According to the daily Press, the injunctions point to a revolt on the part of Trade Unionists against the capture of their organisations by the Socialist party. Opinions as to the course to be pursued are at present divided. It has been urged that the legalisation of payment of members and of election expenses would solve the difficulty; but the Labour leaders do not agree that this would be a complete alternative to an alteration in the law which they desire. Mr. Arthur Henderson, M.P., put the matter in a nutshell in the course of an interview:—"If it is right for us to be governed by majorities (as we are in most things) we see no reason why a Trade Union should be deprived of the right of the majority of its members to decide for what purpose its funds should be applied." As the Government seem to be lukewarm on the subject of further legislation, there is a fairly certain prospect of a big electioneering campaign by the Labour members during the coming autumn.

A Lost Tender. At a meeting of the Rotherham Board of Guardians, the loss of a tender for some work at Badsley Moor Lane, was reported and discussed. It appears that five firms of builders applied for the particulars, but only four tenders were received. The architect thereupon wrote to the fifth firm, enquiring why they had not sent in a tender, and received a reply that the firm had duly tendered, their tender having been deposited in the clerk's letter-box on a given date. The clerk, however, informed the Finance Committee that neither he nor his staff had seen the tender. The Committee decided to ask the firm in question to supply a duplicate tender, and this being received, was found to be the lowest of the five, and was accordingly accepted, subject to some amendments to reduce cost.

FEDERATION NEWS.

Barnsley.

The monthly meeting of the Barnsley Federation was held at the King's head Hotel on Wednesday, August 10th, Mr. E. Broley (president) occupying the chair, supported by twenty members.

The usual preliminary routine business having been disposed of, the chief business of the evening was the proposed formation of a "Builders' Exchange." The President submitted why Barnsley should have an Exchange, and the pros and cons were duly considered by several of the members present, one of the main objections being the question of selling intoxicants, without which it would be practically impossible for the Builders' Exchange to pay its way. A deputation composed of the President, Councillor W. G. England, J.P., Councillor G. Hough, along with the secretary, had visited the Huddersfield, Halifax, and Keighley Exchanges, and the President submitted that they had been very courteously received at each Exchange, and from what they had seen there there was no reason why Barnsley should not support an Exchange. Ultimately the discussion was adjourned to the September monthly meeting, in the meantime the Barnsley Traders' Association to be approached with a view of enlisting their co-operation in the formation of a combined Builders' and Traders' Club.—J. Denton, Secretary.

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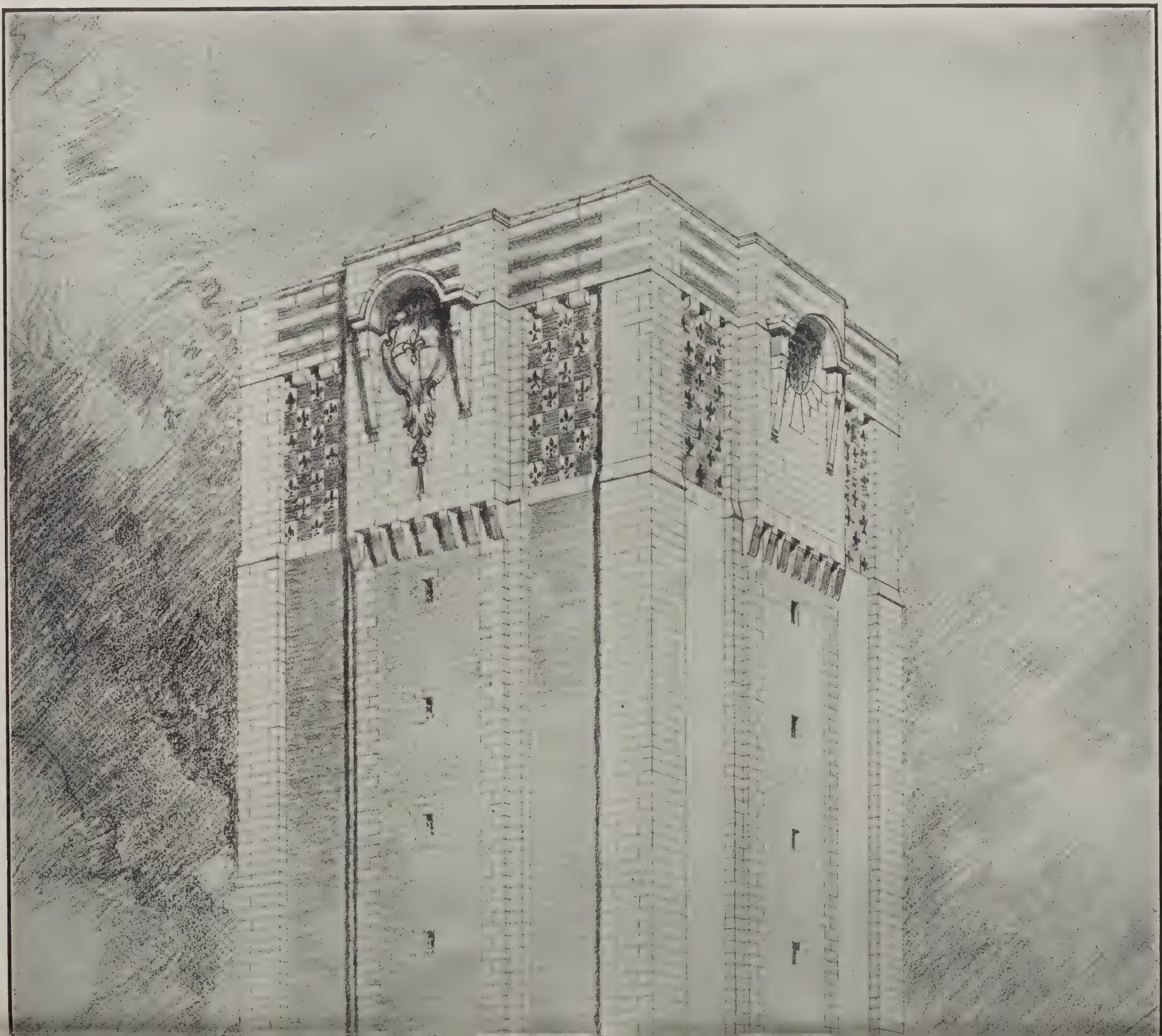
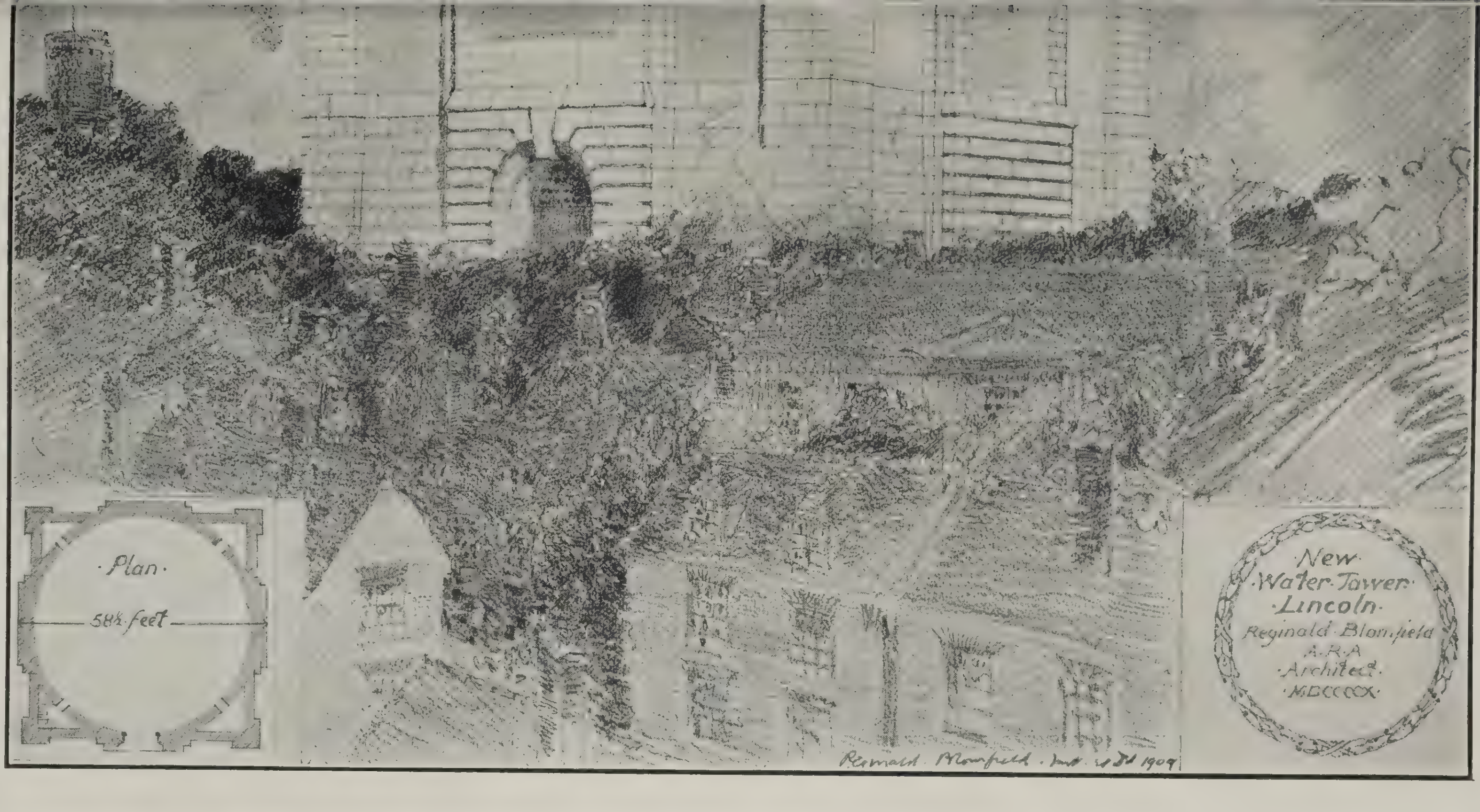
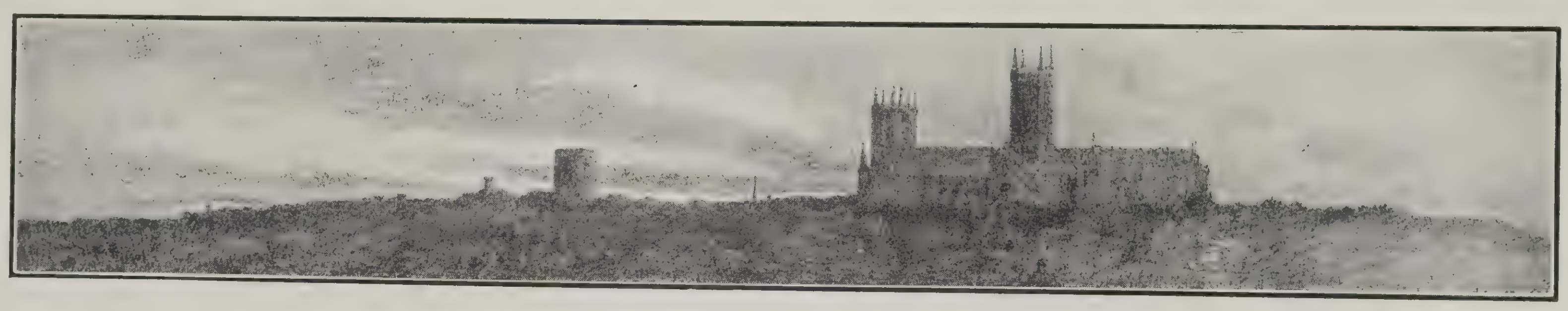
Supplement to The Architects' and Builders' Journal, Wednesday, *September 7th*, 1910.




Plan
58½ feet
New Water Tower Lincoln
Reginald Blomfield A.R.A. Architect
MDCCCCX
Reginald Blomfield. inv. et del 1909



The new Water Tower at Lincoln is being erected on the ridge of Lincoln about a quarter of a mile to the west of the Cathedral; and as it is of considerable size, the problem was to design a building which would not clash in any way with the west towers of the Cathedral, and which would also embody the unusual proportions necessitated by practical conditions. On these grounds, the idea of a lofty keep was taken as the motive of the design. The fleur-de-lys on the cartouches and on the inlay squares is the crest of the City of Lincoln. In the squares the fleur-de-lys are to be formed with local iron stone inlaid flush. The main tank is carried on a circular brick tower within the square, which is faced externally with Darley Dale stone. The tower has been designed by Professor Reginald Blomfield, A.R.A., of New Court, Temple. The Engineer for the whole of the water works is Mr. Neil McK. Barron, and the Contractors for the work are Messrs. Henson and Son. In excavating the foundations, some interesting remains of Roman pottery, glass, etc., of the first century have been discovered, which were noted in the "Times" of August 15th.

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THE ARCHITECTS' &
BUILDERS' JOURNAL

WEDNESDAY,
SEPTEMBER 7th, 1910.

Volume XXXII. No. 814.

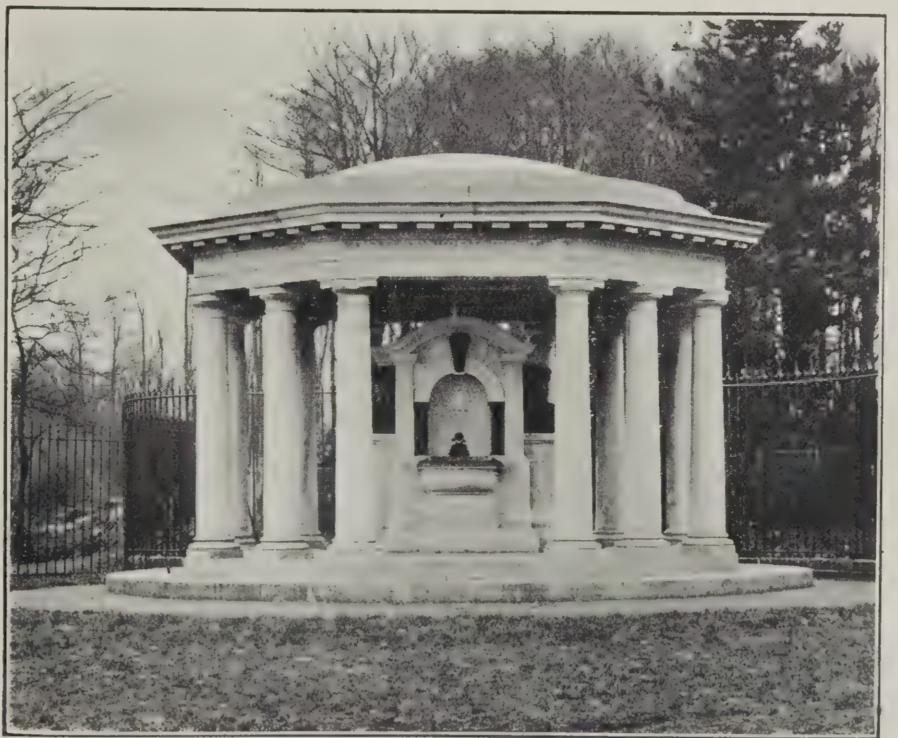
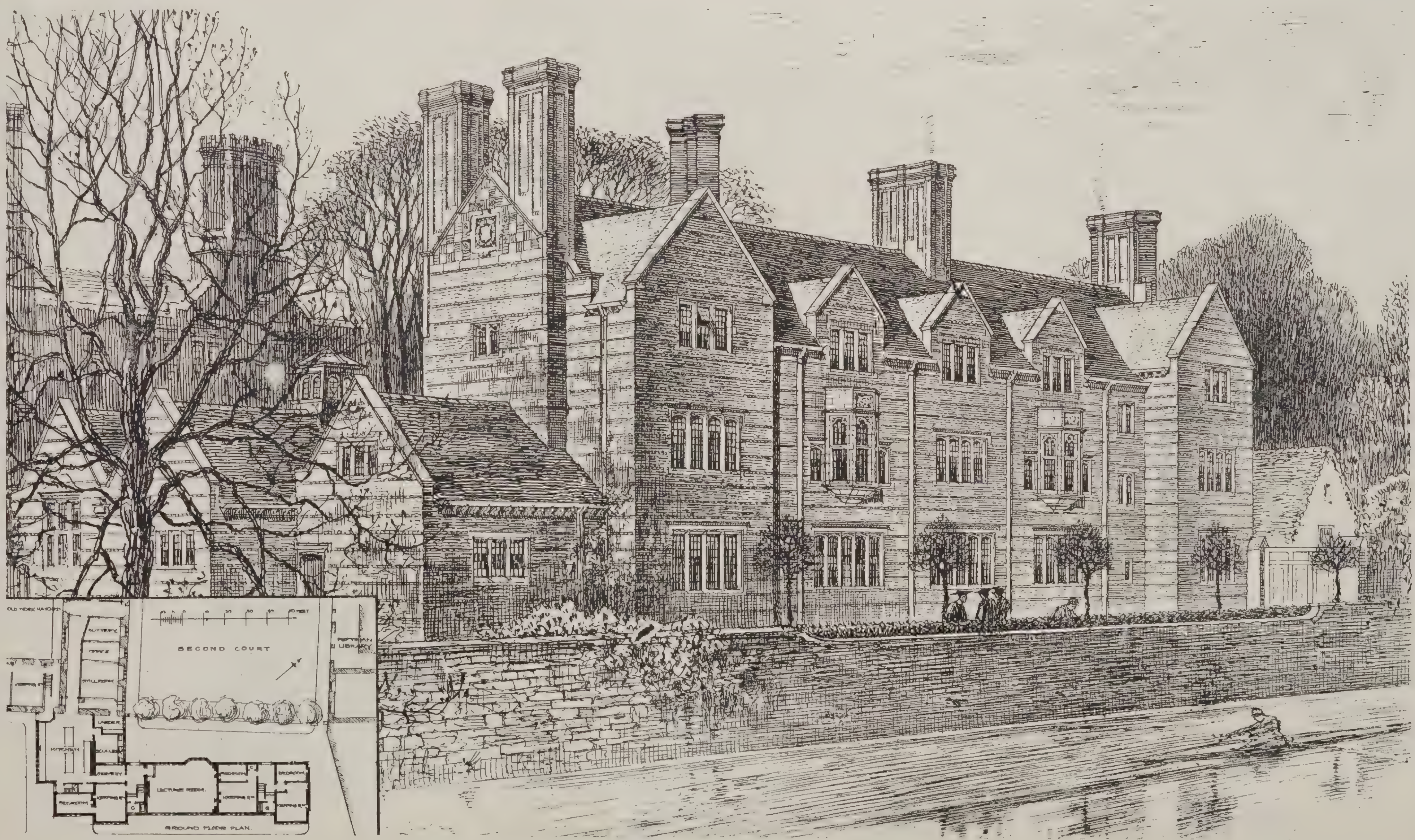


Photo : T. Lewis.

FOUNTAIN, COLLEY HILL, REIGATE. SETH-SMITH AND MONRO, ARCHITECTS.

(See page 238.)



NEW KEEPING ROOMS, ETC., ST. MARY MAGDALENE'S COLLEGE, CAMBRIDGE. SIR ASTON WEBB, R.A., AND E. INGRESS BELL, F.R.I.B.A., ARCHITECTS. *(See page 240.)*

Royal Academy Exhibition, 1910.

THE ARCHITECTS' & BUILDERS' JOURNAL.

SEPTEMBER 7th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 814.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

"The Neglected Art."

"THE Neglected Art" of architecture is to some extent losing its claim to this distinction, by reason of the rather extensive correspondence under this head that is appearing in the Welsh Press. Mr. G. A. Humphreys, F.R.I.B.A., welcomes this publicity, and has ensued it. Referring to the letter to which attention was given in these pages last week, he says that it is clear that the writer's artistic feelings have been shocked, and adds: "Would that many more were similarly shocked, and wrote their views as clearly as he has done! It would be in the highest degree educative, and in time we might advance beyond the present degenerate position, with its ineptitude of admiring the antique, without regard to its merits or demerits, and arrive at a state where the true nature and functions of architecture are understood." It is undeniable that much of the interest in architecture is undiscriminating and factitious; and it turns to ancient architecture as offering objects for admiration that, being old, are presumably safe. Conversely, what is new is suspect, and is therefore avoided or contemned—usually in expressions that are too vague to admit of traversing. Mr. Humphreys thinks that if the public could be "taught to think of architecture architecturally, there would be added a large interest to daily life." It would be so; but there is always the danger that the public is usually addicted to admiration of the wrong things, and that the point at which they would ultimately arrive under any teaching process would not find them thinking architecturally, but thinking themselves to be thinking so, and, in the fulness of their ignorance, doing much to debase an art that perhaps, after all, would be the better if it escaped their too particular attention. One's attitude on this matter of interesting and instructing the laity in architecture is apt to be governed by moods; and for the moment we are disposed to doubt whether architecture would greatly benefit by the keen and probably pragmatical public that is conjured up in the mind's eye by the charming phrase "thinking of architecture architecturally." Knowledge comes, but wisdom lingers; and it would be more advantageous to have a wise rather than a knowing public—a public that knew enough of general principles to delegate its architectural thinking to the men in whose knowledge, skill, and taste it could place implicit trust. Much, as Mr. Humphreys points out, is being done to bring them to this desirable state of mind, or at all events to inspire them with confidence that they can trust the architect, even as they trust the duly qualified physician. "There never was," we are told—and we are very anxious to believe it—"such a definite and sincere desire on the part of architects to improve the position of art as exists at the present day; and the Board of Architectural Education, working in conjunction with the Royal Institute of British Architects, is doing a great work. The special degrees in architecture given by the old and modern universities, together with the systematic training carried out by numerous colleges, is all evidence of the modern movement by the profession itself." Agreed; and without losing sight of the common and discouraging, and withal drearily commonplace, objection that the artist is born and not made, we rejoice in all these educational activities and in some of the fruits thereof; because even native genius is all the better for the discipline of training and scholarship, wild fire being mischievous unless properly restrained. And if systematic education is necessary for the genius, it is perhaps even more essential to the rank and file, who, after all, will be called upon to do the great bulk of the work, and on whose behalf education is mainly organised. We want, then, an educated, a qualified, and hence a reputable and respected body of architects, and a public who will know enough to refrain from vexatious suggestion and interference. It is this consideration—of the best method of conspicuously and palpably investing the profession with the dignity, authority, and status that properly belong to it—that leads so many of its members to believe in Registration by Act of Parliament; which might or might not have the desired effect.

Contract Systems and Locked-up Capital.

SINCE our reference to this subject in last week's issue, several more letters have appeared in the "Glasgow Herald" with respect to the innovation (as regards Scotland) of placing the several works of large buildings in the hands of one contractor. One correspondent states his experience as being that where one contractor is responsible for the several works of the complete building, he sub-lets the work to the various tradesmen, which "invariably leads to what Americans call 'graft.'" He claims that the system of separate contracts (each tradesman to his own work) which has been in existence so long in Glasgow has worked well, and he questions whether any other city has a cleaner business record. He adds—quite gratuitously, as we venture to think—"But if this system (practically new to Glasgow) of placing the whole contract for the various works of a building in the hands of one contractor is encouraged, then farewell to the straight, clean-handed placing of contracts." It does not seem to occur to this correspondent that the business integrity which depends on the facilities for keeping a close watch on it can be of no great intrinsic value. Another correspondent contends that the general contract system entails a vast amount of extra labour. It could surely be contended with equal plausibility that the contrary effect would be produced by the reduction of overlapping and the economy of general supervision. This correspondent agrees with those who make charges as to "the principal contractor setting one sub-contractor against the other, as in these days, in the building trade, it is impossible for him to make a profit otherwise, and yet be saddled with all the responsibility, including, as it does now, the employers' liability." Then he turns to a subject that, in its English aspects, has been dealt with somewhat exhaustively in these pages. "It is no uncommon practice," he states, "to hold up measurements for over twelve months [after the work is completed] without involving any extra percentage on the proprietor. Is this right? And cannot it be remedied?" He thinks it can.

Delay, he adds, justly enough, "ties up the contractor's capital to a serious extent for a lengthy period, and necessarily in most instances the sub-contractor's also—and this without any increment to them. There are numerous instances of bad debts incurred through this, and I believe that many a bankruptcy could be traced to it." That bad climax we have shown, by too numerous concrete instances, to be, as it were, beyond belief. The bankruptcy of several large English firms has been directly traced to locked-up capital.

Competition Deposits.

A CORRESPONDENT has favoured us with the particulars of a strange surprising adventure in a recent town-hall competition. No good purpose would, for the moment, be served by mentioning names, the general principle involved being the chief subject of interest. The essential data of the case may be briefly summarised. An architect, in reply to an advertisement, applied for the usual plans and conditions, and, in forwarding the cheque for one guinea required as a deposit, stated explicitly his assumption that, in accordance with "the usual procedure," this deposit would be returned in case the architect, deciding not to compete, sent back the documents within one week of receiving them. The town clerk, in acknowledging the receipt of the deposit, merely observed: "The deposit will be returned on receipt of a bona fide design." On examining the documents accompanying this acknowledgment, the architect decided not to compete. He returned the documents by the next post, complained that the point he had raised had not been definitely answered, and enquired, "Do you not think that it would have been better to have replied to my letter to the effect that your council did not intend to return any deposits sent unless a design was submitted, and have enquired whether I wished you to send the conditions or return the cheque? This," he urged, "would at least have given me the opportunity of deciding whether it was really worth my while to pay one guinea for the privilege of reading the said conditions." He added that, in the circumstances, and especially considering that the retention of deposits was obnoxious to the profession, he had felt justified in stopping the cheque. In reply to this the town clerk promised to take the instructions of the council; and having done this, he apprised the architect that "The council regret they cannot vary the conditions set out in the advertisement, viz., that the deposit is only returnable on receipt of a bona fide design. I must therefore ask you to send me another cheque for £1 1s., or cancel the order to your banker not to pay the cheque I now hold." The architect replied that as the advertisement did not state that the deposit of one guinea would *only* be returned on receipt of a bona fide design, he had "naturally concluded that your council were adopting the usual course of giving intending competitors the usual opportunity of consulting the conditions of competition before binding themselves to submit a design." In order that there should be no mistake about this point, however, he had, as we have seen, expressly stipulated, in forwarding his cheque, that he did so on the assumption "the usual procedure" would be adopted of returning the deposit if the architect decided not to compete, and sent back the documents within a week. This stipulation having been ignored, he felt justified in refusing to budge from the course he had taken with regard to the cheque. There, for the moment, the matter rests, and we would prefer not to comment upon it, "wondering," in Bunyan's phrase, "whereto these things may grow," and preferring not to risk prejudicing the issue. Upon the general question of deposits, however, it is permissible to say a word. It is difficult to see any other justification for them than their presumed effect in preventing the undue waste of documents. If it were not customary to exact a deposit, all kinds of undesirable applicants might occupy the field unprofitably. Some might be actuated by a morbid desire to satisfy merely idle curiosity; others might have no other object than that of self-education, eager young students having been known to collect such documents whenever they could obtain them gratis. The demand for a deposit has a decidedly steadying influence, and therefore to some extent protects the promoters against frivolous, vexatious, and sterile applications. The cheque is a sort of proof that the applicant is a man of some standing, and that probably he has serious intentions with regard to the competition. That object having been served, there should, we feel very strongly, be no question of retention, whether or not the architect, having examined the conditions, sees fit to become an actual competitor. To insist that an architect who, having examined the conditions, may see good reasons why he should not compete, should nevertheless send in a bona fide design or forfeit his deposit, is simply ridiculous. There have been, unfortunately, many complaints of the arbitrary manner in which local authorities have snatched at forfeiture of deposits; whereas it is difficult to conceive that they are in any circumstances or in any sense justified in the imposition of any such penalty.

Scotsmen and Brickwork.

SCOTSMEN do not, as a rule, love brickwork. They think that stonework looks far more noble; and hence their first impression of an English town where brickwork prevails is that it looks unspeakably mean; bricks being associated in the Scottish mind with factories, barracks, and workhouses, and therefore regarded as unfit for buildings of higher degree. Some stern Scottish "Covenanter's" opinion of the Roman Catholic cathedral at Westminster, which is the apotheosis of brickwork, would surely reach the zenith of objurgatory essays. It is all a matter of sentimental prejudice, and attempts to justify the preference on more solid ground have usually failed, good brickwork being well able to hold its own at all points of the comparison. The growing regard for colour, however, seems to have spread as far as Glasgow, where an important building is being faced with brickwork, to the delight of a correspondent of the "Glasgow Herald," who praises the architect for thus "adding a spot of colour in a very dull corner." He objects, however, to the laying of three courses of stretchers to one of headers, which he calls "lazy man's bond." There are, he very obligingly explains, "only two bonds in brickwork—English and Flemish—all the others are bastards." He signs his letter with a pseudonym from which nothing can be inferred as to nationality; but his observations do not support the flattering inference we should have liked to draw that he is a Scottish convert to admiration of the beauties of brickwork; for he remarks upon the danger of unattractive specimens prejudicing "the already prejudiced Scots people against all brickwork." And his profound knowledge of the recondite subject of bonds, lawful and illegitimate, surely bespeaks the Englishman. In any case, it is gratifying to find that brickwork is being not only tolerated but admired in Scottish cities, whose grey austerity—and here perhaps the Southron in his turn may be accused of prejudice—might be immensely relieved by the occasional introduction of the warmth and colour and charm that brickwork can bestow.

The Psychology of Compensation Claims.

A WORKMEN'S compensation case, of which the result will be noted with especial interest by building trade employers, shows a remarkable conflict of medical evidence, and suggests a somewhat neglected factor in the problem that thus arose. A firm of sanitary engineers applied to the Nottingham County Court for reduction or termination of an incapacitation award that had been made to a plumber. The doctors called on each side were equally emphatic in the expression of their opposing opinions—on the one hand that the plumber was, and on the other that he was not, still incapacitated by lead-poisoning. In these circumstances, Dr. Pye Smith, of Sheffield, was called in as medical referee. He found that the plumber had completely recovered from the disablement by lead-poisoning. Ultimately, the applicants agreed to pay the plumber five guineas, and also to pay the costs contingent on the settlement of the case. If there had been any question or suspicion of malingering, the termination of the case would no doubt have been less favourable to the plumber, whose representation of his condition was no doubt perfectly genuine; and it has often struck us that even strong suspicions of malingering are sometimes wholly unjust. It may be that they do not always take sufficiently into account the psychological elements of such cases. A man who has been injured by an accident, or who has contracted some disease incidental to his employment, may, we think, honestly continue in the habit of feeling unfit for work, when, as a matter of fact, the substantial cause for that feeling has disappeared. It is always very easy to fancy one's-self ill or out of condition, and it is sometimes very difficult to accept expert advice that contradicts the assumption. It would appear probable that the wholesale general charges of "shamming Abraham" that are brought against workmen are made in ignorance of such phenomena. A man is seldom so ill or so well as he thinks he is. Nevertheless, this very fact—if fact it can be called (and we fully admit the speculative character of the theory)—points to the necessity for the most stringent investigation of all compensation claims, and for the consideration of the whole question upon more scientific lines than hitherto. It is in some quarters held that cure by suggestion is possible; and if that is so, the converse (of illness or incapacity by suggestion) seems equally feasible, and may account for much regrettable misunderstanding on both sides, whereby unjust aspersions may be cast on the workman, or, on the other hand, unnecessary hardship may be inflicted on the employer. The point we have ventured to raise is therefore of practical and material interest, although at first sight it may appear to be a little bit fanciful; and of course it is advanced with all reserve, and in full recognition of the elusive and insubstantial character of the phenomena that appear to be involved. On the general subject of workmen's compensation, we are reminded by a "Times" message from New York that a new Workmen's Compensation Act, which is "probably the most advanced on the subject ever enacted in America," became effective in New York State on the first day of the present month. A summary of its provisions is given under our "Foreign Notes."

The St. Paul's Bridge Squabble.

AN extraordinary importation of spleen into the negotiations between the City of London Corporation and the London County Council with regard to the proposed St. Paul's Bridge is indicative of the way in which a controversy may degenerate into an unseemly squabble. The Corporation and the London Council are old antagonists, and lose no opportunity of quarrelling. The proposed bridge affords them an excellent bone of contention, about which they may annoy and thwart each other for months to come. The writer of a letter to the "City Press" exhibits, we fear, the typical spirit in which these quarrels are usually conducted. He says: "The letter from the London County Council gives the Corporation a splendid opportunity for building the bridge 'on its own,' since the former has all but said in as many words that it may not entertain the question of tramways in connection with the scheme." He then quotes the following extract from the Council's letter: "It is further proposed that the payment by the Council of the suggested contribution shall be spread over as long a term as possible. The committees concerned will be glad to learn what proposals the Corporation desire to make on this point. The whole arrangement indicated above is further subject to the Council being afforded such facilities as it may desire for constructing tramways on the new bridge and approaches, it being understood that the Council shall be under no obligation to construct such tramways, or, if constructed, to extend them to the north of Cheapside, so as to link up with the existing tramways in Aldersgate Street." The genial comment on this is: "The County Council having suggested that it may not feel under any obligation to provide tramways in connection with the proposed bridge, why, in the name of common sense, should not the Corporation take a similar line, and build a bridge without providing for the passage of tramways across it? I do not see why the City authorities should not build a bridge 80ft. wide instead of one 105ft. wide—I think that is the proposed width of St. Paul's Bridge—and thus not only reduce the cost of construction, but become the masters of the situation. An 80ft. bridge would give all the accommodation which ordinary vehicular traffic requires, and would render the vexed subject of tramways out of the question. We are not 'tramway mad' in the City, if some people are outside it. Consequently, it appears to me that the Corporation should take its courage in both hands, and apply for a Bill in Parliament to build St. Paul's Bridge at its own expense out of Bridge House Estates Funds. As to any successful opposition to the Bill, I do not anticipate it, as the London County Council has, by its own letter, given its case away in the fateful words: 'It being understood that the Council shall be under no obligation to construct such tramways, or, if constructed, to extend them to the north of Cheapside, so as to link up the existing tramways in Aldersgate Street.' I think it is a thousand pities that the two bodies cannot work together in this matter, but it takes two to make a bargain, and, if the letter from the Spring Gardens folk means anything at all, it certainly means that, so far as St. Paul's Bridge is concerned, the County Council is 'off.'" We have, of course, not the smallest desire to take sides with either the Corporation or the Council. We deprecate and deplore any attempt, such as that under notice, to widen the chasm and narrow the bridge. It pains us to notice that, as usual, the protagonists are wasting their energy over merely paltry and sordid trivialities, and apparently they know or care nothing about the infinitely larger issues that are at stake. Hardly any notice has been taken of the grave and dignified request, preferred at the beginning of the year by Mr. Ernest George as President of the R.I.B.A., that the bridge must be so designed as to be a credit not merely to London, but to the nation at large. Both the Corporation and the Council seem in need of the reminder that not merely local but imperial issues are involved, and that these will not be allowed to be smothered in a welter of pettifogging and contemptible persiflage.

Inefficient Labour.

THE annual report issued by the superintendent of the Westminster Municipal Labour Bureau includes some instructive if rather depressing observations. It is, for instance, stated that many situations cannot be filled for lack of suitable applicants. That is especially the case in respect of boys, who, although they have passed the requisite school standard, appear to lack the efficiency necessary for success in after-life. This is a somewhat serious reflection on our national system of education. Builders, however, in common with most other employers of labour, have only too much reason to know that it is no more than a mild statement of a truth that they have realised to their cost. That the vast sums lavished on so-called education should produce no better results than those which are the cause of such common complaint is a scandal which may stand a better chance of redress now that it has come so pointedly under official observation. In fairness, however, it must be allowed that in all probability the better class of boy does not come so prominently under the notice of the Labour Exchange officials as does the lad whose inability to find employment for himself may be a measure of his incapacity as a worker. But even with this discount allowance, it is plain that elementary education as at present organised is very far from being an efficient means of developing intelligence. We have often thought that important organisations of employers, like the National Federation of Master Builders, might effectively combine to set this matter on a sounder footing; and possibly the Labour Exchanges may render them valuable aid towards this desirable consummation.

NOTES AND NEWS.

Fountain, Colley Hill, Reigate.

The fountain illustrated on page 233 is built at the extreme north-west corner of the Long Beeches, Colley Hill, and has been presented by Lieut.-Col. Robert W. Inglis, V.D., to the town of Reigate. It is constructed of Portland stone. The interior of the saucer dome is covered with glass mosaics by Messrs. Powell and Sons, of Whitefriars, London, illustrating the exact positions of the planets comprising the solar system drawn up as from December 1st, 1909, thus indicating the date of the erection of the fountain. The architects were Messrs. Seth-Smith and Monro, with Messrs. Holloway Brothers as builders, and Messrs. Farmer and Brindley as sculptors and carvers, who modelled the arms of the town, the supporting figures, keystone figure, columns, basin-lips, and cups, in bronze, from the architects' full-sized drawings.

Architectural Copyright.

The discussion on this subject is continued in "Country Life" by Mr. Ernest Newton, Mr. P. Morley Horder, and Mr. Sydney D. Kitson. They all throw cold water on the proposal for copyright. Mr. Newton thinks that it would be embarrassing to the architect and fatal to the natural development of architecture. If an architect's work is sufficiently interesting to influence others, intelligent plagiarism is all to the good. Imitation of good work seems to him to be the only possible line of advance. Although the caricaturing of an architect's building is painful to the architect and bad for architecture, the proposed cure would be worse than the disease. The remedy lies in the hands of the public. If they become more discriminating, "the vendors of architectural hash will find their occupation gone." Mr. Morley Horder does not think that there is the least chance for copyright, nor does he see that it would be of the least assistance to architects. Copying can seldom, in the nature of the case, be successful. "The experience of most architects who are anxious about their work is, I think, that they are sorry for the man who is trying to repeat a design with which they are fairly disgusted long before it is finished. . . . After all, can anyone successfully copy an art which owes so much to the refining touches given by personal supervision, and the particular setting of a building?" Then, again, "The law is already sufficiently ill-informed in all matters of art, without adding a new possibility of misunderstanding." Mr. Kitson thinks that the legal protection of architecture can do but little good, and may actually do harm, to the orderly evolution of architectural designs. He would prefer legal registration, when "any flagrant act of 'lifting' a plan or feature" could be punished by causing the culprit to be struck off the rolls. On the Continent they exact an indemnity; for we note that M. Acker, the architect of the Brussels Exhibition, has just been awarded £80 in an action brought against an architect who had erected two houses of which the façades were closely imitated from a building designed by M. Acker. Also the judgment is to be published, at the expense of the defendant, in three newspapers to be chosen by the prosecutor.

A Fine House by Robert Adam.

Sir Watkin Wynn's house, No. 20, St. James's Square, is one of the most characteristic, as it is one of the most sumptuous, of the many town houses designed by Robert Adam. It is elaborately illustrated by engravings in that rather grand book, "The Works in Architecture of Robert and James Adam, Esquires," the first volume of which was published in 1777, but it has been left for "The Architectural Review" to give a complete set of photographs showing the chief features of the exterior and interior. These are published in the September issue. Robert Adam gave the most careful consideration to all his details, and this house in St. James's Square is perhaps as typical an example as it is possible to find. Ceilings, cornices, chimneypieces, doors and their furniture, and the delicate stucco decoration of the walls, are perfect in finish and precision of workmanship, and all bear the impress of the peculiar genius of their creator. Adam pretended to be an inventor, and so he was to some extent. But the versatility of his mind was stored, not with knowledge of great Classic work, but with provincial and curious manifestations of it. His interiors are less pleasant to live in than Georgian ones, yet they have a quality of their own—a cool and open feeling, a certain silver-grey harmony, not without charm and repose. In connection with the plans of the house it is observed that although on paper Adam's plans look admirable, being so clear and symmetrical, in reality they do not touch the imagination. Each room is a thing by itself, perfect in a lifeless way, but having no relation with its neighbour. His staircases, too, are poor. A staircase is one of the most difficult things to design, and yet it gives more character to the inside of a house than any other feature. In this respect Adam failed egregiously. He attempted to give Sir Watkin Wynn's staircase an effect of width by the introduction of the great alcove which appears on the ground floor and on the landing above. It is all most carefully planned, but these great niches, though fine in themselves, do not save the staircase, which, in spite of everything, looks like a funnel. The balustrade is of cast iron, and, though somewhat exquisite in design, does not give half the pleasure one experiences in regarding the simple wrought-iron scrolls it superseded.

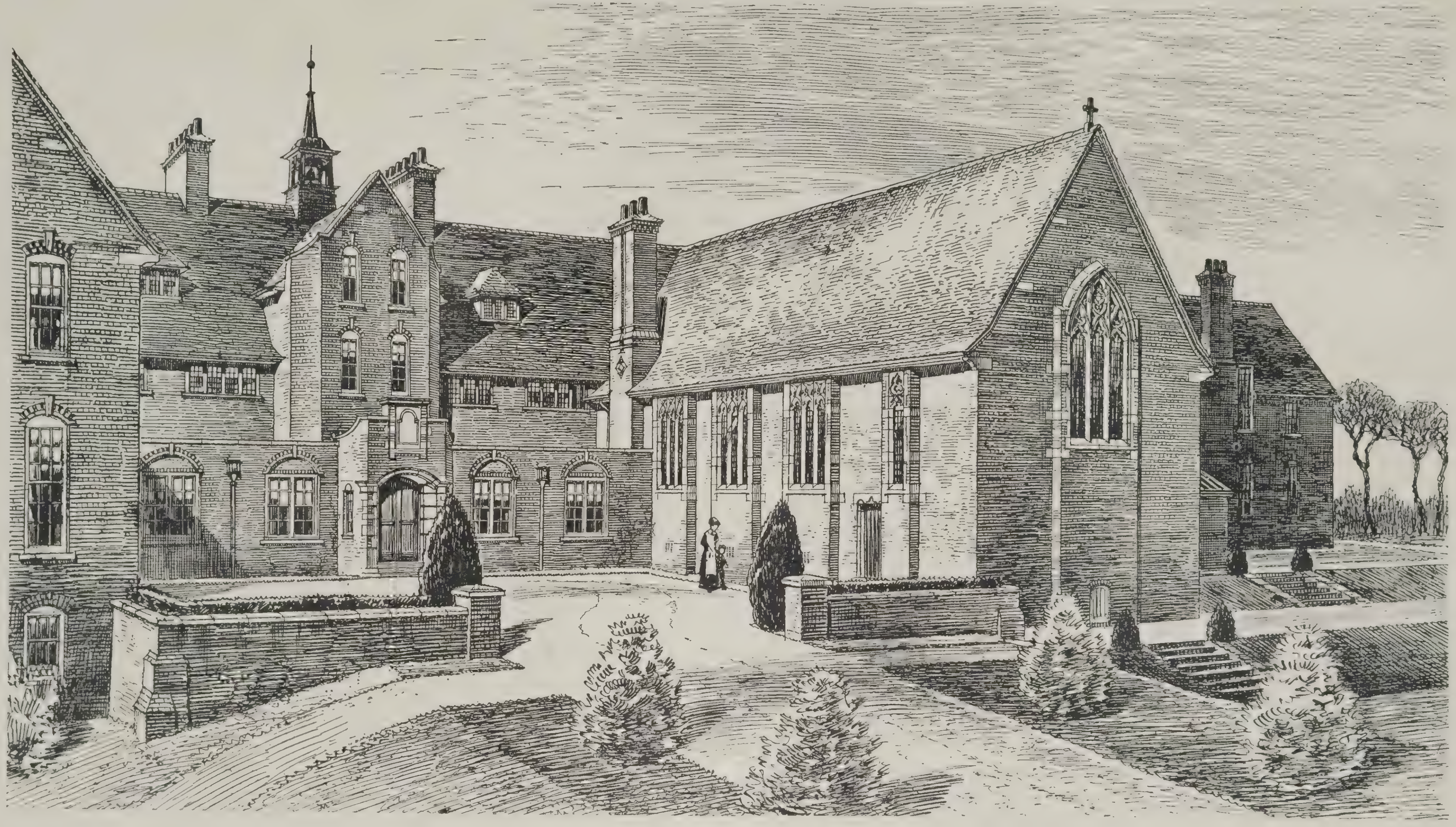
Another feature of the September issue is a series of measured drawings and photographs of the staircase at Cromwell House, Highgate, London. This has a most interesting carved and pierced balustrading, and is rendered especially quaint by little figures of "Roundhead" soldiers of the Commonwealth that stand on the newel-posts.

Of much interest, too, is a very fully illustrated article on Early Renaissance panelling, by Mr. Gotch.

Under "Current Architecture" are included photographs of the Church of SS. Anselm and Cecilia, Kingsway, London (by Mr. Fredk. A. Walters), and the Mission Church of St. Barnabas, Shacklewell, London, N.E. (by Professor Reilly); two striking details of modern work in Paris; and several views of the Liberal Club, Glasgow (by Mr. Alexander N. Paterson); while in the "Town Planning and Housing Supplement" are articles on a suburban development scheme for a portion of Manchester; the position of sculpture in relation to civic lay-out; and the cost and method of town-planning in America.

The London Parks.

While new open spaces continue to be added on the outer fringe of London, almost as much good work is being done for the health and recreation of its people by improvements in the older parks. In all schemes for improving the appearance of the parks it is essential to keep an eye on the characteristics of the site, and to build upon the fundamental aspects of Nature. As a consequence of the original diversity of the hillsides and river-flats on which London has grown up, there is a considerable difference in this respect. Battersea Park, which is in many ways a model of careful enterprise, had fewer original attractions on its tract of marsh than the gently sloping meadow-land of Hyde Park, or the well-timbered and broken ground of Kensington Gardens. It was therefore a fitter subject for landscape gardening of an elaborate and a slightly artificial type; and newer parks in the flat eastern suburbs provide ground of much the same character. The strikingly original beauty of Hampstead Heath makes its requirements very different; and here more than half the secret of successful management lies in preservation rather than construction. It is so, in the main, with the pleasant meadow-land of Hyde Park and Kensington Gardens, and to a less extent with Regent's Park. The most individual attraction of Hyde Park is the sense of space and freedom, often heightened by the grey London atmosphere, but also conspicuous, on fresh clear days, between the



This view shows the central entrance and chapel of the Home built for the Church of England Waifs and Strays Society to accommodate 100 cripples. The whole is built in red brick, and the chapel has Doulting stone dressings to the windows, etc. The general contractors were Messrs. Musselwhite & Sapp, of Basingstoke.

ST. NICHOLAS HOME FOR CRIPPLED CHILDREN, PYRFORD, NEAR WOKING: ENTRANCE FRONT AND CHAPEL. E. J. MAY, F.R.I.B.A., ARCHITECT.

Royal Academy Exhibition, 1910.

Achilles statue and the line of houses in the Bayswater Road; and any new work which encroached upon this vista would be diastrous. There is room in the older parks for many minor improvements of the kind which have been lately added; but with regard to the larger features of the landscape, the only satisfactory policy is to maintain, without further attempts at improvement, the legacy of earlier Nature.—"*Times.*"

Local Museums.

Aberdeen is proposing for itself a new municipal museum. In commenting favourably upon the project, a writer in a local newspaper lays stress on the number of ancient relics in the city that await suitable housing. This, we are rather disposed to think, is to take a stereotyped and antiquated view of the function of museums, which might conceivably serve a much more vital purpose than the cold storage of the *disjecta membra* of distant days. They should assume more of the character of those little art temples of which Mr. Colton is enamoured. A periodical change of modern objects worth studying should ensure incomparably more interest and profit than the customary jumble of stuffed birds, flint implements, and portraits of mayors and provosts.

Glasgow Cathedral Choir Roof.

The old oak roof of Glasgow Cathedral choir has now been revealed in the reparation works which are being carried out under the supervision of Mr. P. Macgregor Chalmers. The old oak roof, which has been a very fine one, consisting of massive timbers, well jointed and pinned together with oak dowels, has been very badly treated. When the plaster ceiling was introduced, the moulded couples which were over each wall shaft and midway between have been roughly hewn back so as to line with the others, and in some cases the couples have been actually severed and made up at the sides with rough pieces of pine. At various times patching has been done which can hardly have added much to the strength of the roof, although adding considerably to its weight. As originally constructed, with its tie beams at the level of the wallhead over every wall shaft and intermediate, this roof must have been a very strong one; but considering the treatment it has received since then it is really little short of marvellous that it is standing to-day. But the removal of the plaster vault has made the design of the original ceiling apparent, and now it is only a question of time till there is a roof on the choir, new in so far as it is necessary to renew it, but incorporating all the ancient sound oak in its construction, exerting no outward pressure on the walls, and built to the same design as the thirteenth century roof. There are evidences of intermediate moulded ribs, and also that the roof has been adorned with bosses carved and most probably richly coloured and gilded. It is to be hoped that the funds at the disposal of the authorities will enable these to be introduced again, so that the effect of the roof may be the same as when this magnificent choir left the hand of its designer under Bishop William de Bondington. Additional interest is given to this fine roof by the door from the tower at the level of the wallhead, which, it has been pointed out by the architect, led to a small platform just over the Rood from which the figures of our Lord with Mary and John at either side were suspended, and from which these figures were tended.

The British Association at Sheffield.

The British Association began at Sheffield the business of its annual meeting on Wednesday last, when Professor T. G. Bonney, Past-President of the Geological Society, and Emeritus Professor of Geology in University College, London, delivered his presidential address. He dealt chiefly with some aspects of the glacial history of early Europe. Earl Fitzwilliam, as Lord Mayor of Sheffield, proposed the vote of thanks for Professor Bonney's address, and stated that Sheffield, in the interval between the present year and 1879, when the British Association last held its meeting there, has increased in population from a quarter of a million to nearly half a million. Its area is between 23,000 and 24,000 acres. Its rateable value is nearly two millions, the municipal estates are worth over twelve millions, and the debt approaches nine millions. The waterworks are valued at three and a half millions. More than a million sterling has been spent on the tramways, £900,000 on electric lighting, and more than half a million for the markets, while, apart from the University, the educational buildings have cost more than a million.

St. Mary Magdalene's College, Cambridge.

(*See illustration, page* 234.)

The new range of keeping rooms, etc., built on the southern side of the college property and facing the river Cam has a frontage of 70ft. by a depth of 30ft., and is three floors in height. It comprises on the ground floor three sets of keeping rooms, each 18ft. by 14ft., and attached bedrooms 14ft. by 8ft., with the necessary Gyp rooms and accessories. In addition there is provided on this floor a lecture room 34ft. by 23ft. On the first floor there are three similar sets of rooms, and over the lecture room, a Dons' keeping room (23ft. by 18ft.), study (15ft. by 13ft.), and bedroom, 15ft. by 12ft.), with Gyp rooms, etc., as before. On the second floor there are three sets of rooms, with Gyp rooms, as before, and a fourth larger set with a keeping room (23ft. by 17ft.) and a bedroom (17ft. by 17ft.).

At the western end of this range of buildings, at right angles thereto, and joining the south-east angle of the hall block, new kitchens, scullery, stores, etc, have been added, and the present kitchen offices rearranged, while in the Magdalene Street block certain internal variations have improved the comfort and convenience of the occupants.

The new buildings stand upon a raft of Portland cement concrete covering their whole area, and 4ft. in thickness. They are constructed of local bricks with a facing of 2in. small-sized bricks of purplish brown hue to resemble that of the adjoining buildings.

Weldon stone is used for the dressings generally, and Ancaster stone for the copings, etc. The roofs are covered with a natural coloured tile, very much the colour of the old tiling near. Wainscot oak is used in staircases and other internal joinery. Carving is sparingly used; but on the north front the arms of the college, of the master, and of Lord Braybrooke, with the Royal Cypher, and that of the donor, the Rev. Mynors Bright, appear in the main cornice, and the fact that the buildings are in the main due to the munificence of the latter is recorded on a tablet in the centre oriel.

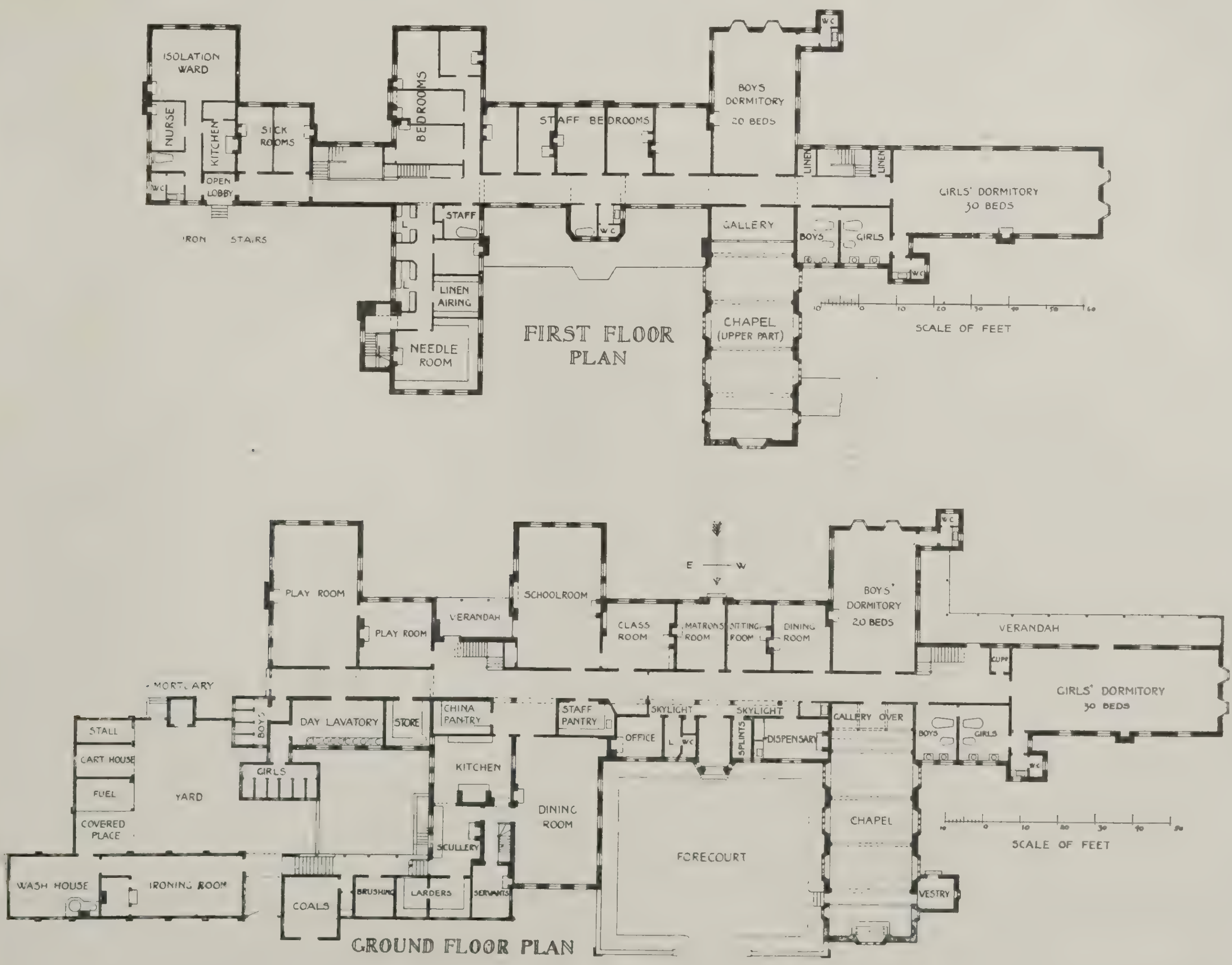
The style of the building might perhaps be called "Collegiate," inasmuch as it accords with the general style of the University buildings, a phase of late Tudor just touched with the Renaissance feeling. The buildings are purposely kept quiet and unpretending, and, although without any attempt at architectural display, it is thought suitable, as they are certainly sound and stable. Sir Aston Webb, R.A., F.R.I.B.A., and Mr. E. Ingress Bell, F.R.I.B.A., are the architects. The builder was Mr. W. Saint, of St. Barnabas Road, Cambridge.

The Preservation of Tintern Abbey.

In the report of the Commissioners of Woods, Forests, and Land Revenues, there is a reference to the work undertaken for the preservation of the structure of Tintern Abbey. During the past year a scaffold has been erected to the whole of the north front of the transept, including the gable, and the return of the angles on either side, east and west, the latter of which contains a circular stair. A close examination of the work fully confirmed the report of 1909. The condition of the stonework of both the window and the gable and staircase was such as to require immediate attention, and especially was this the case as regards the tracery of the window, parts of which would soon have fallen if preventive means had not been adopted. The stonework of the gable has been pointed and made secure, and what remained of the old coping has been reset. Those parts of the walls which were exposed, the coping having gone, have been so covered as to exclude wet. The dangerous openings and weak places in the side walls of the staircase were broken away, the stair being thus exposed to the transept, and also the missing and broken masonry at the top has been built up and made secure, and the north-east angle has also been repaired. Certain parts of the window divisions and tracery were found to be so much out of place and insecure that it was necessary to insert partial centres and strutting, and all has now been made safe with as little disturbance as possible. The stonework at the sides of the window and beneath, both inside and out, has been strengthened where necessary, and pointed.

Hampstead Garden Suburb.

Mr. H. Hamilton Fyfe devotes three articles in "The Daily Mail" last week to the praise of the Hampstead suburb. "Have you not sometimes dreamed," he asks, "as you noticed how pretty modern houses could be made, of a town or village all in harmony with the ideas of those architects who are recapturing to-day the spirit of the older English home-builders? If you have ever felt that spirit stir within you, as you drank in the quiet beauty of Tudor, the fanciful grace of Jacobean, the melodious rhythm of Georgian domestic architecture, you must have dreamed that dream. Well, here it is come true!" Tracing the scheme from its inception, he finds fault only with its name. "The only thing against it is its name. 'Suburb' is a horrid word, ill-sounding, ugly to look at; not only bad English because of its blatant Latinity, but even bad Latin as well. The street-names, you find, have all a true English ring about them. 'Hampstead Way,' 'Meadway,' 'Linnell Close,' 'Temple Fortune Lane." How clean and sweet they are after the grotesque names that Builder Jerry often chooses! But 'Garden Suburb' is bad. There is even a suggestion of priggishness in it. This matter of the name needs thought." Mr. Fyfe draws attention to the excellent manner in which the scheme was developed. The Trust "found the right people. Two companies entered with enthusiasm into the idea. A number of the best architects jumped at the chance of doing work into which they could put their whole hearts. It was agreed to add eighty acres to the heath, and to lay out the rest as a building estate in such a manner that the whole appearance of the place should be grateful to the eye, as different as possible from that of the ordinary suburb. What does a 'building estate' suggest? A plot of land upon which brick-boxes have been run up as close together as the law will permit. Depressing straight lines of ugly 'villa residences,' all alike in meanness of design and flimsiness of construction. Soulless mechanical uniformity. There is one suburb of London which shook itself free of this inane monotony. I mean Bedford Park, one of the fruits of the much-abused Æsthetic Craze, the creation mainly of the genius of Mr. Norman Shaw. But we have gone ahead rapidly since Bedford Park was built. It was time for another effort of the same nature to be made; time to show how the seeds sown in the seventies had germinated, and what blossom they had brought forth." The articles give many points of interest, not the least noteworthy being the statement that "as many as two thousand surprised and indignant British workmen were 'fired' either for slackness or incompetence before the necessary staff of 300-400 was formed" for the building operations.



ST. NICHOLAS HOME FOR CRIPPLED CHILDREN, PYRFORD, NEAR WOKING: PLANS. E. J. MAY, F.R.I.B.A., ARCHITECT.

The Treatment of London's Tower.

We are glad to note that in his new book, "The Tower of London," Mr. Richard Davey indicts the present treatment of the Tower, a matter to which we have frequently drawn attention in the past. The Tower is one of London's great architectural assets, and one of the most ancient. It is not only a great national possession with which the history of the English people is inseparably bound up; but it is probably the most complete of the ancient fortresses of Britain now extant. These facts would, we should have thought, entitle it to the veneration and most careful treatment of those responsible for its custody. The military authorities, however, regard it apparently as a storehouse and drill-ground to which they admit the public grudgingly, and under very irksome restrictions. Moreover, the policy adopted would seem, apparently, to point to the exclusion of the public altogether at a no very distant date. Each year there seems to be less of the Tower open to inspection; and more doors bearing the words, "Private—no admittance." Visitors are hustled from point to point; policemen and beefeaters are stationed in all directions to hustle them on or drive them off; and at the present day one can comfortably see all that one is allowed to see in the course of half-an-hour. The Tower now possesses no military value whatever, and the time has surely come when the military should evacuate it, and the buildings be scheduled as a national monument, to which the public has full and free access. Then the red brick barrack rooms and other anachronisms dumped down on Tower Green could be cleared away, and a clean sweep made of the wigwams and alterations in the various towers which a barrack occupation has made necessary. As Mr. Davey points out, visitors are now excluded from many of the most interesting parts of the Tower, "as, for instance, the vaults and cells under the White Tower, the famous, or infamous, 'Little Ease,' the torture chamber, the quaint house on Tower Green, in which Lady Jane Grey undoubtedly passed the last days of her life, and the Lieutenant's House, the threshold of which has been crossed by probably every illustrious prisoner that was ever incarcerated in the Tower. Also, hidden from profane eyes is that historic chamber where Guy Fawkes and his accomplices were examined. Moreover, it should be remembered that the towers on the walls, although nearly every one of them is connected with some historical personage—and not a few contain remains that are interesting—cannot be visited, with the exception of the Beauchamp Tower and the Wakefield Tower. The latter contains the Regalia, inappropriately exhibited in the chamber in which, it is said, Henry VI. was assassinated. The Bloody Tower, in which the young princes died, the Middle Tower, with its ancient machinery for lifting the portcullis, and many another place of interest, remain hermetically closed, even to the chosen few who have obtained official passes."

The Oratory of St. Piran.

The site of the ancient oratory of St. Piran, in the midst of the wide expanse of sand hills of Perranzabuloe, on the north coast of Cornwall, is being dug out of the sand, under which it has lain for centuries, and is to be enclosed in a concrete outer building, with a dome lighted by "tourist proof" glass. The foundation-stone of the outer building was laid by Mrs. Raffles Flint, and Mr. Thurston Peter sketched the history of the oratory. The church, he said, shared with Gwithian Oratory the distinction of being the earliest Christian edifices in England. St. Piran was in the sixth century of our era a missionary to Cornwall, and the building, if not of the time of St. Piran himself, yet at any rate perpetuated in pre-Norman masonry his original design. Augustine landed in 597 to convert England, and found Cornwall already a Christian land, and an independent kingdom. The first notice of the buried church he could trace was in the sixteenth century, and early in the nineteenth century an old man found the walls showing above the sand. More than one attempt had been made to excavate the church, but not until 1835 was the whole again in view. Several skeletons had been found deposited below the floors, one of gigantic dimensions, measuring about 7ft. 6in. Tradition said that St. Piran and his mother were buried at that place.

Causes of Unexplained Fires.

A correspondent of the "Times" points out what he considers is a potent cause, which might be removed, of many of the unexplained fires which occur from time to time. "In nearly every box of wooden 'lucifer matches' there are a few which have been 'cut the wrong way of the grain.' Unless these, when struck, are held much closer to the point than is usual, the ignitable tip breaks off and falls, it may be before or after it has ignited. In the former case it falls to the ground to be fired by the friction of a passing foot or broom; in the second case it may fall upon any inflammable substance that is near and set fire to it. This is especially liable to happen to children's or women's dresses. I do not doubt that if this matter is brought before the manufacturers of matches they will at once adopt measures for the prevention of so terrible a danger." We might add that the dangers of the top not ignited would be largely obviated by using those matches which will only light when struck on the box.

Garden Cities and Garden Suburbs.

Mrs. S. A. Barnett's speech to the members of the German Town Planning Association on the occasion of their visit to the Hampstead Suburb has drawn a reply from Mr. Ebenezer Howard in the "Morning Post." Mrs. Barnett appears to have extolled Hampstead as a suburb—the *natural* growth of an existing city—while Letchworth, though it was a noble attempt to create a city, was yet an *artificial* city. Mr. Howard rightly takes exception to this attempt to discriminate between two *artificial* things—as all creations of man must be—and he carries the matter further. Letchworth, he says, "is an attempt which is being very deliberately and successfully made to draw some thousands of people away from our overgrown cities, and thus to do just a little to check that overgrowth of London which nearly all statesmen have deplored, and it is an attempt, in doing this, to solve in some degree many other problems. Doubtless, so long as our city does stretch forth into new suburbs, thus inevitably somewhat stifling and spoiling the suburbs which lie within, it is much to be thankful for that forethought and care should attend such new growths. But it would be infinitely better—now that London has come to be so very large—if, in a quite con-

THE ST. NICHOLAS HOME FOR CRIPPLED CHILDREN, PYRFORD, NEAR WOKING: GARDEN FRONT. E. J. MAY, F.R.I.B.A., ARCHITECT.

scious way, the essence of town planning, as applied to London, should be recognised to involve, if it be possible, some arrest of its growth."

The New Hall of the Cordwainers' Company.

The new hall of the Worshipful Company of Cordwainers, in Cannon Street, takes the place of the somewhat dingy yet not altogether undignified old hall which had occupied the site for 130 years. The new hall, which has been designed by Mr. H. Chatfeild Clarke, is of English Renaissance style, and has a frontage of more than 60ft. on the northern side of Cannon Street. The court room and the reception room are on the first floor, and are separated by sliding doors, so that the two rooms may on occasion become one. The banqueting hall, which is on the second floor, is being panelled with British oak. Part of the ground floor and the basement will be let as offices. This is the sixth hall that has been built for the Company. One of them was destroyed in the Great Fire of 1666.

The Coldharbour Case.

The vandalism at Coldharbour, which manifested itself in the destruction of two fine sound trees in the village school grounds, consequently marring the landscape, appears to have been due to want of thought rather than want of heart. Since Professor Baldwin Brown drew attention to the matter in the "Times," correspondence has passed between him and the chairman of the Surrey Education Committee, who has, with other members, visited the spot. The question is to come up formally before the next committee meeting. And it is stated that possibilities of this kind will not be overlooked when future school alterations are under consideration. Builders are generally indicted (and in the case of speculative builders, with some ground) for their indifference to timber and the amenity it affords; but in this instance the new outbuildings are said to have been planned to come on the sites of the trees, and the responsibility would appear therefore not to rest with them.

"The Decline and Fall of Art."

"It is a pathetic spectacle that from year to year at this season the columns of the various leading daily papers should be devoted to the discussion of trivialities, when they might profitably be occupied by matters of importance to the whole world," and therefore the writer of a letter in the "Morning Post," from which this quotation is made, introduces the subject of "The Decline and Fall of Art." He aims at showing, by means of two comparative lists, how much richer we were during the Victorian era than we are to-day in the domains of music, painting, sculpture, the stage, literature, and vocalists. It saddens him to find, from a comparison of these two lists, that the artists of to-day are so few in comparison with the number included in the list that covers fifty years, and this he calls "The Decline and Fall of Art!" whereas it seems to be a case of proportional misrepresentation. After this, it is not at all surprising to note that the "five branches" into which he divides Art, as enumerated above, do not include the Mistress Art; for which omission, on the whole, we are in the circumstances rather disposed to be thankful. For the various classes are the homes of strange meetings, wherein is such mixed company as Offenbach and Wagner, Doré and Phil May, Boehm and Stevens, Wilson Barrett and Macready, Barham and Browning, Ainsworth and Meredith. From such a motley gathering, and from the discussion which this letter is presumably intended to provoke, the Mistress Art seems for the moment to have made a lucky escape, and it is to be hoped that no well-intentioned but misguided devotee will attempt to hale her into the horrent arena.

District Surveyors and Their Fees.

At Lambeth police-court, last week, before Mr. Hopkins, three firms of builders who had been employed by the London County Council to carry out works at certain of the Council's schools were summoned by Mr. Ellis Marsland, the District Surveyor for Camberwell, who sought to recover from them fees which he claimed to be due to him in respect of those works. Mr. Godfrey, who represented the London County Council, said that for the purposes of these summonses the Council were the defendants. When the Council became the Education Authority for London, they, rightly or wrongly, considered themselves exempt from the provisions of the London Building Act. Mr. Hopkins interjected: "From some of them." Mr. Godfrey replied: "In any event, from Parts 6 and 7." After great difficulty, it was arranged between the District Surveyors' Association and the Council that a friendly case should be taken to the High Court to ascertain whether the Council were exempt from the whole or part of the Building Act. That was the case of "Willis v. the London County Council." The Divisional Court held that the Council were bound to give notice to the District Surveyor, but, unfortunately, the decision did not go beyond that point. Then in the case of "Galbraith v. Dixon," the question whether, if notice were given, a fee was chargeable was raised; but the Divisional Court declined to listen to the question of exemption, and decided only upon the question of fees. The Council entered into correspondence with the District Surveyors' Association with a view to an amiable arrangement, and negotiations were pending. The Council felt that if they were exempt from Parts 6 and 7 of the Act there should be a reduction in the District Surveyors' fees. He asked that these summonses should be adjourned. Mr. Williams, who supported the summonses, opposed the application, and pointed out that the dispute had continued for five years. The exemption of school buildings from Parts 6 and 7 of the Act could not be adjusted between the Council and the District Surveyors' Association, but must be decided by the Court. Mr. Hopkins remarked that twice in six years the point of law which was raised had been sent to the High Court, and each time it had come down without decision. He adjourned the hearing of the summonses until October 26.

Corporation Powers as to Buildings.

Richmond Corporation has just brought to light what appears to be an anomaly of the law. It appears that the Local Government Board has informed the corporation that while it has power to build a public hall, it cannot, without obtaining a special Act of Parliament, acquire any existing building for conversion to that purpose. As apparently Richmond Corporation did not know this, or they would not have raised the question, it may not be superfluous to pass on the information for what it is worth. The disability is not altogether regrettable. The purchase of land by corporations is sometimes attended by abuses, and the power to purchase buildings would enlarge the scope for insidiousness or misadventure. Besides, it would encourage the adoption of makeshifts; and a "converted" building can never be so satisfactory as one that is specially designed.

Sheffield By-laws as to Timber Scantlings.

The report from the Sheffield Master Builders' Association, which will be found on p. 257 of the present issue, deals with a subject that is of considerable importance to architects as well as to corporations and builders. It concerns the new by-laws as to timber sizes which are now under consideration by the Corporation of Sheffield. Briefly, the City Council are disposed to increase the sizes of roof timbers to a degree that the master builders believe to be unnecessary, and accordingly their association has made representations to this effect, and the council have given ear to them, and seem, for the moment, to be in a strait betwixt the assertions of theory and the ascertainments of practice. They have accordingly suggested a further parley, at which the points at issue may be threshed out by two representatives from the Sheffield Society of Architects and Surveyors, two from the Master Builders' Association, besides the City Architect, the City Surveyor, the Chief Building Inspector, and a representative from the Town Clerk's Department. The issue of this conference should be interesting, and perhaps valuable.

SOME FINE WROUGHT-IRON GATES AND RAILINGS.

By HERBERT SKYRME.

The accompanying photographs show a fine old example of the craftsman's work in wrought-iron. I have never seen in any architectural, or other publication, either a description, drawing, or photograph of these beautiful gates, and think this may possibly be explained as follows:—

The gates are situated in a quiet country road facing a large mansion called Leeswood Hall, near Mold, North Wales, and unless one's attention had been previously drawn to their situation, few people, unless their business took them to one of the small villages which this road serves, would see them. Although, as previously mentioned, they face, and are within a quarter of a mile of the Mansion, there is no road between them and the Mansion, and they have always been closed. The actual entrance to the house is by means of a carriage drive on the main road leading from Chester to Mold.

Rumour asserts that the cost of these gates, which amounted to some thousands of pounds, was not forthcoming when they were erected, with the result that they were "thrown into Chancery" and still remain there. Whether that be the case or not, the absence of the carriage drive gives colour to the tale, and to the present day they remain an ornament of the Hall, and unused.

The gates are fixed between two fine carved stone piers, 5ft. square, about 25ft. high, each pier being surmounted by a sphinx. These figures were supposed to be of stone, but an examination during renovation revealed them to be cast lead. The ironwork is wrought into a design with central gates, with side wings, each panel divided by square wrought-iron piers. The length is about 103ft., and about 30ft. high at the loftiest pinnacle. The late occupier of the Mansion had the gates cleaned and painted a few years ago, and some idea of the size of them may be gathered when it is stated that the cost for painting only came to nearly £100.

NEWS IN BRIEF.

At the International Co-operative Congress, which opened at Hamburg on September 5, Mr. Henry Vivian, M.P., and Dr. J. Albrecht, will open a debate on the housing problem, with papers which will indicate what co-operative housing societies can contribute to the solution.

* * *

Mr. O'Brien Smyth, late chief inspector in the architectural department of the Local Government Board for Ireland, has retired, after twenty-seven years' service, and has been succeeded by Mr. Lewis E. H. Deane, son of Sir Thomas Deane, R.H.A.

* * *

Norfolk Park, an estate of about 60 acres, the use of which the Duke of Norfolk has permitted to the citizens of Sheffield for some years, was presented recently to the City. This gift increases to about 160 acres the extent of land which the Duke has given to Sheffield for parks. Mr. H. Coverdale presented the deed of gift on behalf of the Duke, who was unable to be present; and the Lord Mayor, Lord Fitzwilliam, in accepting the document on behalf of the inhabitants of the city, expressed hearty thanks to the donor for his munificence. Mr. Coverdale stated that the Duke thought that, in the event of the estate ever coming into the hands of trustees, they might be advised to cut up the beautiful park for building purposes, and it was in order to avert that risk, and to secure the park to the public for ever, that he decided to offer it to the Corporation.

* * *

Building operations have already commenced upon the new offices of the Board of Agriculture and Fisheries in Whitehall Place, and in the course of twelve months from the present time Earl Carrington, or whoever may then be President, will probably be able to enter into possession of his new home. The offices are situated close to the existing premises, and immediately facing the War Office.

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The reading-rooms at the British Museum are closed for the half-yearly cleaning, and will remain closed until September 5 inclusive. The manuscript-room is also closed, but, as additional work is to be done this year, it will remain closed until September 8 inclusive.

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Messrs. Patman and Fotheringham, Ltd., of 100, and 102, Theobald's Road, London, W.C., are the contractors for the new office building for Messrs. Willing and Co. Ltd., at 362, 364, Grays Inn Road, London, W.C. for which Messrs. Hart and Waterhouse are the architects. It was during the excavation work here that the old St. Chad's well at King's Cross was rediscovered, as reported in our issue for August 24.

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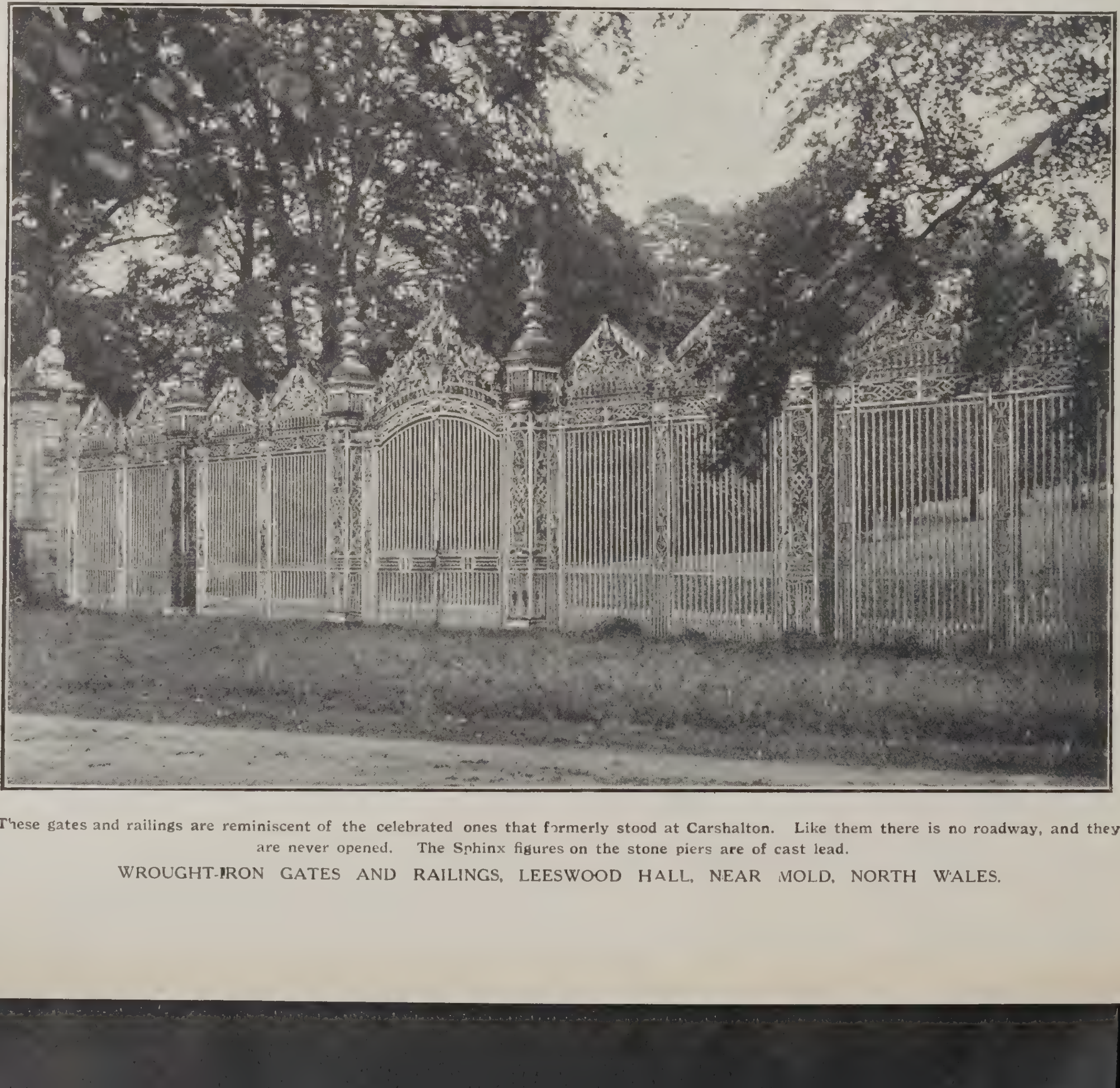
The firm of Wailes, Dove and Co., Ltd., who exhibit in the Transportation Section of Building No. 48, at the Japan-British Exhibition, their Patent "Bitumastic" Enamels as used for the ships of the



These gates and railings are reminiscent of the celebrated ones that formerly stood at Carshalton. Like them there is no roadway, and they are never opened. The Sphinx figures on the stone piers are of cast lead.

WROUGHT-IRON GATES AND RAILINGS, LEESWOOD HALL, NEAR MOLD, NORTH WALES.

British and Foreign Admiralties, and of the Mercantile Marine throughout the world, also to the plant of the chief Industrial Concerns, Railways, and Municipal Corporations in the United Kingdom and abroad, have been awarded a diploma of the highest merit with gold medal. The same firm also received gold medals at Genoa, 1905, Milan, 1906, Savona, 1906, Bordeaux, 1907, Franco-British Exhibition, London, 1908, for superiority of the anti-corrosive qualities of their Patent "Bitumastic" Enamels, Coverings, and Solution.

* * *

A special committee of the Manchester City Council, appointed to consider the best means of utilising the site of the old Manchester Infirmary in the centre of the city, recently decided to recommend the erection on the site of an art gallery and free library, at a cost of £250,000. The existing art gallery and reference library, in the centre of the city, are in old buildings, and there has long been an agitation for their supersession. The recommendation will be considered at an early date by the City Council. Three hundred thousand pounds was paid for the infirmary site.

* * *

The eighty-eighth report of the Commissioners of Woods, Forests, and Land Revenues has been issued and states that, exclusive of land let for building purposes, foreshores, and mineral rights, the Crown property under the Commissioners' charge extends to about 322,767 acres, of which 67,020 acres are under timber. Parts of these woodlands are subject to common rights, and there are in addition 128,323 acres of unenclosed wastes subject to common rights. The total gross collection on account of income during the year amounted to £644,704 9s., and the expenditure was £156,234 13s. 3d., inclusive of repayments to capital in respect of advances for permanent improvements, and for the purchases of leaseholds. The corresponding figures for the preceding year were £646,268 2s. 7d., and £152,978 18s. 2d. respectively.

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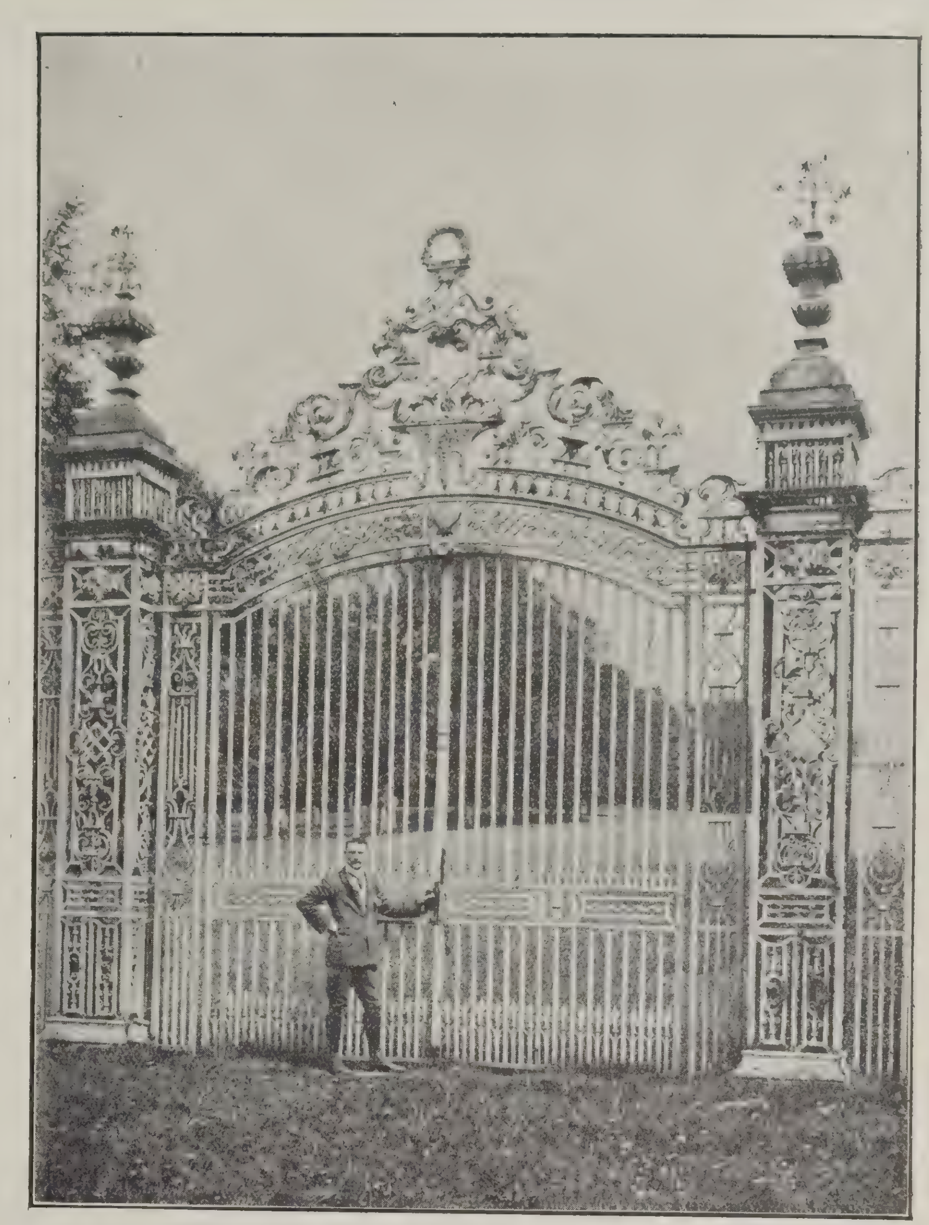
A correspondent of "The Evening News" makes the rather useful suggestion that if the route of the Coronation Procession for next year were to be settled at once, some alleviation of the usual winter distress in the London building trade might result. Redecoration and the building of stands might then be put in hand during the winter, at an early date, and carried out at reasonable prices; which will not be the case in the last few weeks preceding the great event.

* * *

The Sheffield Society of Artists hold their annual exhibition at the Montgomery Hall, Sheffield, from November 10 to December 12, 1910. Works will be received at the hall on Friday, November 4, from 10 a.m. to 6 p.m., and on Saturday, November 5, from 10 a.m. to 1 p.m. Communications from those desiring to send exhibits should be addressed to Mr. Alwyn H. Holland, Hon. Sec., Orchard Chambers, Church Street, Sheffield.

* * *

While varnishing the inside of some of the great water pipes constituting the Manchester Corporation's "third line" from Lake Thirlmere last week, three workmen were overcome by poisonous fumes, and one of them, James Thistlethwaite, twenty, of Caton, died. The others, named Bridges and Dennison, had narrow escapes, being brought round by artificial respiration. The mishap occurred in the Quernmore Valley, near Lancaster, and the men were found over a hundred yards from the mouth of the pipe tunnel.



WROUGHT-IRON GATES, LEESWOOD HALL, NEAR MOLD, NORTH WALES.

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During an auction sale of grocery stock last week, at a room in King Street, Lancaster, the floor collapsed through dry rot in a beam, and fifty people were precipitated into the cellar ten feet below. Most of those who had fallen sustained injuries more or less severe.

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Mr. Louis Stean, Hon. Sec. of the Tobacco Trade Travellers' Association, has written to Mr. Churchill with reference to the recent fire at the Kelvin Hotel, Belfast, when several lives were lost, suggesting that a short bill should be passed imposing upon hotel-keepers the necessity of providing approved means of escape, such as provision of a strong rope, firmly attached at the inside of each bedroom window; fire-bells to ring in and from each bedroom; outside iron staircases, with free access from every floor; adequate notices, prominently displayed in all corridors, indicating the direction of such access.

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Five men were placed in a position of great peril in a sewage tunnel near Govan Cross, Glasgow, last week, through the bursting of a main pipe. The workmen were engaged behind an air-tight door when the accident occurred, and water rushing in quickly flooded the place. The fire brigade were summoned, and after four hours' pumping operations the water was sufficiently lowered to allow of the door being burst open, and the men were rescued from their perilous position.

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A conference of representatives of the two Joiners and Carpenters' Societies—the Amalgamated and the Associated—concluded at Glasgow recently, when it was officially announced that the conference had agreed to recommend the amalgamation of both organisations. The question of a union will now be voted upon by the whole membership of the two societies.

* * *

Owing to the breaking of a water main, the whole of the district of Stoke Gardens, a populous part of the parish of Slough north of the Great Western Railway, was left without water, and the Gotha Iron Works, employing a large number of hands, had to close down last week in consequence. Over 500 houses were affected.

* * *

The recent sale of the fine old furniture and works of art of the late Mr. Vincent Robinson at Parnham, Dorset, realised about £14,000. The mansion, which has been sold separately by Messrs. Nicholas Denyer and Co., is one of the most notable Tudor houses in the West Country.

The Corporation of Sunderland are about to appoint a municipal architect, and from 66 applicants have selected Messrs. P. Dalton of Carlisle, Ling of Battersea, Pickup of Blackburn, H. Woodhead of Wakefield, Slater of Leek, and Matkin of Sunderland, for a final interview and selection.

* * *

The exhibition of the work of modern French artists in the Brighton Public Art Galleries will be closed at the end of the present month. It has proved a great success, the rooms having been crowded daily. The Brighton Corporation have purchased for the Permanent Art Gallery Gaston la Touche's "Les Ebats des Cygnes" (*Swans at Play*). The French Government have conferred upon the director of the galleries, Mr. Henry D. Roberts, the decoration of Officier de l'Instruction Publique. For three weeks from September 12 a portion of the works of the late Miss Sarah Dodson will be shown.

* * *

It has been decided to erect a monument to the late Hon. C. S. Rolls in the main street of the town of Monmouth; and the Mayor is making an appeal for subscriptions. Sir Aston Webb, R.A., has been consulted, and £1,000 is named as the necessary sum.

* * *

Mr. Walter Emden, past-president of the Society of Architects, who has been Mayor of Dover for the past three years, will, it is understood, accede to the wish of the council that he should continue in office during the Coronation year. Mr. Emden is an ex-Mayor of Westminster, and is still an alderman of that Corporation.

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The Engineering Standards Committee have issued a revised edition of their standard specification for Portland cement, which will be dealt with in due course in this journal by a specialist contributor.

* * *

The Local Government Board has decided to hold, or has recently held, as indicated by the dates, inquiries into proposed expenditure by public bodies as follows:—Water Supply.—Walton-le-Dale Urban District Council, £6,500 (September 7); Marple Urban District Council, £800 (September 9). Electricity Undertakings.—West Bromwich, £11,386 (September 9); Colwyn and Colwyn Bay Urban District Council, £2,500 (September 8); Cleckheaton Urban District Council, £2,210 (September 6). Sewerage, Sewage Disposal Works, and Plant.—Scunthorpe and Crosby Joint Sewerage Board, £5,300 for Scunthorpe (September 8); Southwell Rural District Council, £850 for Halam (September 9); Bishops Stortford Urban District Council, £1,200 (September 10); Dover Borough Council, £11,000 (September 12). Street Improvements, etc.—Blaydon Urban District Council, £3,300 (September 7); Leigh Borough Council, £2,345 (September 7); Epsom Urban District Council, £915 (September 14); Withernsea Urban District Council, £2,000 for works of sea defence (August 31). Various.—Brighton Borough Council, £3,790 for workmen's dwellings (September 6); Epsom Urban District Council, £2,285 for fire station (September 14); Wallsend Borough Council, £8,000 for public baths, £2,000 for fire station, and £785 for chemical engine, motor fire tender, and escape (September 6); Leigh Borough Council, £2,142 for fire brigade purposes, £4,837 for Town Hall, and £647 for improvement of two bridges (September 7).

At an inquest held at Silverdale, Staffordshire, on a lady aged fifty-one, who resided alone and was found suffocated in bed the house being full of gas, a plumber stated that the gas pipe was broken at the junction of the bracket pipe and the main pipe, and the only explanation of the occurrence was that the breakage was caused by the building subsiding during the night. Other pipes in the neighbourhood had been broken owing to mining. There was no suggestion of suicide. A verdict of accidental death was returned.

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During the leaping and trotting trials at Llangollen Agricultural Show, a wing of the grand stand, containing some hundreds of people, collapsed. Fortunately it was not a great height from the ground, and no one was seriously injured. The collapse was attributed to the occupants swaying forward to catch sight of the competitors in an interesting finish.

FOREIGN NOTES.

The Conseil Municipal of Amiens has just elected as Mayor, M. Antoine, architect.

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A new society, "Les Amis de Bruges," has just been formed with the object of safeguarding the beauties of the chief town of Western Flanders, to preserve its historical character, not only in artistic and commercial aspects, but also in those of an educational and social character. The President, M. Canville Tulpinck, has congratulated the Municipality on its intelligent efforts for many years past in the conservation and reparation of the old public buildings. In future the society will actively support the Municipal Authorities in the work of preserving the old quarters and picturesque streets of the city, which in the exigencies of modern life are liable to be swept away. The society is about to acquire the curious old house at the end of the Place Van Eyck, regarded as one of the last specimens of fifteenth century architecture in wood. A tablet, commemorative of the fact, is to be affixed to the front of the house.

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The Italian Minister of Public Works has approved of the extension of the Varese-Airolo section of the railway from Vintimillo to the Italian frontier, under the understanding with France. The construction of this extension will, it is expected, be completed in 1914.

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The Technical and Art Sub-Committee for the monument to King Victor Emanuel II. has approved the proposition of Sig. Corrado Ricci in connection with the Palazzo Venezia. Sig. Ricci's idea is not to demolish, but to transform into a gallery the side of the court which forms an annex to the Palazzo. The sub-committee has requested Sig. Sacchi to call a meeting of the Royal Committee in order that a definite decision may be given on the matter.

* * *

A new Workmen's Compensation Act for New York State, which became effective on September 1, is probably, a "Times" New York correspondent states, the most advanced on the subject ever enacted in America. It makes the employer responsible for the acts of agents, employees, contractors, and sub-contractors, abolishes the principle of the voluntary assumption of risk by workmen, throws upon the employer the burden of proof of contributory negligence, fixes the scale of compensation for injuries in eight classes of specially dangerous occupations in which the plea of contributory negligence is not allowed. The law greatly increases the liability of the employer, and is also calculated to interfere with the business of unscrupulous attorneys, who prosecute claims for damages on contingent fees. One immediate result of the law is an increase of insurance rates by casualty companies by about 100 per cent.

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Eighty-seven designs have been received for the monument commemorating the formation in 1865 of the International Telegraph Union, which is to be erected in the Place Helvetia at Berne. This monument follows that inaugurated last year to the International Postal Union. £8,000 has been set aside for the project by the Municipality. The International Jury of Assessors, presided over by M. Eugène Jost, architect, of Lausanne, includes M. Jean Injalbert, Professor at l'Ecole des Beaux-Arts, Paris; M. Emile Frey, Director of the International Telegraph Bureau, Berne; Professor Brener, of the Academy of Fine Arts, Berlin; Professor Helmer, sculptor, of the Imperial Academy of the Plastic Arts, Vienna; Sir George Frampton, R.A., sculptor, London; M. J. Honwai, of Budapest; Dr. Cuypers, architect, Amsterdam; Senor J. D. Ramalho Ortigoa, Director of the Ajuda Library, Portugal; M. Louis de Benoit, architect to the Imperial Court, St. Petersburg; and M. J. K. Liudberg, Professor at l'Ecole des Beaux-Arts, Stockholm. It is expected that the Jury will select the authors of half a dozen designs for a limited second-stage competition to decide the winner.

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The old brown stone house at the corner of Fifth Avenue and Thirty-fourth Street, New York Ciy, will shortly be vacated by Messrs. M. Knoedler and Co., art dealers, who are erecting new premises on the site of the old Lotos Club, 556, 558, Fifth Avenue. This will enable Mr. Benjamin Altman, who owns the rest of the block, to pull down this old landmark and extend his building, which is some four stories higher, over the vacant site. Messrs. Knoedler and Co. are following the present movement of the New York art dealers, who are going north up Fifth Avenue.

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The proposal to build a new bridge across the Hudson River to join Manhattan Island to New Jersey is about to take tangible form. Money was appropriated at the last session of the state Legislature for borings and the collection of general engineering data, and the borings are being made. It is not certain what site will be selected, but the probabilities are that it will be above 109th Street. The one which has been most favoured is the rocky point jutting out into the river from Fort Washington Park, at the foot of 179th Street, toward the Palisades on the far side. The river is narrowest there, a fact that was discovered by the American engineers in the Revolution, when they constructed a boom across it at this point, with the idea of preventing the British from passing up to Albany. It is thought that a bridge could be thrown across there for 10,000,000 dollars, a sum at least one-third less than it would cost elsewhere. The type of bridge has not been selected. Whether it will be the suspension or a cantilever, or even some other type, remains to be decided by the commissions after the data have been obtained.

COMPETITIONS.

Northwood and Ruislip Town Plan.

Conditions and maps in this competition are now available, and may be obtained from Garden Estates, Limited, 33, Henrietta Street, W.C. Designs must be sent in by November 15.

LIST OF COMPETITIONS OPEN.

SEPT. 10. SECONDARY SCHOOL, FOLKESTONE.—Competitive designs are invited from architects (being Fellows, Associates, or Licentiates of the Royal Institution of British Architects or members of the Society of Architects). Particulars, together with site plan can be obtained from A. F. Kidson, Town Clerk, Folkestone.

SEPT. 15. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 19. TOWN HALL, MAESTEG.—The Town Hall Committee invite competitive designs, etc., for the proposed alterations and additions (not exceeding in cost £3,000) to the Town Hall and Market Hall, Maesteg. Printed terms and conditions, etc., from the engineer, Samuel J. Harpur, Town Hall, Maesteg.

Oct. 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., or obtained from the "Commission d'études de l'aménagement de l'agglomération anversoise," Due du Jardin des Arbalétriers 57, Antwerp. Deposit 100 francs.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

OCTOBER 31, ETC. ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Assessors: Sir Aston Webb, R.A., and Mr. Raymond Unwin. Premiums of £150, £100, and £50. Terms and conditions obtainable from the Company. Deposit, one guinea.

NO DATE. CHURCH, LLANDUDNO. Competitive designs are invited from architects who have practised for not less than five years in North Wales or in the City of Chester for the erection of a church for the West Shore District of Llandudno. A printed copy of the conditions of competition and necessary details, with a plan of site, will be sent to competitors on receipt of one guinea, which will be refunded on the receipt of bona-fide designs, or if the said plans and information are returned within fourteen days with a declaration that they will not be used for the purpose of the competition. Apply, the Rector, Llandudno.

Nov. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK. Open only to architects practising in Dublin. Premiums £100 (to be merged), £30, and £20. Conditions on application to the Registrar.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

SOCIETIES' REPORTS.

Northumberland and Durham Archaeological Society.

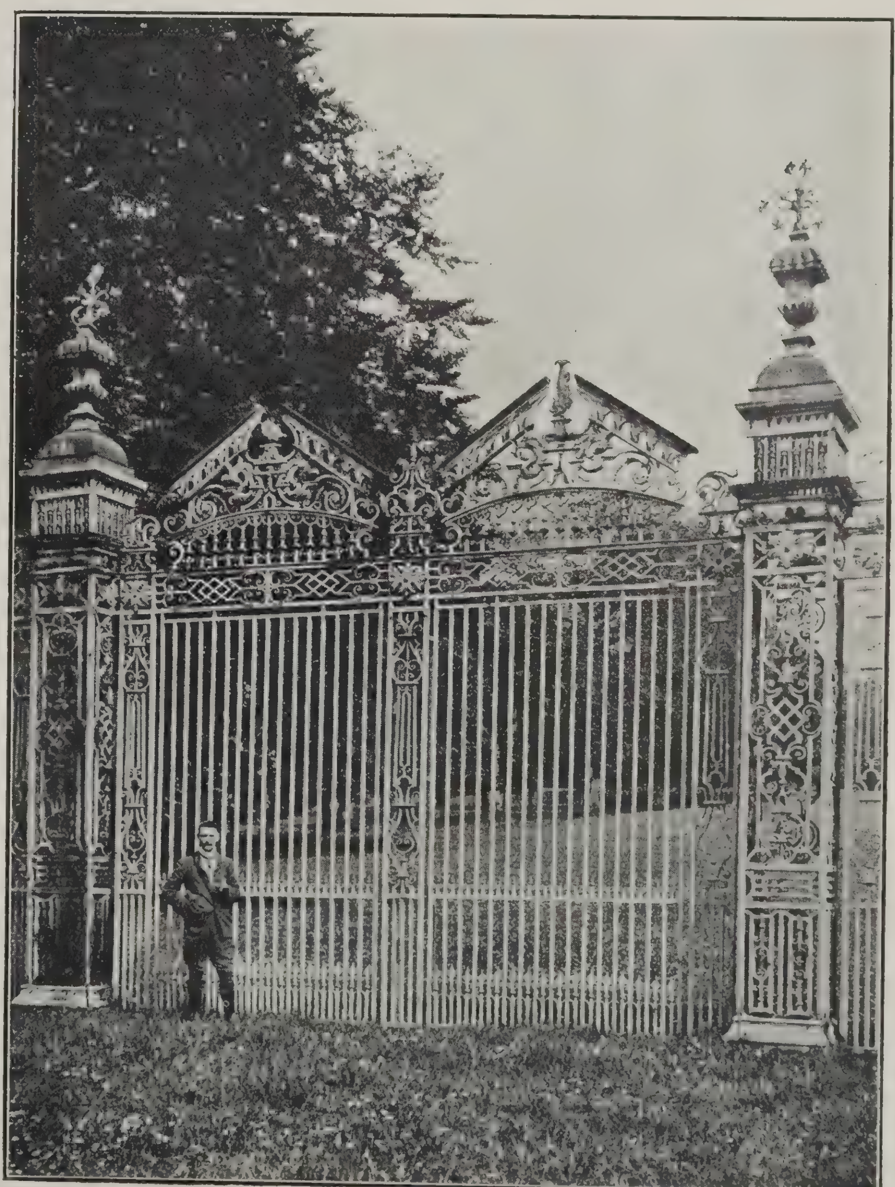
The Northumberland and Durham Archæological and Architectural Society had bad weather for their visit to Chester-le-Street and district. The party, numbering over 50, were conducted over the Church of St. Mary, Chester-le-Street, by Mr. W. H. Knowles, F.S.A., of Newcastle. Considerable interest was taken by the party in the effigies executed by Lord John Lumley. Mr. Knowles pointed out that these effigies were in reality fabrications, with the exception of two. These two, as a matter of fact, were not members of the Lumley family, but of the Fitz Marmadukes, which Lord John Lumley transferred from Durham in the reign of Queen Elizabeth. The party next journeyed to Lumley Castle, the seat of the Earl of Scarborough. Mr. C. H. Blair explained the armorial shields above the front gateway of the Castle, which was built by Sir Ralph Lumley in the reign of Richard II. These bearings include those of Richard II. and the Percy family. The spacious rooms were visited by the archæologists, and admiration was expressed at the ball room and the private apartments. Canon Greenwell gave the history of the Lumley family, and referred to the portraits on the walls. all of which were executed by Lord John Lumley, the maker of the effigies on the church at Chester-le-Street. The Canon pointed out, however, that these portraits were all fictitious. The fine collection of statesmen of Europe, and an original portrait of Shakespeare, obtained by this Lord John, were dispersed by a later holder of the title.

The Society of Architects.

The Society of Architects recently sent a congratulatory address to His Majesty King George V. on His Majesty's accession to the Throne, and the following reply has been received:—

Sir,—I am commanded by the King to convey to you hereby His Majesty's thanks for the loyal and dutiful address of the President, Council, and members of the Society of Architects expressing their congratulation on His Majesty's accession to the Throne. His Majesty has expressed pleasure at the beauty of the Society's address.

I am, sir, your obedient servant,
(Signed) Winston S. Churchill.
Home Office, Whitehall, 4th August, 1910.



A PANEL OF THE WROUGHT-IRON RAILINGS, LEESWOOD HALL, NEAR MOLD, NORTH WALES.

NEW BUILDINGS.

PROPOSED.

Banbury (Oxfordshire).—It is intended to commemorate the work of the late Dr. Parker, of the City Temple, as a preacher and author by erecting a Parker Memorial Institute on the site of the church that was the scene of his first labours.

Bingley.—The following plans have been approved :—Detached villa in Villa Road, and a pair of villas in Langley Avenue and Villa Road Bingley; alteration of and addition to workshop, etc., in Park Road, Bingley.

Birmingham.—A L. G. Board inquiry has been held with respect to an application by the City Council for permission to borrow £1,255 for the purchase of land for the purposes of Cannon Hill Park, and property in Brearley Street and Bacchus Road as sites for cottage baths. It is proposed to purchase a piece of land near Russell Road for the sum of £625. The site in Brearley Street contains 420 square yards, and the purchase money amounts to £255. The baths are estimated to cost £2,550, and accommodation will be provided for nine men and a similar number of women. The area of the site in Bacchus Road is 600 square yards, and the price asked is £375.

Blackburn.—Three sets of plans for a new council school in Ross Street have been prepared by the Borough Engineer, Mr. R. W. Smith-Saville.

Grimsby.—A L. G. Board inquiry has been held concerning the application of the Corporation to borrow £840 and to appropriate certain land in Victoria Street, for the purpose of extending the public library. Mr. J. G. R. Baxter, assistant borough engineer, has submitted plans and estimates of the scheme.

Kirkcudbright.—It has been decided to demolish the old church in the parish of Colvend, and to erect a larger building on an adjacent site. Built in 1771, Colvend Church presents that barn-like appearance which is common to many eighteenth century places of worship. Convenanting traditions still linger in the neighbourhood, and the congregation are one of the few in the south of Scotland which continue to maintain a precentor.

Manchester.—An inquiry at the Manchester Town Hall has been held on behalf of the L.G. Board, respecting the City Council's application for sanction to borrow £7,600 for works of private street improvement, £1,102 for works of sewerage in School Lane and Catterick Road, Didsbury, and £900 for the reconstruction and extension of the bridge over the Chorlton brook, in Brook Road, Chorlton-cum-Hardy.

Portobello (Scotland).—The Edinburgh Dean of Guild Court has granted warrant to the Church of Scotland Home Mission Committee to erect a church on a site in Rosefield Place, Portobello. The building will consist of nave with side aisles, north and south transepts, choir and choir aisles. At the west end will be a vestibule giving access to the central aisle and the aisle passages. Over the vestibule will be a gallery giving accommodation for 112 people. On the north-west angle will be a tower 23 ft. square, and 82 ft. to the parapet, terminating with a copper-covered spire. The church will contain 840 sittings. At the east end will be a hall, and between it and the church will be placed a session-room and vestries. The style of architecture will be fourteenth century Decorated. Outwardly it will have redstone dressings and natural faced rubble, and the external roofs will be covered with green-coloured slates. The architect is Mr. G. Mackie Watson. Warrant has also been granted to W. Birnie Rhind for the erection of a studio at Pitt Street; and another to David Waldie for a tenement at the corner of Roseburn Place and New Street.

Retford.—A criminal lunatic asylum is to be built near Retford at a cost of about £130,000, the contract for the buildings having been already placed by the Government. It is proposed to construct a light railway from the Great Central line to the asylum works.

Stockport.—The board of Guardians have appointed a committee to prepare a scheme for the separate accommodation of imbeciles. There are now some 160 imbeciles in the workhouse at Shaw Heath, and it is proposed to build a new ward at Stepping Hill for their exclusive accommodation.

Tardebigge (Worcestershire).—A new institute is about to be erected at the expense of the Earl of Plymouth. The building, which will be centrally situated on the main road from Bromsgrove to Redditch, will comprise a large hall capable of seating 250 persons and suitable for public meetings, entertainments, etc., and a billiard room, reading room, and library. There will also be provision made for technical instruction.

Warrington.—The Education Committee has approved the building of a new council school in Evelyn Street, to cost £11,676 and accommodate 1,206 scholars, the cost per head being £9 6s. 9d. This includes playgrounds, caretaker's house, cooking-rooms, and handicraft centre. A site for another council school in Winwick Road has been approved. The School of Art is also to be extended, and competition designs are shortly to be invited.

IN PROGRESS AND COMPLETED.

Ballymacarrett (Ireland).—New schools from the design of Mr. J. J. M'Donnell, J.P., have just been opened.

Chesterfield.—The Corporation Theatre, which has been altered and added to at a cost of £2,000, is now reopened. The improvements include new refreshment rooms, the provision of a well for the orchestra, and some minor alterations. The whole of the work has been carried out under the supervision of the Borough Surveyor, Mr. Vincent Smith. The principal contractors were as follows :—Mason's work, Mr. Geo. F. Kirk; painting, decorating, etc., Messrs. Eyre and Sons, Ltd.; upholstering, Messrs. White and Sons, all of Chesterfield. The whole of the building is illuminated with electric light.

Dawdon.—The erection of the new Anglican Church of St. Hilda and St. Helen, the future parish church of Dawdon, is now proceeding. The cost, it is estimated, will be about £5,500. The church will be in the Norman basilica style of architecture, with an apse. It will be built of Lincolnshire faced bricks from Burton-on-Humber. The nave will consist of an arcade of six semicircular arches on either side, and there will be two side aisles, chancel, etc. The length over all, including the chancel, will be 130ft., and the width 53ft. 4in. The nave will be 81ft. long by 35ft. wide, and the side aisles 6ft. 6in. wide. The church was designed by Mr. C. Hodgson Fowler, diocesan architect, and is being erected by Messrs. John Clark and Sons, of Ryhope.

Gourock.—A new aisle to St. Bartholomew's Episcopal Church has just been built to the design of Mr. H. D. Walton, architect, Glasgow. Additional accommodation has thereby been provided for about 150 persons. Advantage has also been taken of the alterations to enlarge the organ, the work having been carried out by Mr. Andrew Watt, Glasgow.

Keadby.—A L. G. Board enquiry has been made into the Great Central Railway's proposal to erect a new bridge across the Trent. The existing bridge has been in use for nearly fifty years, and the railway company have grave doubts as to its suitability for further service. Considerable diversity of opinion is manifested—some contending that the new bridge should also provide facilities for road traffic. To this view, however, the railway company takes exception, it having been indicated that the additional cost would have to be defrayed by them. Another argument against the erection of the proposed bridge is that it would form a hindrance to navigation. The enquiry has been concluded.

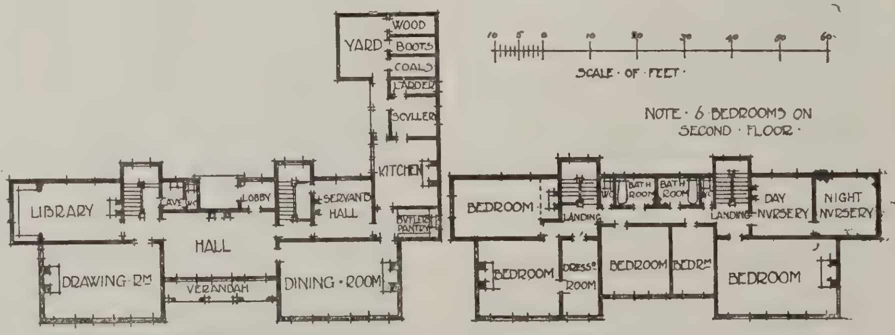
London.—The new block of workmen's dwellings now being erected in City Road by the bequest of the late Mr. W. R. Sutton, the carrier, will probably be opened about January next. The building is divided up as follows: Two four-room tenements, 9s. to 10s. a week; 94 three-room tenements, 7s. to 8s. a week; 123 two-room tenements, 5s. to 6s. a week; 65 one-room tenements, 2s. 6d. to 3s. 6d. a week. In each case the accommodation includes a scullery, in which a bath is fitted; and there are 10 shops, 32 barrow sheds, and 30 perambulator sheds.

London, N.—The new variety theatre for the Moss Empires, Ltd., which has just been completed at Islington, has, it is stated, involved a sum of about £45,000. The theatre occupies a site near Finsbury Park Station, and provides accommodation for 3,000 persons.

Leyton (Essex).—The Town Hall extension scheme has been completed, at a cost of about £12,000. The scheme included the rearrangement of the offices in the present Town Hall, and the erection of an addition, which comprises a Council Chamber, two committee-rooms, and various offices. Mr. William Jacques, A.R.I.B.A., London, was the architect, and Messrs. North Bros., Stratford, the contractors.

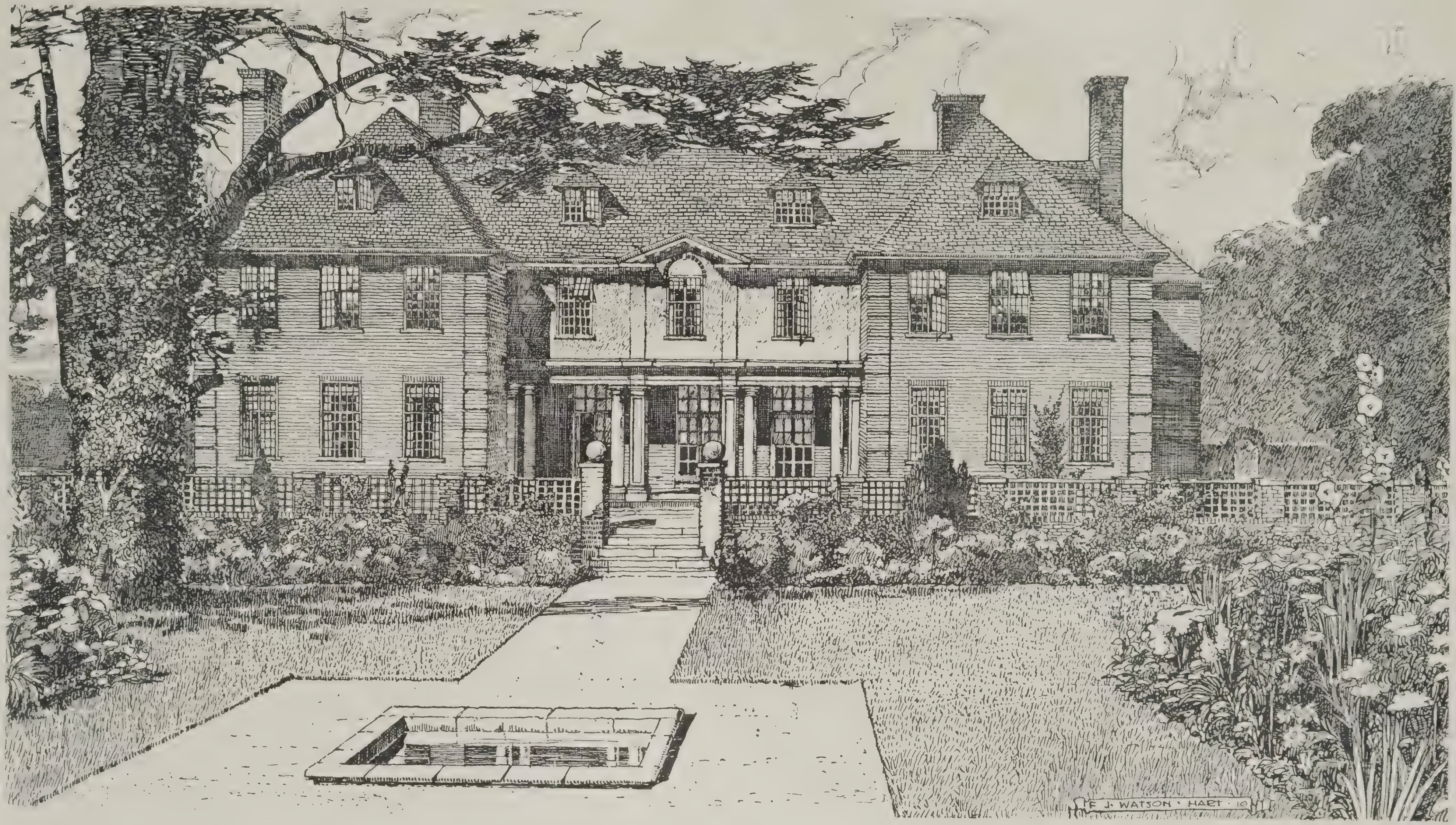
London.—When the Adelphi Theatre is reopened in October, it will have a new auditorium and entrances. The vestibule is being carried back three times the distance to which it used to extend, and will be rebuilt in marble and oak. The staircases at present leading from the centre of the hall to the dress circle and upper circle are being removed. A separate entrance for the upper circle will be provided from the Strand, and for the dress circle, foyer, and boxes a staircase leading from the further end of the vestibule will take the place of the old and narrow ascent. A semicircle of boxes will be built round the back of the dress circle, and the stalls will be provided with chairs upholstered in rose pink. The alterations are costing upwards of £15,000.

Mundesley (Norfolk).—At the church of All Saints, Mundesley, the Dean of Norwich has dedicated a new vestry, which has recently been erected on the northern side of the edifice on the original site of the long-fallen tower. Mr. S. A. Randall is the builder, and the work has been carried out from designs by the diocesan surveyor, Mr. A. J. Lacey, of Norwich. The greater part of the chancel is still in ruins.



· GROUND · FLOOR · PLAN · FIRST · FLOOR · PLAN ·

HOUSE NEAR WANTAGE. FAIR AND MYER, ARCHITECTS.



This house is situated about one and a half miles from the town in a plantation, and the garden has been formed by clearing and cutting an opening, so as to give a distant view of the hills from the reception room windows. The house is built of rough brindled stocks with brushed joints, red quoins, oak frames, and clear leaded windows. The Verandah and recessed portion are plastered and finished cream colour. The Roof is tiled with old tiles. Internally the hall is panelled in oak with enriched plaster ceiling: the drawing room is "Adam" in character, and the dining room has panelled walls painted green. The library has simple oak woodwork with beam ceiling. The terrace walls are in rough brickwork with oak trellis between piers.

Royal Academy Exhibition, 1910.

HOUSE NEAR WANTAGE: GARDEN FRONT. FAIR AND MYER, ARCHITECTS.

Newquay (Cornwall).—The new church of St. Michael, which is now in course of erection, is estimated to involve a sum of between £11,000 and £12,000. Mr. J. N. Comper, who is executing the Bunyan window for Westminster Abbey, is the architect.

North Rigton (Leeds).—The Countess of Harewood has laid the foundation-stone of the new church, which is in course of erection at a cost of about £2,000, but at present it is intended to erect only the nave and tower. Messrs. William Hill and Son, of Leeds are the architects, and their designs provide for a stone structure, with simple detail. The nave will be 43ft. in length and 23ft. wide, providing seating accommodation for 116 persons. A tower, 40ft. in height, will occupy the west end, having a small baptistery beneath. Both the site and the stone used for the building were given by the Earl of Harewood. The stone for the walls comes from the Crag quarries, and the ashlar from Harewood. The roof and the seating will be of oak. Mr. J. T. Wright, of Leeds, is the builder.

Oldham.—The Corporation has formally opened a new tramcar shed and works at Hollinwood, which have cost some £22,760, and occupy about 4,180 square yards. Increase in traffic has, in the main, rendered necessary the new building.

Old Trafford.—The new public elementary school for infants at Seymour Park, Old Trafford, which was recently opened, has been erected in Northumberland Road, Old Trafford, with the main elevation facing the Park. The accommodation provided for 400 infants is divided between eight class rooms, each holding 50 children, and grouped round three sides of a central hall.

Penmaenmawr.—The foundation-stone of a new parish hall has just been laid. The site is on the Vicarage ground, between Conway Road and St. Seiriol's Church. The building will consist of a large class-room, and smaller rooms on the ground floor. Over the smaller rooms will be a large room to seat between 320 and 350 persons.

Rosskeen.—A new church built by the dispossessed section of the Free Church congregation of Rosskeen has just been opened. The building is Gothic in style, erected from plans prepared by Messrs. Maitland, architects, Tain. The church is built to accommodate 400 persons, and its cost is about £1,300.

Slough.—The Urban District Council has approved the following plans:—House in Chalvey Road; four houses in Ledgers Road; two houses in Martin's Road; additions to shop front in High Street.

Stannington (Northumberland).—The chief stone for a new wing of the Philipson Sanatorium at Stannington for consumptive children has been laid by the Lady Mayoress of Newcastle. The Lord Mayor (Sir W. H. Stephenson) recently gave £4,000, which will enable the sanatorium to be completed in accordance with the original plan. The addition will comprise four wards, with accommodation for fifty children. Mr. D. M. Spence, of Shotleybridge, is the architect.

Starbeck (Harrogate).—The new church of S. Andrew, Starbeck, which was recently consecrated, is designed in the late Decorated style. It consists on plan of a nave of five bays, 79ft. long and 24 ft. wide, having north and south aisles 9ft. 8in. wide; chancel 36 ft. long, with chapel on north side 27 ft. long and 14ft. 6in. wide. The west window consists of five lights, with a fine tracery head. A bell turret, 60ft. high, is situated at the north-west angle of the nave. The nave arcade consists of octagonal piers resting on moulded bases, and having hollow splayed arches which spring direct from the piers. A tall clerestory of two-light, tracery-headed windows, is formed over the arcades. On both sides of the chancel is built a lofty arch, opening on the south side into the organ chamber transept, and on the north side into a portion of the chapel. The roofs are of open timber construction, and the interior is principally lined with stone. The total accommodation of the church, including chapel and choir, is 580. The work has been carried out from the design of Messrs. Austin and Paley, architects, Lancaster, by the following contractors: Mason, Mr. I. Dickinson, Harrogate; joiner, Mr. J. Tomlinson, Holbeck; slater, Mr. J. Shepherd, Harrogate; plasterer, Mr. R. Fortune, Harrogate; plumber and glazier, Mr. J. Woodhead, Wakefield; electric lighting, Mr. R. Falshaw, Harrogate; heating, Messrs. Saunders and Taylor, Manchester.

Sutton-in-Ashfield.—The new higher elementary school, the first one to be built in the county, has just been opened. It provides accommodation for 320 pupils, and the main building includes a laboratory. The total cost is between £9,000 and £10,000.

Trefriw (Wales).—The new Calvinistic Methodist Chapel, which has just been completed, including the site, together with five cottages, has cost altogether £7,500, the building and the organ costing £6,000. The chapel is 45ft. wide by 53ft. long, and provides, with the gallery, seating accommodation for about 550 persons. At the rear of the chapel are placed the various vestries, classrooms, etc., and above these, on a level with the gallery and opening direct from the high ground at the rear of the site, is a schoolroom with accommodation for about 225 persons. The building is fourteenth-century Gothic in design. The external walling is built with selected stone from the Trefriw quarry, relieved with "Grinshili" freestone dressings. The work was carried out by Mr. Joseph Hayes, contractor, Shrewsbury, from the design, and under the superintendence of Messrs. Dickens-Lewis and Haynes, architects, Shrewsbury.

Troon.—The foundation-stone of the new Roman Catholic church in course of erection in St. Meddans Street, has been laid. The estimated cost of the completed buildings is £10,000.

Wellington.—The new swimming and private baths in Walker Street have just been opened. The building has cost £2,500, and comprises a large swimming bath, 25 yards by 7½ yards, nine slipper baths, shower bath, caretaker's house, etc.

Whalley.—The Asylum Visiting Committee, in a report to the Lancashire Asylums Board, state that they have received 15 tenders for the erection of the main buildings in accordance with the plans and specifications approved by the Home Secretary. The tender sent in by Messrs. R. Neill and Sons for £356,000 has been accepted. On examination, certain miscalculations were discovered amounting to £154. Messrs. Neill and Sons agreed to reduce their original tender by that amount, and a contract is being entered into with them for due performance of the work at the sum of £355,846. Seven engineering firms were invited to send in schemes for the engineering works, comprising boilers, heating, and ventilating apparatus, hot and cold water supply, and fire service. The scheme of Messrs. Ashwell and Nesbit, involving a cost of £30,408, has been accepted. The cost of this work is included in the tender of Messrs. Neill and Sons.

Wolverhampton.—The new council school, which has been erected at the rear of Graisley Hill, has just been opened. The building stands in two acres of ground, of which two-thirds is set apart for recreation purposes, and has cost, with the land, £16,000. The new building, which is of red brick with tiled roofing, is divided into two blocks, and will accommodate 1,100 children.

Worksop.—A new Phthisis Hospital in connection with the Worksop Workhouse Infirmary, at Kilton Hill, has been opened by the Right Hon. F. J. S. Foliambe. The new building, which is of brick, has been built at the rear of the Infirmary on high ground to the north of the town, and is connected with the Infirmary by a covered corridor, the cost being about £1,088. Mr. Frederick Hopkinson, Worksop, was the architect.

Wrexham.—The new church of St. John Baptist, Wrexham, was consecrated recently by the Bishop of St. Asaph. It forms the third instalment of the church extension scheme set on foot three years ago. A new church house and institute was opened last autumn, a school church at the beginning of this year, and this new church marks the completion of three out of the four church buildings which the committee reported to be required. The cost of the buildings exceeds £15,000. The new church is a stone building in Perpendicular style, having seating accommodation for about 500, and has a tower and broach spire 120ft. high. There is no chancel arch, but the choir and sanctuary are separated from the nave by a carved tracery screen of oak. At the east end there is a very fine window of seven lights and tracery. The subject is the Te Deum. The figures are all designed by the late Sir Edward Burne-Jones, and the window has been carried out by Morris and Co., of Merton Abbey. The church was designed by Messrs. Prothero, Philpott and Barnard, architects, of Cheltenham, and the builders were Messrs. Collins and Godfrey, of Tewkesbury.

Yarmouth.—As a memorial to the late King, Lord Claud Hamilton, M.P., opened recently the new King Edward children's ward, which has been added as a wing to the hospital. This addition to the institution, including the new nurses' quarters and other alterations, etc., has cost about £3,300.

York.—The second section of the York Central Mission, comprising school premises and lecture-hall, has been opened. The school, which faces Swinegate, with three class-rooms and a kitchen, is on the ground floor and the lecture hall on the first floor, each providing accommodation for 220. They are heated by low-pressure hot-water pipes and radiators, and lighted by electricity. With the opening of these rooms the whole of the scheme—costing about £4.500—has been completed. Mr. C. H. Channon, F.R.I.B.A., of Malton, was the architect, and Mr. C. Martin, of York, the contractor.

CONCRETE FARM BUILDINGS FROM A SANITARY STANDPOINT.[*]

BY S. CUNNINGHAM, JUN.

Requirements for the sanitary construction of farm buildings make concrete and cement the most useful materials for floors and walls and even for roofs and ceilings when expense does not prohibit their use. Most Boards of Health which undertake to regulate the production of milk sold under their jurisdiction require or advise the use of cement for floors in cow stables and specify also that the walls and ceilings must be tight, clean, and free from dust-catching surfaces. This evidently suggests the use of cement or hard plaster finishes. At present stables are usually built of wood, but concrete in block or cast in forms is being used more each year and there is already a large number of barns scattered throughout the country which show in a highly developed way the best uses of concrete. The fireproof and permanent qualities of this material are powerful inducements of themselves towards its use. The ease with which it may be kept clean, the good health of the animals stabled in concrete buildings and the possibility of securing clean milk with a minimum of labour all increase the weight of argument in its behalf.

In floors, concrete shows practically no wear from use; it is watertight, non-absorbent and sanitary and if sufficient bedding is used it makes a satisfactory material for animals to stand and lie upon. When the floor is upon earth fill, it is advisable to put a layer of sand 6in. or more thick under it especially in damp locations, and to place under the stalls themselves a waterproofing layer. The latter is easily made by putting down two or three layers of tar paper on a base of cement, brushing it well with coal-tar pitch. This prevents dampness from drawing up through the concrete and makes a warmer floor. The waterproofing should be covered with a thickness of concrete and cement surfacing of at least 3in. for cow stalls and 4in. for horse stalls. It is possible to use less than this for cow stalls (but not advisable in horse stalls) by putting down metal lath over the waterproofing, nailing through to the concrete beneath to hold the lath firm, then plastering the lath with a heavy coat of cement mortar mixed 1 to 2, 1in. thick, or more. All stall surfaces and passages to be used by animals should be left rough, finished with a wooden float, or a float covered with carpet.

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[*] Paper read before the National Association of Cement Users.

Many farmers are prejudiced against a concrete floor; they think that it is cold, causing stiffness and rheumatism in stock and udder troubles in cows. If sufficient bedding is used, this objection is removed. The good points of a concrete floor outweigh all supposed disadvantages. If a wooden surface is preferred for the stalls, a platform may be made of 2in. oak, chestnut, or spruce, creosoted to prevent absorption of urine. The platform should be built in sections, one or two for each stall, set in a pan formed of concrete so as to be readily removable for cleaning or renewal. An excellent floor may be made of the creosoted wood paving blocks, such as are used for street paving. They are about 3in. thick and set with the grain vertical on a concrete base, and hot asphalt poured on to fill all cracks. Asphalt softens less from animal heat than coal-tar pitch, and does not work out of the joints to stick to the hide of the animals. There are some special floors that are good. Asphalt, mixed with granulated cork in a layer about ¾in. thick, makes a floor that is warm and gives a good foothold. Many of the patent floors are either cold or those made with a mixture of sawdust absorb the urine, and swell and come up from the concrete base; even those that stand well an occasional wetting will not stand the continued action of the urine.

Feed mangers in front of the cow stalls should be low and of just sufficient depth to allow also of watering the cows. Six inches is deep enough. Watering in this way at regular periods has been proved the best for cows. They drink more, and at more suitable intervals than when they have water always before them in individual drinking pots, which are, besides, very difficult to keep clean. It is often impossible to turn a large herd out to water from a trough in the yard, and the continuous manger into which water may be admitted from a large hydrant forms an easy and cleanly method of watering. The water being shallow and the mangers the temperature of the stable, the chill is taken off the water even in severe weather, while the water in a yard trough, unless special means are taken to warm it, is often too cold for the cows to drink deeply. The low mangers offer the advantage of feeding practically on the floor. The passage in front should be as high as the front of the manger, so that any feed thrown out by the cows may be easily swept back within their reach.

The stalls are made short enough (the length depending on the kind of stock) to have the droppings from the cows fall in the gutter, which should be about 16in. wide and 8in. or 10in. deep, enough so that when the cows lie down they will not get foul. The stalls should pitch not more than 1in. to 1½in. to the gutter. Too much pitch brings the weight of the calf and udder too much on the hind legs.

All feed passages, mangers and gutters should have a smooth, hard trowelled finish, easier to keep clean than a float finish.

Details in Concrete.

Concrete partitions have been used between stalls both for cows and horses, but iron pipe cow stalls are better, with metal stanchions to confine the animals. For horse stalls, partitions built with iron posts and ramps and 2in. by 8in. yellow pine slats, separated about 1in., are very stiff and give good ventilation, making them cool in summer. Horse stall floors should be treated as for cow stalls. They should pitch about 2in. towards the gutter. The gutter in this case should be very shallow, not over 1½in. deep, 16in. wide, and uncovered. There will be more wear on horse stall floors, so they should be laid more carefully, with this fact in view.

Where the floors join the walls, and in fact all interior angles in the stable should be coved or rounded on a 3in. radius to prevent corners for the collection of dirt. This seems a small detail, but it is one that makes a great difference in the cleanliness of a stable.

Concrete in many forms has been used for walls. The object to be attained is a hard smooth wall surface, insulated as well as possible from changes of external temperature. It is, of course, not difficult to prevent moisture coming through the outside, but condensation of moisture inside is more difficult to avoid. Concrete block with air-spaces, cored reinforced walls, and solid walls, furred with wood or metal and finished with plaster on metal lath, or lined with plastered partition tile or concrete block with a space between the two walls, are means used for insulation. Dampness in a stable is very often a sign of poor ventilation. A cow gives off from the lungs and skin from 8lbs. to 10lbs. of water per 24 hours, which must be removed to prevent the air from becoming saturated. In such an event, if the wall surfaces are but slightly colder than the dewpoint or condension temperature, water will form on them and under bad conditions there will be dripping. Fortunately, the amount of air required for healthful condition of breathing is in excess of that necessary to remove the moisture except in certain conditions. When warm, moist weather succeeds much colder temperatures the walls do not respond immediately and condensation occurs. If the air space in the walls is filled with chopped straw, sawdust, or planer chips, the insulation is improved. In wooden frame structures with inner walls of hard plaster on lath, condensation takes place unless the walls between the studs are filled as above noted, and even smooth wooden sheathing, painted or varnished, becomes moist, though it is not so apparent. The objection, then, is not one that holds against concrete alone.

Ventilation Must be Thorough.

This subject of ventilation is very important, and definite means should be provided to insure a proper circulation of air. The old farm buildings which were scarcely more than rough sheds were full of cracks through which air could pass. Modern concrete barns leave no such chances for haphazard ventilation, and with forty cows in a barn of 20,000 cubic feet capacity, each cow requiring five or six times the amount of air necessary for a man, the ventilation must be positive and adequate to make conditions healthful. It has been the usual experience, where condensation was taking place, that the circulation of air was insufficient for the health of the animals, due to the ventilators being kept closed. There are several good systems of natural ventilation, and no barn should be constructed without one of these, or other proper means to supply fresh air. In northern climates the barns should be made small; about 500 or 600 cubic feet capacity per animal is about right. Such a building is easier to keep warm and yet is large enough to allow proper ventilation without causing severe draughts. The ventilating flues may be built of concrete, tall enough to act on the principle of a chimney and to cause circulation by difference in weight of the column of warm air within and the cold air outside.

Concrete in Small Buildings.

For piggeries the use of cement in construction is as advisable as for stables. They are much more likely to be neglected and allowed to become foul, and a concrete finish is so easily washed down that there is no excuse for any such condition. Pigs are liable to contagious diseases, and a building that can be hosed out and disinfected, and that has no absorbent materials or cracks to harbour bacteria can be used again with no danger of the infection spreading. This applies as well to cow stables.

Almost all large milk farms depend in a great degree on ensilage for food. A concrete silo is equal to the best that can be built for storing ensilage. The proper preservation of ensilage depends on keeping it packed tight to exclude the air, with smooth walls, so that as the ensilage settles it does not loosen at the walls to admit air there. Structually, concrete silos are practically everlasting. The acids existing in the fermented juice of the corn attack the surface to a very slight degree only, and concrete walls, either solid or cored, prevent the freezing of ensilage better than a wooden stave silo, the form most commonly used. The freezing not only spoils that part of the ensilage lying within a few inches of the wall, but by causing the frozen ensilage to cling to the wall, the even settlement is interfered with and part of the rest spoiled by the admission of air.

For poultry houses, concrete makes a warm, tight building that will exclude rats and other animals preying on chickens, and that can be kept clean, to the prevention of lice. The floors in laying house pens should be made 6in. below the levels of the door sills and filled with cut straw or gravel for scratching. This can be renewed as often as necessary to keep the floors clean.

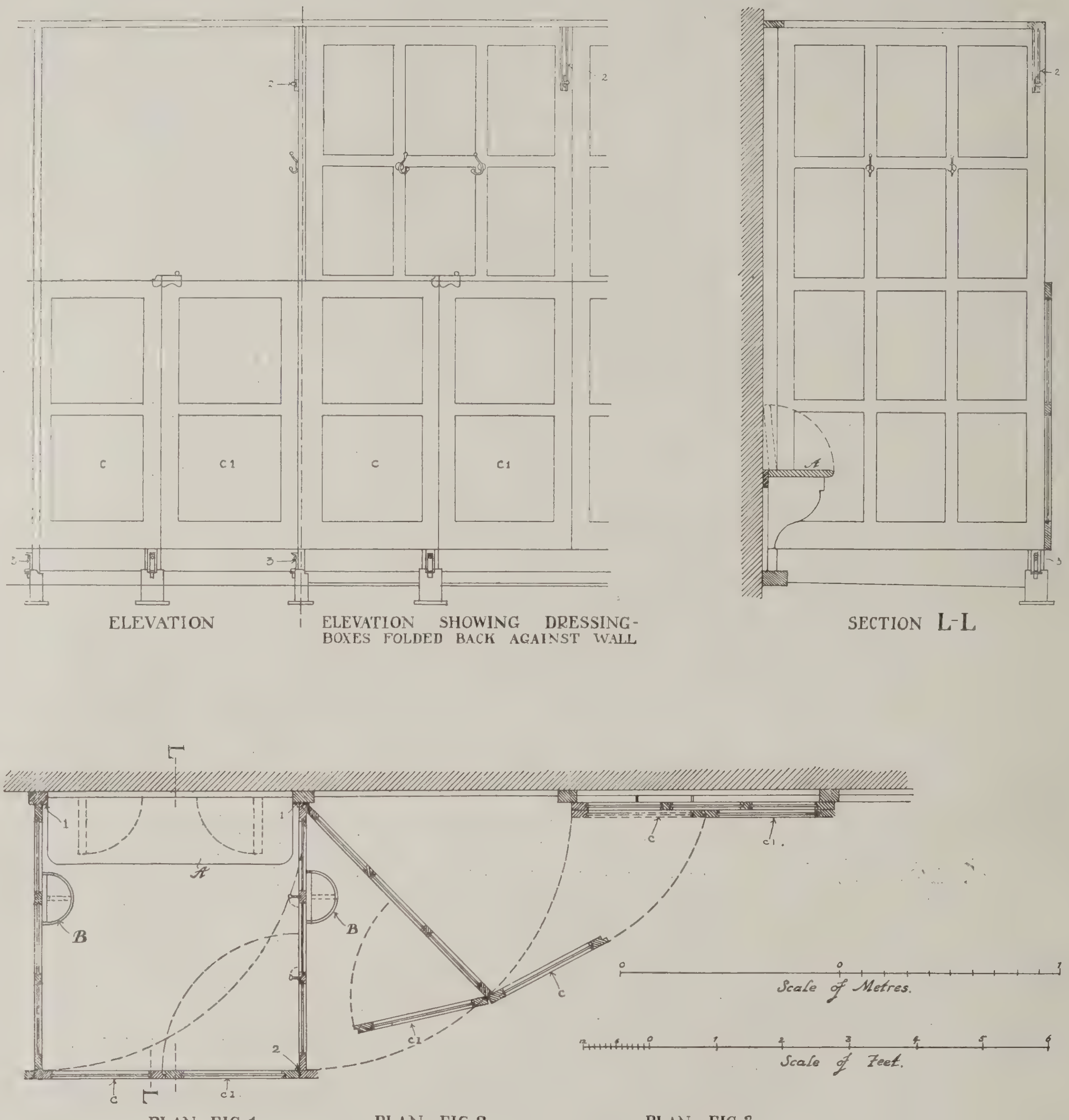
When manure is stored and not spread on the fields as soon as produced, a tight pit, covered or uncovered, is necessary to prevent the leaching away by the weather of the soluble parts of the manure, which are the most valuable as fertilizer. Concrete offers an excellent material of which to construct such pits. The floors may be pitched to a sump pit in one corner and the liquid pumped out and applied to the fields, using a sprinkling cart for this purpose.

Concrete Best for Dairy Buildings.

The production of clean milk requires the best sanitary conditions in the buildings in which the milk is handled as well as in the cow stable where it is produced. The extensive use of concrete floors and smooth plastered walls with coves in all angles will make such a dairy easy to keep clean but offers no particular requirements in the way of sanitary design. In this connection, however, it has been found that wooden soled shoes offer a much better way of keeping the feet of the workers dry and warm than do rubber shoes, which are heavy and unhealthful and wear out quickly on the concrete floors. The use of live steam and hot water from hose-bibbs offers an increased advantage in keeping such buildings clean and sterile.

For greenhouses, hotbeds, and wherever wood in contact with earth has been found to rot out, concrete has been substituted with the expected advantages. Tables in greenhouses can be easily designed and built of it, making them permanent and avoiding a large item of expense in renewals. No objection has been discovered to its use in this way from any unfavourable action on plant life. In fact, it forms a better protection than wood from possible variations of temperature.

The fact that concrete can be kept clean more easily than any other material in common use is its greatest recommendation for its use in farm buildings. The realisation that health depends to a very great degree on cleanliness is as true for farm stock as it is for mankind. Good labouring help is difficult to obtain on most farms, and anything that, like concrete, contributes to the reduction of labour necessary to keep the surroundings clean is bound to grow rapidly in favour on that score alone, especially since no valid objections can be substantiated to its use in connection with stock or farm products.



ELEVATION

ELEVATION SHOWING DRESSING-BOXES FOLDED BACK AGAINST WALL

SECTION L-L

PLAN. FIG. 1

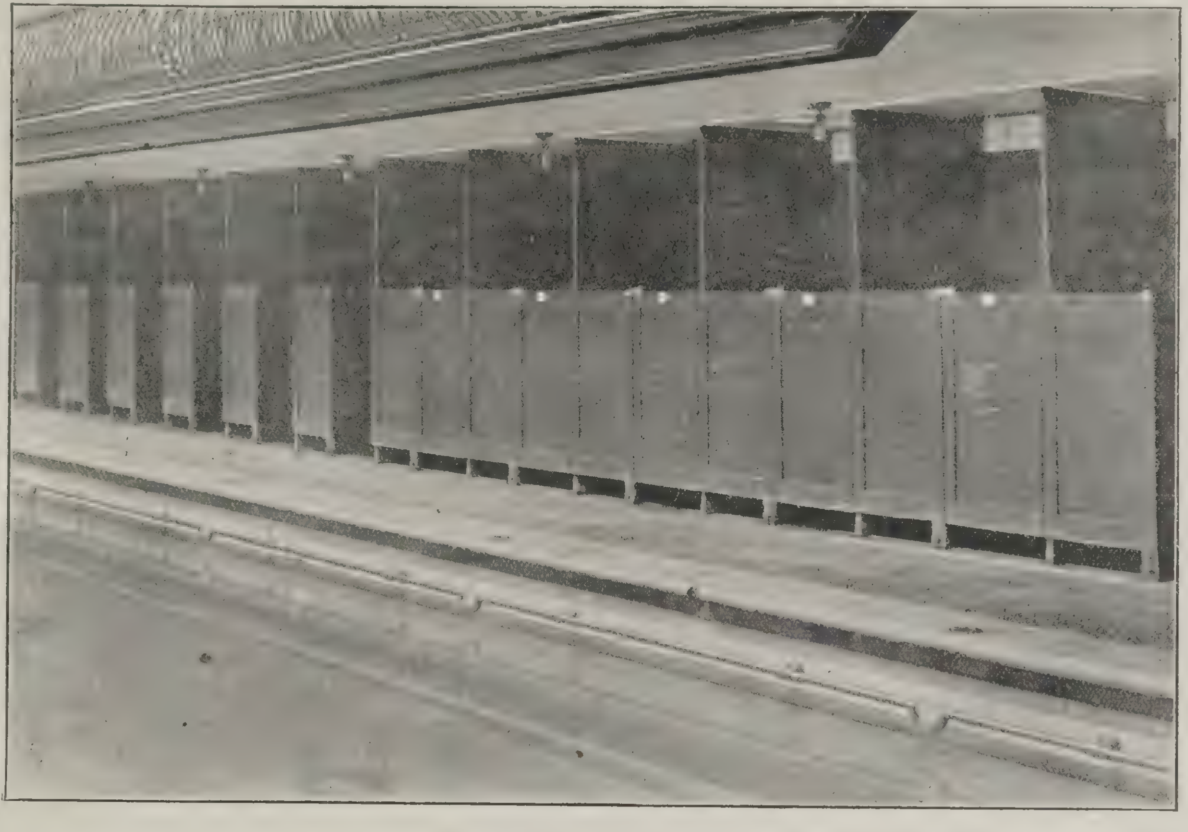
PLAN. FIG. 2

PLAN. FIG. 3

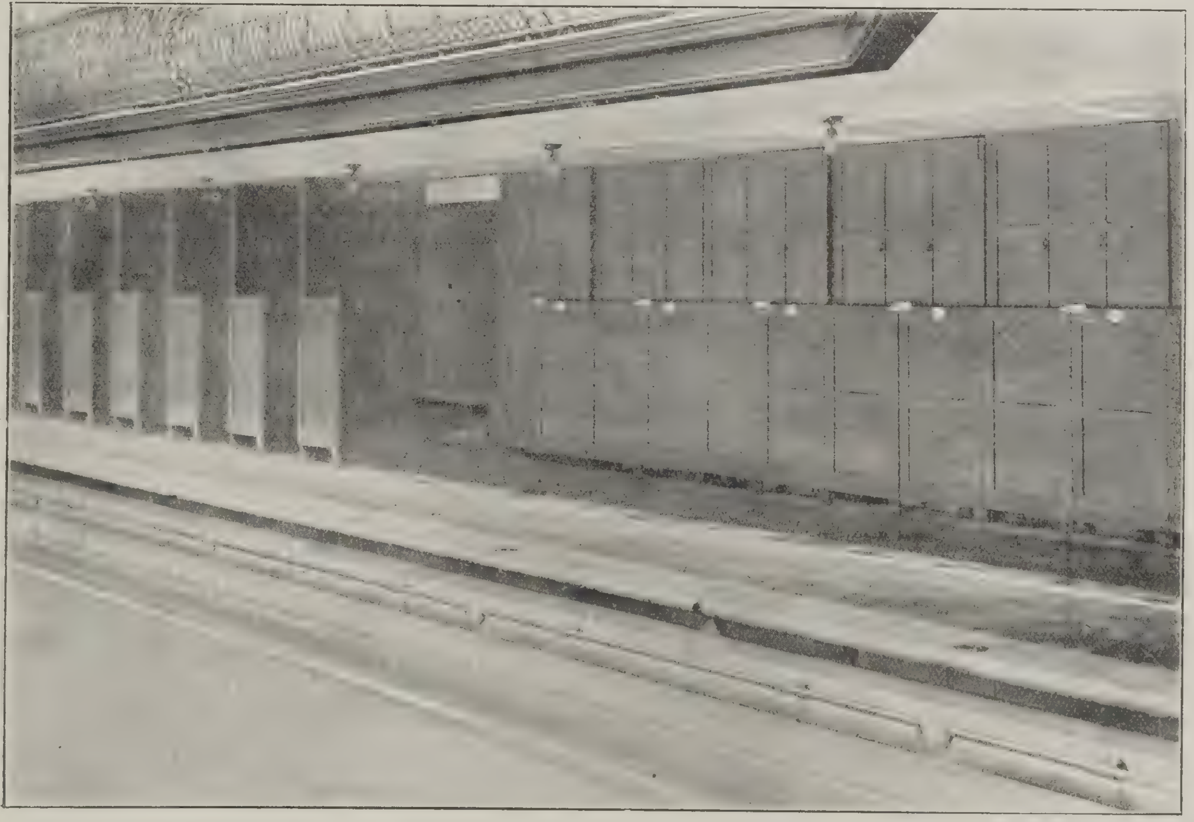
Fig. 1 shows the dressing-box in its normal position, the partition (which is hinged at 1) being held at the front by a bolt (2) at the top, and another bolt (3) at the bottom fitting into a gunmetal shoe let into the floor. The shoes are removable. When it is desired to alter the boxes the bolts are withdrawn and the partition pushed inwards: this is the position shown in Fig. 2. Fig. 3 shows the final position. Each partition carries the front half C of one box (which is bolted at the bottom) and the door C1 of the adjoining box, and both are hinged on the same side, C covering the thickness of the partition and C1 butting against C. At Hoxton the boxes are made of teak, and it is desirable that they should be so made where it is proposed to obtain a licence from the London County Council for using the bath hall as a place of entertainment.

COLLAPSIBLE DRESSING-BOXES, HOXTON PUBLIC BATHS, PITFIELD STREET, LONDON. N.

A. W. S. CROSS, M.A., F.R.I.B.A., ARCHITECT.



View showing boxes in position.



View showing boxes folded back against the wall.

Swimming-baths are frequently covered over with a temporary floor during the winter months, so that the hall may be used for entertainments. The value of these collapsible dressing-boxes will, therefore, be at once apparent. The idea was suggested by Mr. E. J. Wakeling, Chairman of the Baths Committee of the Shoreditch Borough Council. It will be seen from the drawing reproduced on the opposite page that the boxes are held normally in position by bolts at top and bottom, and that they can be folded back against the wall when required, forming excellent panelling and affording extra floor space. At Hoxton the gallery comes down on to the boxes, which makes it difficult to obtain a satisfactory photograph; but the above views, seen in conjunction with the drawing, will show how the folding back is effected.

COLLAPSIBLE DRESSING-BOXES, HOXTON PUBLIC BATHS, PITFIELD STREET, LONDON, N.
W. S. CROSS, M.A., F.R.I.B.A., ARCHITECT.

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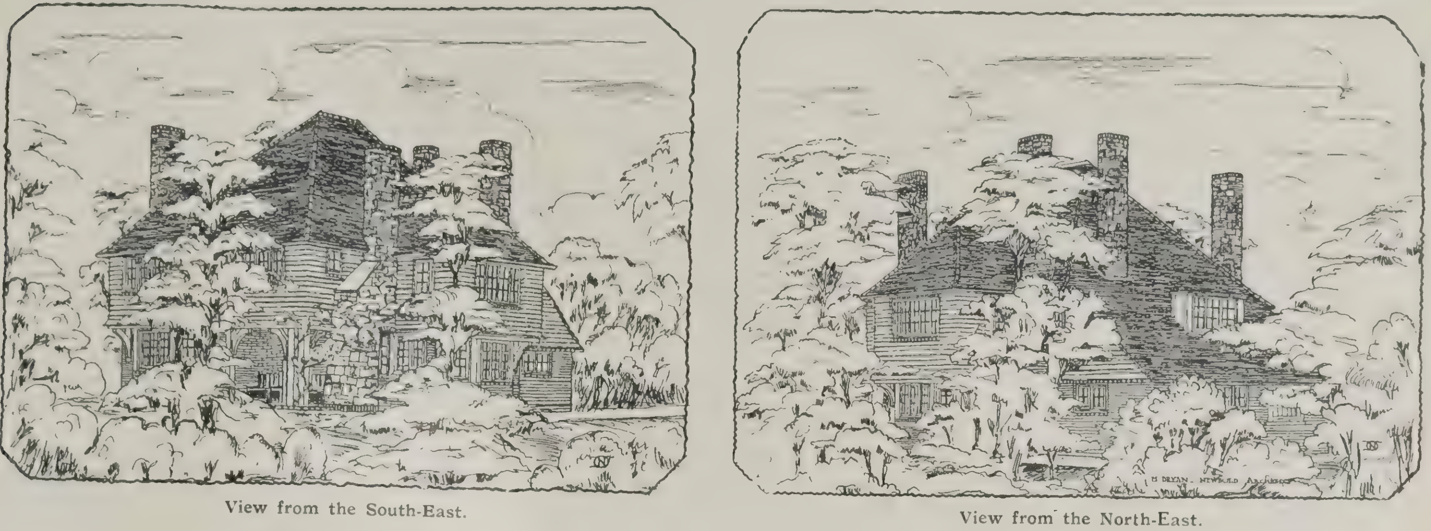

View from the South-East.

View from the North-East.

THE "HOUSE DREAM," RINGWOOD, HANTS. H. BRYANT-NEWBOLD, ARCHITECT.

BUILDERS' NOTES.

Scottish System of Contracting. With reference to the note on the English and Scottish systems of contracting which appears on another page, it is to be recorded that Mr. John Wylie, secretary of the Glasgow and West of Scotland Building Trades Employers' Council, states that this organisation is protesting strongly against the inclusion of the various trades in one contract.

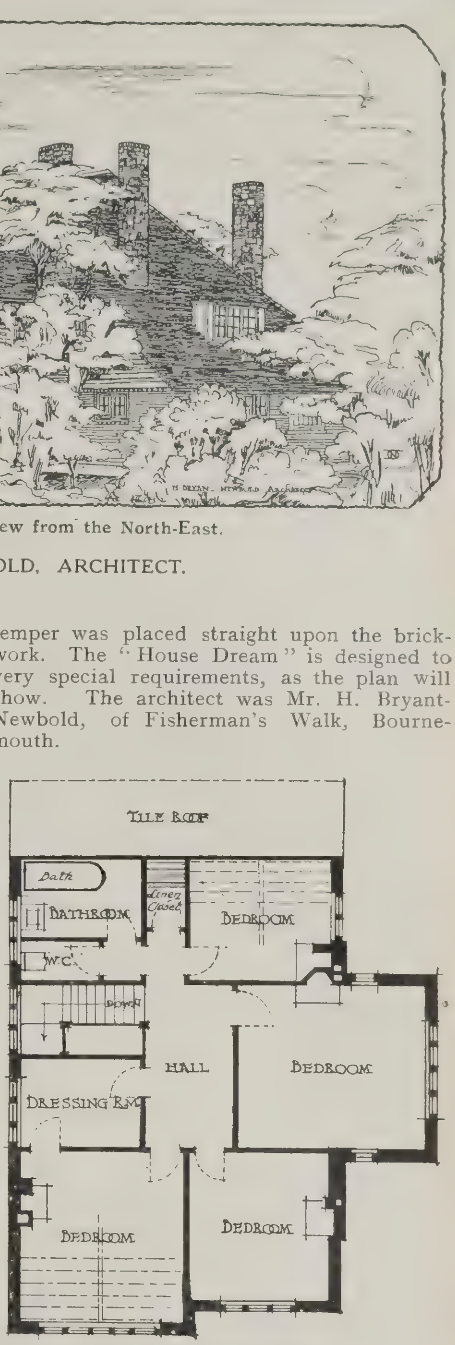
A Paint-makers' Federation. A meeting of the committee of the Paint and Oil Section of the Newcastle Chamber of Commerce was held recently, at which a letter was read from the Hull Association, asking the opinion of the committee in regard to the formation of a National Association of Paint and Oil Manufacturers. It was unanimously agreed, says the "Magazine of Commerce," to support this proposal, and to send representatives to any meeting that might be held. The Chairman called attention to the new duty on ordinary paint in Greece, amounting to 5d. a pound, which would practically shut out all paint from Greece. It was agreed to make representations, jointly with other associations, to the Board of Trade, and also to the Grecian Chamber when it meets in the autumn. The question of railway rates, especially the difference between the charges for the carriage of lead and oil was also discussed.

A Gift to Bath Master Builders. Mr. Mowbray Green has presented Mr. George Hayward, president of the Master Builders' Association, with fifty copies of the photograph of the party taken by him on the occasion of the Bath Master Builders' Association outing to Corfe Castle. The photograph is distinctly good. The negative is quite a small plate, and Mr. Green has most successfully developed it, and has had the picture enlarged, and it now makes a most artistic souvenir of a very happy day. Mr. Hayward is sending the photograph out with the inscription upon the back: "A souvenir of the Bath Master Builders' Outing, June 22nd, 1910, with compliments from Mowbray A. Green, Esq., F.R.I.B.A."

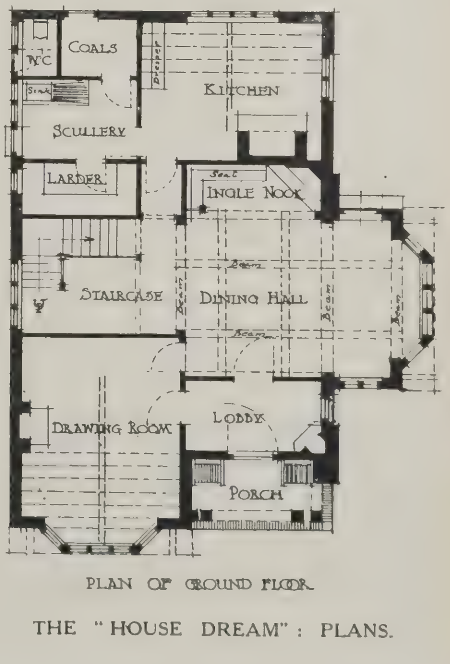
The Yorkshire Federation. The monthly meeting of the Yorkshire Federation of the Building Trade Employers was held in the Albemarle Hotel, Scarborough, on August 19, Councillor W. G. England, J.P. (Barnsley) presiding. Others present included Alderman W. Judge (Wakefield), Councillor W. Kitching (Malton), Mr. A. J. Forsdike (Sheffield), Mr. W. T. Ledgard (Leeds), Mr. J. Dawson (Huddersfield), Mr. W. R. Thompson (Dewsbury), Mr. J. W. Mallinson (Huddersfield), Mr. W. E. Biscombe and Mr. C. Dent (York), Mr. A. W. Sinclair, Mr. R. H. Carr, Mr. R. Watkinson, and Mr. C. Peckett (Scarborough), Mr. B. Rushforth, and Mr. R. G. Kitching (Great Grimsby), Mr. W. Hodgson, Mr. R. Finch, and Mr. T. Townsley (Hull), Mr. W. Hoggard, and Mr. T. Kneeshaw (Bridlington), Mr. F. Mountain, Mr. G. W. Nettleton, and Mr. P. Rhodes (Leeds), Mr. H. Fallas (Horbury), Mr. J. L. Skyes (Huddersfield), Mr. R. Raper and Mr. C. Booth (Bradford), Mr. H. Naylor (Halifax), Mr. A. Marshall (Dewsbury), and Mr. J. Davidson, secretary (Leeds). The business was of a routine character. The members and delegates were entertained to tea by the members of the Scarborough Association. At the conclusion of the tea a hearty vote of thanks was proposed by Mr. Paul Rhodes (Leeds), and seconded by Mr. W. Mallinson (Huddersfield), to the Scarborough Master Builders' Association for their hospitality. The President announced that an invitation had been received from the Bridlington Master Builders' Association to hold their next meeting there. The invitation was accepted.

THE "HOUSE DREAM," NEAR RINGWOOD, HANTS.

This house, called the "House Dream," by its owner, was built, or rather grew in the neighbourhood of the quaint old Hampshire town of Ringwood. It nestles, as shown in the sketches, among the pine trees for which Hampshire is so famous. Old hand-made sand-faced tiles were used on the roofs, rough rubble masonry for the chimneys, with stone slates to the slopes; strawberry-red, brick-on-edge cappings and edgings, giving an inexpensive and simple finish. The whole of the upper storey was weatherboarded in oak with the bottom edges uncut, showing the natural contour of the tree. The bricks were obtained from a tumble-down barn, and these, handled carefully by sympathetic workmen, still retain in their new position the colours that age alone can give; there is an indescribable mellow tone over the whole. Although the "House Dream" has been given an appearance of age, it has all modern conveniences. The sanitation is on the latest methods; there is an electric bell service, and a system of telephones from room to room. Electric light is made on the estate with a small oil engine plant. Internally, one of the chief features is the large dining hall. No wall papers have been used, and in some cases Hall's washable distemper was placed straight upon the brickwork. The "House Dream" is designed to very special requirements, as the plan will show. The architect was Mr. H. Bryant-Newbold, of Fisherman's Walk, Bournemouth.



PLAN OF FIRST FLOOR.



PLAN OF GROUND FLOOR.

THE "HOUSE DREAM": PLANS.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

- **(1) *Enquiries about buildings to measure in particular towns and districts.***
- **(2) *Enquiries embodying questions which have been set in examination papers.***
- **(3) *Enquiries which ask for or require the preparation of special designs as part of the answer.***

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries sent must be on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

St. Fagan's Church, Glamorganshire.

K. F. (EGREMONT, CHESHIRE), writes: "Please give particulars of any interesting architectural features at St. Fagan's Church, Glamorganshire. Any interesting historical facts would be appreciated."

—This church consists of a nave of three bays, with north aisle, south porch, and western tower, and a chancel with sedilia. It consists principally of Norman and Decorated work, and was restored in 1860. There is a brass tablet to John Rosse, dated 1710.

G.

Partnership Formalities.

N. H. (HUDDERSFIELD) writes: "A is an architect who has been in practice for 15 years. B is 28 years of age, has served his Articles under A, and has been in his employ since. B intends going into equal partnership with A. (a) How many years' purchase, calculated on the nett profits, ought B to pay for such partnership? (b) Does nett profit mean the profits of the business after deducting a reasonable salary for A, also deducting interest for capital invested in the business by A? (c) Is it customary for partnerships to be for a stated period? (d) What security has B for money paid as premium at the expiration of that period?"

—As to (a), there is no definite rule so far as we are aware with regard to the number of years' purchase which a person entering into partnership with an architect must be prepared to pay. Much depends on the nature of the business. If it is of a purely personal character, that is to say, a practice in which the *clientele* relies to a large extent on the personal skill and taste of the architect, it is apprehended that it would not be regarded as worth a very high premium. As to (b), in estimating net profits, it appears to us to be clear that the salary of every paid assistant must be taken into account. It is an outgoing; a form of expenditure which is necessary in order to earn the income. It would also be deducted by the architect himself when making his return for income tax. The point as to whether interest on capital invested by A in the business is to be taken into account is not so easy to decide. It appears to be a matter for negotiation between vendor and purchaser. As to (c), there is no custom for partnership to be for any particular period. As to (d), the only security which B will have for his premium is that which he would derive from the partnership assets when the partnership was in voluntary or compulsory liquidation. When the accounts were taken, it would then be considered how much each partner had put into the business, and B's share would be charged on the assets of the business. Of course, this would not be the correct principle if there was a special clause in the partnership deed providing that the premium was to become the sole property of A.

X.

How to Become a Reinforced Concrete Expert.

Apropos our answer to a correspondent published under the above heading in our issue of August 24th, our attention has been drawn to the value of instruction by correspondence, which forms a convenient method of acquiring knowledge when it is difficult, personally, to attend one or other of the usual centres. In such circumstances, it is advisable to take up a course of tuition by post, such as provided by the Embankment Engineering Institute, 64, Victoria Street, Westminster, who give particular attention to the practical designing of reinforced concrete structures. The courses of instruction are very carefully prepared, and specially adapted to the circumstances indicated.

Wright's Concrete Fixing Bricks.

A correspondent writes asking for the name and address of the makers of Wright's patent concrete fixing bricks. Should any reader have cognizance of the bricks referred to, the Editor would be glad of the information.

Foundation in Unstable Soil.

"NOVICE" writes: "I am about to build a small residence on a riverside site, the subsoil of which is very unsatisfactory. The houses on either side of the site are cracking badly, the one being built upon piles, and the other having a concrete foundation 6 feet deep. Water is reached at a depth of less than 9 feet. I should be much obliged if you would suggest a way of making a firm foundation. Would reinforced concrete answer? The height of the highest ridge to proposed house will be under 30 feet. I intend using rough-cast externally. Kindly give composition of a good white rough-cast, to be finished with a smooth surface."

—Our correspondent does not provide any detailed information regarding the depth of the bad ground, and the exact nature of the strata on the site in question. It seems to us a case for piling, which would be best in reinforced concrete, though when ground is permanently waterlogged, it might be of timber, upon the heads of which piles reinforced concrete beams sustaining a reinforced concrete platform should be constructed. Upon this the walls could be raised without fear of settlement. The work would need to be designed specially for the site and the building. As regards the white rendering which our correspondent contradictorily calls smooth rough-cast, we suggest the use of silver sand and the white Portland cement made by Messrs. G. and T. Earle, Ltd., of Hull, proportions three sand to one cement.

D.

Apportionment of Expenses.

J. C. (FARNWORTH) writes: "Under Section 150 of the Public Health Act, 1875, under which certain work has been done, can an Urban District Council add 'Surveyor's Charges' to the contract? Can an amount paid to the authority several years ago, to which was added 10 per cent. for such charges, be deducted from an account now due to the authority (to which contract 5 per cent. has been added for 'Establishment Charges')?"

—The scheme of the Public Health Act and of the Private Street Works Act in relation to the apportionment of paving expenses is that all reasonable expenses incurred by the local authority in relation to the making up of a road shall be apportioned among the frontagers. It is obvious that the local authority must employ a surveyor to give advice in relation to the matter, or they may incur unnecessary expense. In these circumstances, the fees of the surveyor may clearly be added to the total cost which is to be apportioned. Assuming, however, the charge is improper, there is a definite procedure by which any householder who is affected may make a protest; but it must be made within a certain time. He certainly could not seek to recover an overpayment after the lapse of seven years, for his claim, even if it were otherwise good, would be barred by the Statute of Limitations, which provides that actions for the recovery of money must be brought within six years. "Farnworth" does not make it very clear whether the "establishment charges" are sought to be levied in respect of a new apportionment. If so, it seems to us that establishment charges are not properly made, and we would advise him to appeal against it. He should consult a solicitor about this.

X.

Book of Public Health Acts.

S. H. (ASHBY) writes: "I should be pleased to know what book you would advise containing all Public Health Acts from 1875 up to date, etc."

—Public Health Act, 1875, and other Statutes and parts of Statutes relating to public health. With a complete index to same by F. Stratton. New edition revised to 1908. 8vo. 8s. 6d. net, postage 5d. extra. B. T. Batsford, 94, High Holborn, W.C.

Safe Loads of Fireproof Floors.

"SAFETY" writes: 'I have received an estimate for fireproof floors, which have to carry a safe load of 1 cwt. per foot super. The estimate provides in the first floor for 5in. × 3in. steel joists, 2ft. 6in. apart, for a bearing of 17ft. with cement concrete 6in. thick, and in the second floor for the same bearing and the same thickness of concrete with 4¾in. × 1¾in. steel joists. What is the greatest deflection that should be permitted as safe in testing the floors?"

—With ordinary joist sections of steel in a concrete floor, spaced comparatively widely apart, such as in the present example, it is not safe to treat the work as reinforced concrete. Consequently, we can only regard the concrete as serving to strengthen the joists latterly against side bending, whereby we can safely employ sections for spans of thirty times the depth; whereas ordinarily we can only safely employ them for spans twenty times the depth of the section. We cannot rely upon the deflections being reduced by the presence of the concrete, though it often is so, and perhaps the resistance might be augmented.

As regards the resistance, we must not exceed the safe stress on the material. In the example furnished by the correspondent nothing is said about the load on the upper floor being different from that on the first floor, so that there is obviously no reason to reduce the steel as has been done. Therefore, taking the concrete and steel as weighing 150lbs. per foot cube, we have 187lbs. per sq. foot as the inclusive load on a stirrup 2ft. 6in. wide and 17ft. span. This gives us a bending moment on each joist of 90.5 inch tons. The modulus of section of the 5in. by 3in. joist is 5.45. Dividing the 90.5 by this figure, we obtain 16.6 tons per sq. foot as the stress in the steel, which is too much. Likewise, with the 4¾in. by 1¾in. section, which has a section modulus of 2.84, we get 31.7 tons per square foot as the stress, and the ultimate strength would only be from 28 to 32 tons. We therefore see that the floor is incorrectly designed. Of course, if continunity were spread over several spans, and the joists were loaded alternately, the bending moment would be less, and similarly the stress; but on the information given, it would appear that this is a case where reinforced concrete could be used with economy.

D.

FEDERATION NEWS.

Sheffield Master Builders' Association.

The monthly meeting of the Sheffield Master Builders' Association was held on August 11th, at the Builders' Exchange, the president (Mr. Wm. Longden) in the chair.

Finance.—The treasurer's statement showed the finances of the association to be at the highest point they have ever been in the history of the Association. The President was unanimously elected trustee in succession to the late Mr. Mastin.

New By-Laws.—Timber Sizes.—It was reported that this question was still under consideration by the sub-committee of the City Council, which had in the meantime met two deputations from the Master Builders' Association. Up to the present, however, the sub-committee did not appear to be inclined to make any deviation from the revised sizes issued by them, which they held were the net result of expert opinion culled from text books and from the local architects' society. The secretary, referring to a paragraph and article in the "Architects' and Builders' Journal," pointed out that a similar matter was under discussion at Gateshead, and he was instructed to obtain further particulars of the sizes which were there suggested. The sizes recommended by the association appear in the first column below, the larger sizes appearing in the second column, being those recommended in the new draft by-laws of the City Council.

LENGTH OF PURLINS NOT MORE THAN 6.6

With Purlins apart

6ft. only (1) we suggest 5½ x 2 not 7 x 2

6.0 to 7.6 (2) we suggest 6 x 2 not 7 x 2½

7.6 to 9.0 (3) 7 x 2 or 6 x 2½ not 7 x 3

LENGTH OF PURLIN 6.6 to 8.0.

With Purlins apart

6ft. only (1) we suggest 6 x 2 not 9 x 2

6.0 to 7.6 (2) we suggest 7 x 2 not 9 x 2

7.6 to 9.0 (3) we suggest 7 x 3 not 9 x 3

LENGTH OF PURLIN 8.6 to 10.6.

With Purlins apart

6ft. only (1) we suggest 7 x 2½ not 9 x 3

6.0 to 7.6 (2) we suggest 7 x 3 not 9 x 4

7.6 to 9.0 (3) we suggest 8 x 3 not 11 x 3

LENGTH OF PURLIN 10.6 to 12.6.

With Purlins apart

6ft. only (1) we suggest 7 x 3 not 9 x 4

6.0 to 7.6 (2) we suggest 8 x 3 not 11 x 3

7.6 to 9.0 (3) we suggest 9 x 3 not 11 x 4

7 x 2½, 7 x 3, and 8 x 3, are respectively in use for 10.6 to 12.6 lengths.

LENGTH OF PURLIN 12.6 to 14 6.

With Purlins apart

6ft. only (1) we suggest 8 x 3 not 11 x 4

6.0 to 7.6 (2) we suggest 9 x 3 not 11 x 4½

7.6 to 9.0 (3) we suggest 11 x 3 not 12 x 5

LENGTH OF PURLIN, 14.6 to 16.6.

With Purlins apart

6ft. only (1) we suggest 11 x 3 not 12 x 5

6.0 to 7.6 (2) we suggest 11 x 4 not 11 x 5½

7.6 to 9.0 (3) we suggest 11 x 3 not 12 x 5

The sizes recommended by the association are well in excess of those which are in general use, and they have only been suggested by way of meeting as far as possible the extraordinary demand for increase on which the City Council at present insist, and for which increase the sub-committee of the Council are unable to give any reason whatever beyond the fact that they are the result of expert (i.e., theoretical) opinion. At the last meeting of the deputation with the sub-committee of the Council it was mentioned that the association should have an opportunity of placing their views before the full Committee, and, accordingly, the deputation, which consisted of Messrs. J. D. Cook, T. Eshelby, J. Sivil, W. Lockwood, and the secretary, met the Committee on Tuesday, August 30th.

In presenting the case on behalf of the association to the sub-committee, the secretary read a statement in which he pointed out that in the first instance the new draft by-laws contained sizes of roof timbers which the association considered were far beyond what were necessary. They ascertained that they were the result of theoretical calculations which had been placed before the Council, and complained that when the Council had considered it prudent to seek outside suggestions, they had overlooked the Master Builders' Association, who were more vitally interested in this question than any other body. The result was that they were recommended to meet a representative of the Architects' Society, who had taken much interest in this matter, and when they met him on June 14th they were told that the figures had been worked out in all instances on maximums where there was a jump from a shorter to a greater length of purlin. In face of the calculated experience to which he was referred, he could not say that the sizes suggested by the association were inadequate, and would not be prepared to oppose their adoption by the City Council. This, at the request of the sub-committee of the City Council, had been duly communicated to them.

The association asked the Council why the sizes which originally appeared in the draft by-laws had been still further increased by a memorandum, and they had asked, and repeatedly asked, for a reason, but had got the reply that roofs had sagged. They are still asking for instances. They naturally argued that if floor timbers were left at the old sizes, while roof timbers were enormously increased, it was self-evident that there was some cogent reason for the divergence, and that the Council or its officials had some specific cases in mind of which the association had no knowledge. On its own side, the association gave the names of the six members of the deputation:—Messrs. Longden, Forsdike, Cook, Eshelby, Savil, and Biggin — all of whom were large and well-known builders and contractors, and said that any or all of them would be pleased at any time to show the Council's officials, or anyone, thousands of houses constructed over 20 years ago, with timbers of the usual sizes—which were less than those now suggested — and where the roofs were as straight and perfect as when they were constructed. The offer had not been taken up, and was still open. They could not think that it was possible to offer any more convincing or conclusive proof.

The association pointed out that a heavy beam did not necessarily imply additional safety; everything depended upon the distribution of weight, and once the factor of safety had been reached and a reasonable margin allowed, it was almost as unwarrantable to increase the size by an inch as by a yard.

The sub-committee would probably expect them to refer to a case in which the roofs of some cottages had tumbled in since they last met the Committee. In this case the Corporation's officials had invited the deputation to inspect the property with them, and the town clerk had subsequently favoured them with photographs showing the damage. This case did not advance the argument beyond proving that the contentions of the association were correct. The subsidence had no connection whatever with the size of the timbers used, though the timbers were of less sizes than those recommended by the association and by the sub-committee of the Council. The fault was entirely due to the method of construction, which would not now, and ought never to have been permitted. A pair of cottages were divided by a 3ft. passage, the walls of which, instead of being carried to the ridge, were carried only to the level of the eaves, and a prop of 5 x 3 charred timber simply placed on end on the top of one of these walls was the only support for 28ft. of 6 x 2½ purlins. One of the purlins was 16ft., and was nailed to a notch in the prop, while the other was nailed on top of it without other support. The only wonder was that it had held up so long as it had done. It was fortunate that the sizes now recommended had not been used in this case, as with such a method of construction there might conceivably have been fatal consequences if the additional weight of timber had gone through the ceiling and fallen into the bedroom beneath. At this point, the chairman of the Committee, Mr. Councillor Neal, intimated that the Council did not intend to support their contentions on this case, and the secretary, in reply, said there was therefore no need for them (the deputation) to show the Council the prop, which the deputation had brought with them.

Mr. Sivil followed, and reminded the Committee that the association were anxious to give their support and moral sanction to the whole of the by-laws. It would be a most unhappy state of things to have by-laws which were repudiated by the very people (the builders) who were best able to judge of their efficiency and necessity. Fortunately they were able to support the bulk of them, but in regard to sizes of roof timbers they were hopelessly at variance with the sub-committee. In purlins they (the association) had supplied a list of sizes which they considered to be ample for the purpose (the sizes being much larger than those which were now ordinarily in use), but in some cases these sizes were not of more than half the strength which had been put down in the new schedule. The sizes the association had suggested had a weight-bearing capacity of quite double what they would be called upon to bear with the thickest Welsh or Westmorland slates. The advisers of the sub-committee seemed to have some theory about wind strain, which they said made necessary a further addition of 100 per cent. to the strength, while they (the association) considered that the allowance made—double the strength—was sufficient for any wind strain to which a roof would be subjected in this part of the world. If the wind strain had to be calculated, it must be clear that was very much greater between a one storey and, say, a 4, 6, or 8 storey building, where the force of the wind was enormously increased, but no distinction was made in the schedule. Moreover, the wind strain on a roof with dormer lights, turret gabelets, or other obstructions, was much greater than in a plain roof, but no account whatever was taken of this difference. Further, there were no sizes whatever put down for anything except plain roofs, no sizes for principals, no method of construction, etc., etc., no sizes for hip rafters or valley rafters. As a matter of fact, a builder might comply with the new by-laws by hanging a 6 x 14 purlin to a 2 x 9 rafter, the absurdity of which must be apparent to everyone. Their case as an association rested upon practical requirements. They had the most practical proof which could be had that their sizes were abundantly adequate for the purpose, and could point to at least 80,000 out of the 105,000 houses built in Sheffield which were roofed with purlins in no case larger than those suggested. Why so greatly increase timbers which had been so abundantly proved to be sufficient? Further, they challenged any person to produce a house where the purlins had given way where they were of the sizes suggested by the association. The difference in cost between putting in the necessary timbers and the quite unnecessary sizes required by the schedule would be from £3 to £4 in the smaller houses, up to a much larger amount in the larger ones. This, in conjunction with other requirements, would mean an addition to the rents, which were already complained of in Sheffield as being too high. Indeed, as a city they were trying to encourage builders to build houses which were within the reach of persons of small income, but in this case it was proposed to add expense, and so increase the rent with unnecessary and burdensome timbers.

Mr. Cook followed, and quoted an instance under the County Council where plans had been objected to, and ultimately the sizes of timbers had been reduced. He referred to a building now being constructed with an 80ft. span, with no larger size of timber than 1½ x 11, 2ft. long, and when he added that this roof was selected in competition with a steel structure, they would see that it conclusively proved that it was not a question of weight, but of method of construction. Large sizes of timber also meant that they would require to be cut only from large trees, and this would still further increase the cost. He also wished to remind the Council that in recommending smaller sizes than those in the schedule, the builders' association could not be accused of supporting any selfish interest, as it was much to the advantage of most of them that the maximum sizes suggested should become operative, seeing that it would increase the value of the property already erected. Mr. Cook also pointed out that some of the sizes suggested would incur unnecessary waste and expense.

The chairman and Colonel Hughes, in reply, referred to the position in which the Council found themselves. The Committee, they pointed out, had adopted several of the suggestions of the Master Builders' Association, for which they thanked them, but in this matter of timber sizes they were not as a committee prepared to make such a great reduction in the sizes given them by experts and their own officials as the builders required. All they (the deputation) could do would be to have the matter raised in the Council, or at a subsequent stage to communicate their observation to the Local Government Board, which, the Chairman understood, had already intimated that they might be prepared to make some allowance in some of the sizes.

Heating Engineers and Plumbers.—The strike of operative plumbers at the Royal Hospital still continues. The vexed question of the line of demarcation to be drawn between the work of plumbers and heating engineers is still open, though the matter has been taken up since the June conference at Sheffield, by the local master plumbers, who have referred the question to their national association. That something may yet come out of the conference is shown by the meeting of the Executive Committee of the plumbers at Norwich on 12th inst., when it was decided that the matter be left in the hands of a special committee consisting of the President, and Messrs. Armitage, Beal, Hill, and Lightfoot. At that meeting Mr. Cawthorne, of Sheffield, was received, and the secretary was instructed to approach the general secretary of the U.O.P.A. suggesting a conference to consist of two representatives each of the Institute, the U.O.P.A., the Sheffield Masters' Association, and the Sheffield Operatives' Association, to discuss the matter in the hope of arriving at a friendly settlement.

Municipal Trading.—It was reported that the Committee of the association had sent a letter protesting against the proposal of the Electric Light Committee, contributing a sum of £25 towards the cost of an appeal by the Leicester Corporation restraining them from running an electric wiring and fittings department in connection with their electricity undertaking. On behalf of the association it was pointed out that the members of the Committee as ratepayers could not agree that the money of the ratepayers of Sheffield should be used for the purpose of assisting the Leicester Corporation to defend themselves against their own ratepayers in a system of trading which the courts had up to the present declared to be illegal. As a result, a letter had been received from the Corporation stating that the proposed contribution had been dropped.

Time Limit Penalties.—The case of three members of the association engaged on a Corporation job who had had penalties imposed on them for delay in completion was considered. The penalties were originally £47, but had been reduced by allowances to £25. The contractors held that they were not at fault, and could have completed within the stipulated time. Subsequently a deputation of the contractors met the Hospitals Committee of the City Council, and pointed out that it was unfair that they should be mulcted in penalties for delays over which they had no control. It was also their opinion, and the opinion of the association, that penalty clauses were only enforced when there was culpable negligence on the part of the contractor, of which no instance could be given in this case. After a lengthy discussion, however, the penalties had been confirmed by the Council.

Breaches of Working Rules.—An alleged breach of working rules was referred to the association by the operative masons, but the matter had been amicably adjusted, the secretary taking the opportunity of remarking that the relations existing between the association and all the operative societies were most amicable.

Building Trades Exhibition.—It was reported that the arrangements for the Building Trades Exhibition to be held at Sheffield in October were proceeding apace, and spaces were being rapidly booked. Members were asked to give all possible publicity to the exhibition, and free invitations would be extended to every builder, architect, plumber, and decorator within 50 miles of Sheffield.

Annual Excursion.—It was decided to hold the annual excursion in conjunction with the members of the Building Trades Exchange and Club, on Thursday, September 1st, the place chosen being the Dukeries, the party going by train to Worksop, and afterwards by coaches through Sherwood Forest, visiting all the places of interest.

Thos. Smith, Sec.

COMPLETE LIST OF CONTRACTS OPEN.

In this list are included, as a rule, only those contracts for which tenders are returnable about five days or longer after the date of this issue.

Unless expressly stated to the contrary, all deposits required for bills of quantities, etc., are returned on receipt of *bona-fide* tenders.

The words "Fair Wages Clause" inserted in certain paragraphs signify that persons tendering must conform to a fair wages clause in the Contract, which requires them to pay the rates of wages current in the district.

BUILDING.

Sept. 9-24. **HOO ST. WERBURGH (Kent).**—Erection of a new Council school, to accommodate 200 children, at Chattenden, in the parish of Hoo St. Werburgh, for the Kent Education Committee. Plans and specification, prepared by the Committee's Architect, W. H. Robinson, M.S.A., and form of contract may be inspected at the offices of the Committee. Names and addresses, accompanied by a deposit of £1, to be sent to the Secretary by Sept. 9. Tenders to be sent to Fras. W. Crook, Secretary, Caxton House, Westminster, S.W.

Sept. 10. **EPPING.**—Execution of (1) laying out cemetery, including surface drainage, the construction of roads and footpaths; (2) erection of gates and fences; (3) building of chapel and tool shed. Quantities will not be supplied, but each contractor will be given a copy of the plans and specifications on deposit of 5s. Applications should be sent by above date to G. J. Creed, Clerk of the Council, Epping.

Sept. 12. **EAST PRESTON.**—Building a wall at "The Clappers," Ferring; also laying a storm water drain at Durrington Lane, Durrington, for the R.D.C. Tenders to be sent to the Chairman of the Rural District Council, Board Room, East Preston.

Sept. 12. **HINDLEY (Lancs.).**—Erection of cart sheds in the stable yard, Cross Street, Hindley, for the U.D.C. Plans may be seen and quantities obtained on application to the Surveyor, Oswald P. Abbott, on deposit of £1 1s. Tenders to be delivered to Thomas Robey, Clerk, Council Offices, Hindley.

Sept. 12. **ABERTILLERY.**—Erection of 31 houses and construction of roads at Cwmtillery, in accordance with plans and specifications which may be seen on application to Lionel D. Lewis, Council's Engineer, King Street, Abertillery. Copies of specifications may be obtained on deposit of £1 1s. (by cheque, made payable to the Council). Tenders to be sent to William Gait, Clerk to the Council, Council Offices, Abertillery.

Sept. 12. **ST. HELENS.**—Erection of a new secondary school for boys in Cowley Hill Lane, St. Helens, for the Borough Education Committee. Plans and specifications may be inspected, and bills of quantities and conditions obtained, at the office of the architect, Frank S. Biram, George Street, St. Helens, on or before Aug. 22, on deposit of £1 1s. Tenders, addressed to the Chairman of the Finance and General Purposes Committee, must be delivered to Percival Sharp, Secretary for Education, Education Office, St. Helens.

Sept. 12. **PORTSMOUTH.**—Constructing, supplying, and maintaining in thorough repair for six months from the completion of the whole of the following works:—(1) Waiting room for visitors and bicycle store at the north-east entrance of the Town Hall, and (2) alterations and additions to the Borough Engineer's offices at the Town Hall, for the Corporation. Specifications, general conditions, and plans may be seen, and a form of tender obtained at the Borough Engineer's Office, Town Hall. Tenders to be sent to G. Hammond Etherton, Town Clerk, Town Hall, Portsmouth. Fair wages clause.

Sept. 13. **ABERPORTH (Wales).**—Erection of a residence at Aberporth, according to plans and specification which can be seen at the Step, Aberporth. Tenders are to be sent in to Capt. J. Davies, Step, Aberporth, R.S.O., Cardinganshire.

Sept. 13. **UPPERBY (Cumberland).**—Erection of new mixed school and for alteration and additions to infants' school, Upperby, for the Education Committee. Drawings and specifications at the office of the Architect, J. Forster, M.S.A., 13, Earl Street, Carlisle. Tenders to be delivered to C. Courtenay Hodgson, Secretary, The Courts, Carlisle.

Sept. 13. **TONYREFAIL.**—Alterations and repairs to Bethel Welsh Congregational Church, Tonyrefail, for the Trustees. Plans and specifications to be seen with R. S. Griffiths, M.S.A., Architect and Surveyor, Tonypandy, or with Stephen Evans, Bon Marche, Tonyrefail, to whom tenders should be delivered.

Sept. 13. **HELENSBURGH.**—Alterations and additions to Helensburgh post office, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work and not for separate trades. Drawings, specification, and a copy of the conditions and form of contract may be seen on application at the Post Office, Helensburgh. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, 3, Parliament Square, Edinburgh, on deposit of £1 1s. Tenders must be delivered to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Sept. 13. **ST. HELENS (Lancs.).**—Erection of a small power house near to Windle Smithies, for the Rainford Gas Co., for the Gas Committee. Plans and specifications may be copied upon application at the Gas Works Office, Warrington Old Road. Tenders to be in official envelope to be obtained upon application at the Gas Works Office. Fair wages clause.

Sept. 14. **EXETER.**—General reparation, painting, etc., to the Workhouse, Exeter, for the Guardians. Specifications may be seen and full particulars obtained at the office of the Architect, R. M. Challice, 14, Bedford Circus, Exeter. Tenders must be sent to Arthur Snell, Clerk to the Guardians, New Buildings, Castle Street.

Sept. 14. **CAMBRIDGE.**—Erection of a cottage in Albion Row, according to certain plans, specification, and drawings prepared by the Borough Surveyor, for the Corporation. Copy of plans and specification may be seen at the Office of the Surveyor, Guildhall, where further particulars, together with form of tender, may be obtained. Tenders should be sent to J. E. L. Whitehead, Town Clerk, Guildhall.

Sept. 14. **RATHDOWN.**—Erection of one single and five pairs of labourers' cottages, for the Rathdown No. 2 Rural District Council. Contractors may tender for all or part of above work, which must be completed within six months after they have been laid out by the Architect. Plans, specifications, and tender forms can be obtained from the Clerk to the R.D.C., Patrick Cunniam, Loughlinstown, on payment of 5s.

Sept. 14. **MARKET HARBOROUGH.**—Erection of new police court, superintendent's house, stables, and alterations to existing buildings, at Market Harborough, for the Leicestershire C.C. Bills of quantities and form of tender may be obtained on Aug. 31, from the County Architect and Engineer, S. Perkins Pick, F.R.I.B.A., 6, Millstone Lane, Leicester, on deposit of £3 3s. Tenders to be sent to W. J. Freer, Clerk to the Leicestershire County Council, 10, New Street, Leicester.

Sept. 14. **WAKEFIELD.**—Erection of new house and alterations to existing house and farm buildings at Bond Hill Ash Farm, Copmanthorpe, near York, for the West Riding Small Holdings and Allotments Committee. Plans may be seen and specifications with quantities obtained on application to the West Riding Architect, County Hall, Wakefield. A deposit of £1 must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield. Tenders to the Clerk of the County Council.

Sept. 15. **HURST (Berks.).**—Erection of small holding farm buildings at Church Farm, Hurst, for the Berkshire C.C. Small Holdings and Allotments Committee. Specifications, etc., may be obtained from the County Land Steward's Office, Assize Courts, Reading.

Sept. 15. **CHARNEY BASSETT.**—Erection of small holding farm buildings, and alterations and adaptation of existing farm buildings, for the Berkshire C.C. Small Holding and Allotments Committee. Specifications, etc., may be obtained from the County Land Steward's Office, Assize Courts, Reading, on deposit of £1 1s.

Sept. 15. **LONG SUTTON (Lincs.).**—Execution of improvement works and repairs upon the Long Sutton Market House. Specifications and plan can be seen at the office of W. H. H. Davis, Architect, 2, York Row, Wisbech, or with Mossop and Mossop, Clerks to the Market House Company, Long Sutton, Lincs., to whom tenders are to be sent.

Sept. 15. **LONDON, S.W. (Wandsworth).**—Erection of a new greenhouse and potting shed at Wandsworth cemetery, Magdalen Road, Wandsworth, for the Corporation. Form of contract, specification, and plan may be seen, and forms of tender obtained, at the Borough Engineer's office, 215, Balham High Road, S.W. Tenders must be delivered at the Council House, East Hill, Wandsworth. Fair wages clause.

Sept. 15. **LEYTONSTONE.**—Erection of Leytonstone Sorting Office, for the Commissioners of H.M. Works and Public Buildings. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to J. Rutherford, H.M. Office of Works, Carlisle Place, S.W. Bills of quantities and form of tender may be obtained at the undermentioned address on deposit of £1 1s. Tenders must be delivered to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Sept. 16. **TEWKESBURY.**—Alterations at the old buildings of the Tewkesbury Grammar School. Drawings and specifications can be inspected, and further particulars obtained from H. A. Badham, Secretary, Tewkesbury, to whom tenders are to be sent.

Sept. 16. **MINSKIP (Yorks.).**—Erection of proposed farmstead at Minskip, near Boroughbridge, for the West Riding Small Holdings and Allotments Committee. Plans may be seen and specifications with quantities obtained on application to the West Riding Architect, County Hall, Wakefield. £1 deposit must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield. Tenders to be sent to Francis Alvey Darwin, Clerk of the County Council, County Hall, Wakefield.

Sept. 17. **ANDOVER.**—Erection of a new post office at Tidworth Camp, Andover, for the Commissioners of H.M. Works and Public Buildings. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to E. Cropper, at 22, Carlisle Place, S.W., or to the Postmaster, Tidworth Camp Post Office. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Storey's Gate, London, S.W., on deposit of £1 1s., to which address tenders must be sent addressed to the Secretary.

Sept. 17. **PENGE.**—Additions and alterations to the offices at the Town Hall, Anerley Road, S.E., for the U.D.C. Drawings, specification, bills of quantities, and form of contract may be inspected at the office of the Surveyor to the Council, Town Hall, Anerley, S.E. Builders desirous of tendering must send at once their names and addresses to the Architect, H. W. Longdin, Town Hall, Anerley, together with deposit of £2 2s. Tenders to be delivered to C. W. Dommett, Clerk to the Council, Town Hall, Anerley Road, S.E.

Sept. 17. **EDENDERRY (Ireland).**—(a) Repairing thirty-six labourers' cottages; (b) repairing and putting in thorough working order pumps at Johnstown Bridge and Kilshanroe; (c) sinking wells and erecting pumps at Freagh, Clonkeen and Drehid, for the Edenderry U.D.C. When the wells shall have been sunk to a sufficient depth for the purpose, samples of water shall be taken therefrom and submitted for analysis, and pending instructions from Mr. H. R. Waters, C.E., after receipt of reports thereon, the works shall not be proceeded with. Specifications of the various works can be seen on application to H. R. Waters, C.E. Each tender must contain the names of two solvent securities willing to join in a bond with contractor (at his own expense) for the due performance of the contract. Forms of tender can be had on application to T. Humphrey F. Bor, Clerk of the Council, Boardroom, Edenderry, to whom tenders must be sent.

Sept. 19. **ROSCOMMON (Ireland).**—Erection of a new Crown post office at Roscommon. Plans and specification can be seen at the Post Office, Roscommon, and with H. Williams, Secretary, Office of Public Works, Dublin. Forms of tender and bills of quantities will be supplied on deposit of £1.

Sept. 19. **WHITEHAVEN.**—Erection of new bank premises in Lowther Street, Whitehaven, for the directors of the Bank of Whitehaven, Ltd. Contractors must send in their names to the architect not later than Sept. 1, accompanied by a deposit of £2 2s. Plans, specifications, and conditions of contract may be seen at the office of A. Huddart, Architect, 9, Lowther Street, Whitehaven, to whom tenders are to be sent.

Sept. 19. **WINCHESTER.**—Execution of alterations and heating apparatus to cells at the police station, for the C.C. Conditions of contract, and specification and other information at the offices of W. J. Taylor, County Surveyor, The Castle, Winchester, on deposit of £1 1s. Deposits must be made by cheque, payable to the Hants County Council. Tenders to be delivered to H. Barber, Clerk of the County Council, The Castle, Winchester.

Sept. 19. **SITTINGBOURNE (Kent).**—Erection of a temporary building at the County School for girls, Sittingbourne. for the Kent Education Committee. Plans and specifications, prepared by the Committee's architect, Wilfred H. Robinson, M.S.A., may be inspected at the office of the Committee, Caxton House, Westminster, S.W., or at the office of the Local Secretary, E. C. Pearcy, 45, High St., Sittingbourne. Tenders must be addressed to E. C. Pearcy, as above.

(Contracts continued on page xi.)

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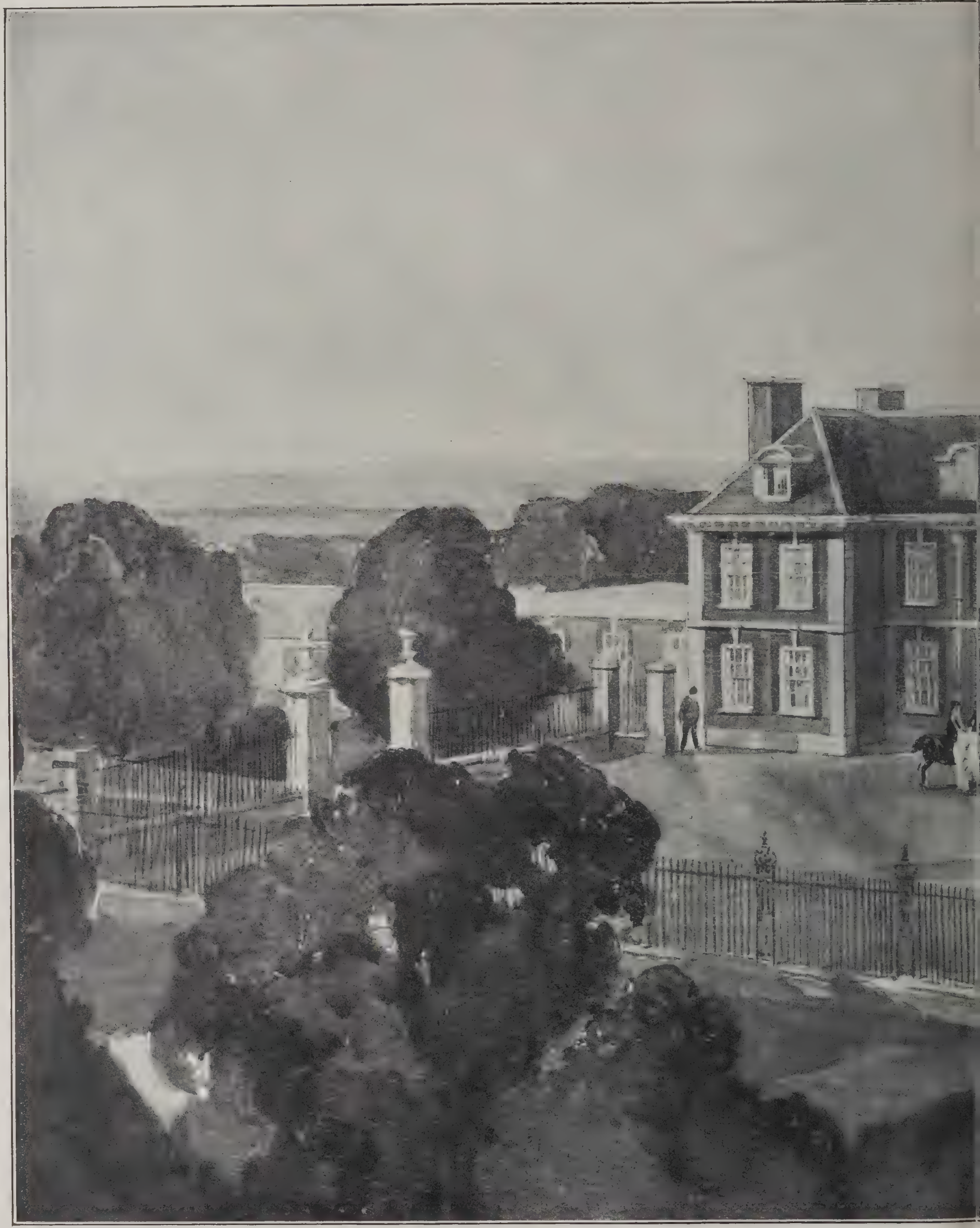
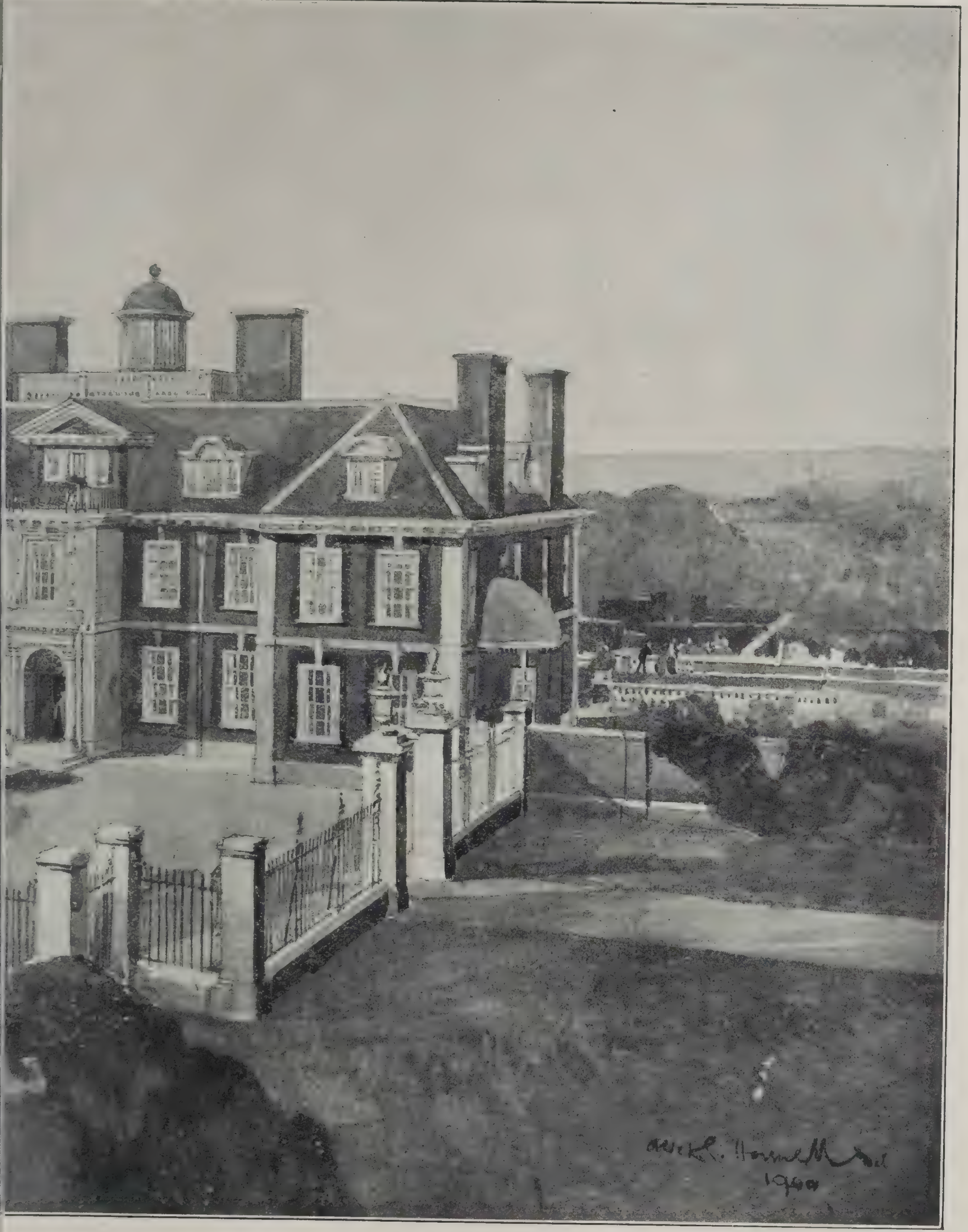
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *September 14th*, 1910.



Some photographs and plans of this house were given in our issue of J

ARDENRUN PLACE, BLINDLEY HEATH, SURR

Royal Academy Exhibition, 1910.



h, 1909. This fine drawing was exhibited at the Academy this year.

ERNEST NEWTON, F.R.I.B.A., ARCHITECT:

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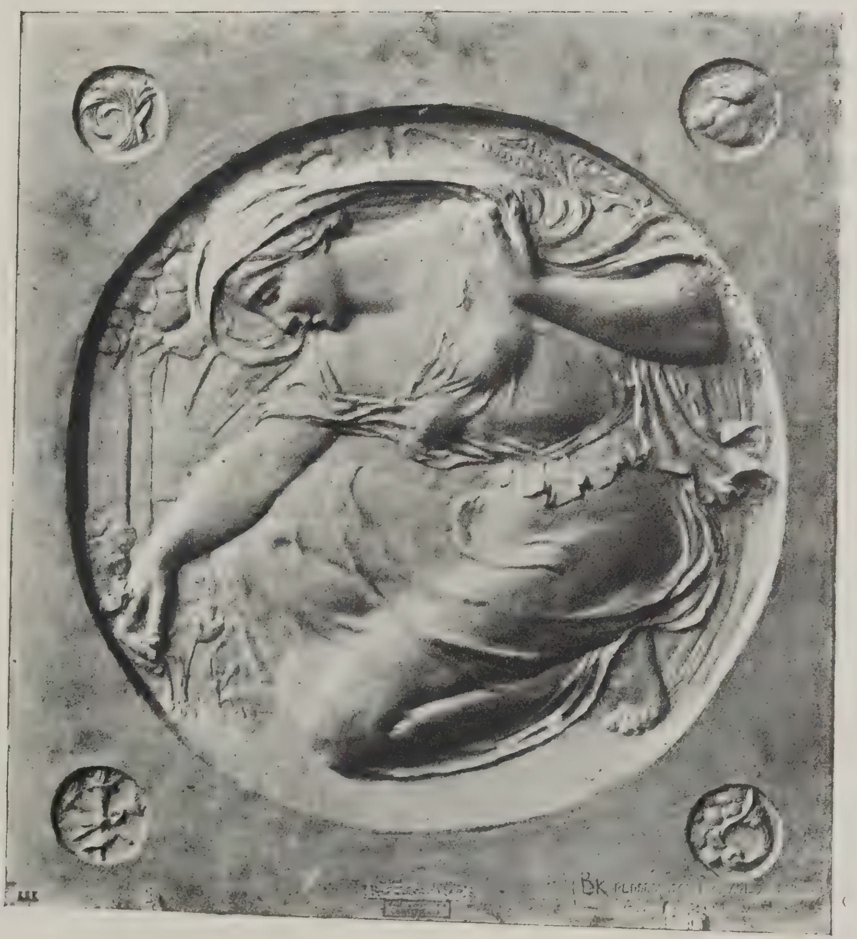
THE ARCHITECTS' &
BUILDERS' JOURNAL

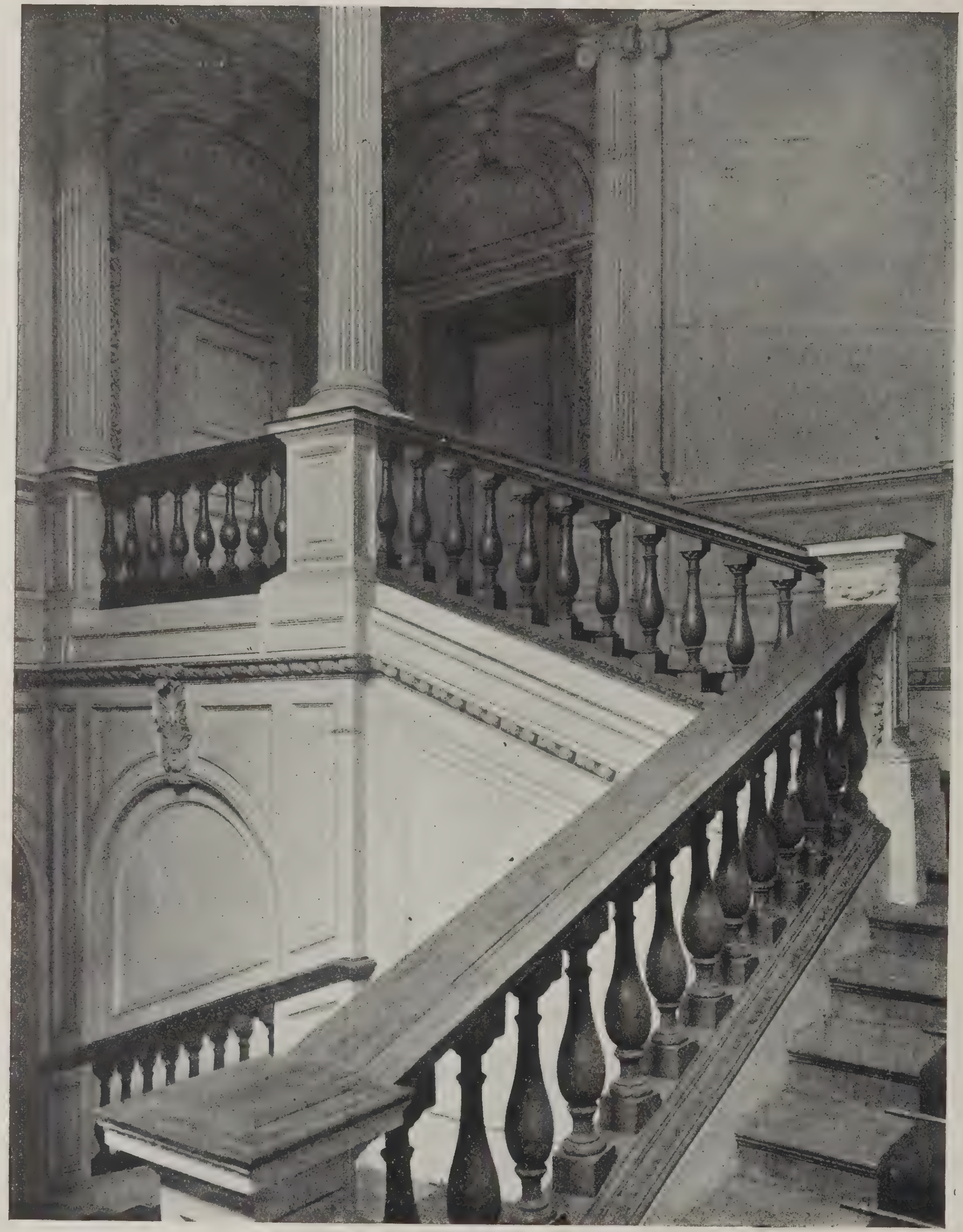
WEDNESDAY,
SEPTEMBER 14th, 1910.

Volume XXXII. No. 815.



A criticism of the works by students of various art and technical schools submitted in the National Competition this year (some of which are illustrated in this issue) was given in our number for August 10th.

NATIONAL COMPETITION EXHIBITION, 1910. MODELLED STUDY IN RELIEF OF A DRAPED FIGURE FROM LIFE SET IN A ROUNDEL. BY JOYCE A. REDDROP. AWARDED A NATIONAL BOOK PRIZE.



This staircase is one of the most beautiful in the United Kingdom. It is difficult to imagine anything giving an effect of greater spaciousness than Jones's genius contrived in this example. It is admirably adapted for the pageant of a richly dressed procession. Ashburnham House now forms part of Westminster School.

GENERAL VIEW OF STAIRCASE, ASHBURNHAM HOUSE, WESTMINSTER. INIGO JONES, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

SEPTEMBER 14th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 815.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Competition Trouble in the American Institute.

IN our issue of June 15th, we commented at some length upon the new code of competition regulations which the American Institute of Architects put into operation on March 30th last. We took occasion then to point out one or two important points in the American code which ought to be seriously considered by our own R.I.B.A. Council; in particular, "the decisive manner in which compliance with the ruling of the Institute as to Black-listed competitions is demanded from its members under pain of their conduct being banned as 'unprofessional'; and the view that the programme of a competition should be so drawn up as to constitute a contract between the promoters and the competitors." The American view (as expressed in the code) that open competitions are to be discouraged we entirely disagreed with; but in general we regarded the American code as a distinct and notable advance, and likely to produce better results for both architects and clients, if properly supported and adhered to by the Institute members. We were almost prepared to say that this was one of the things that they do better in the United States. Unfortunately the sense of loyalty to the leading professional Institute does not seem more pronounced in America than in the United Kingdom. It is a Fellow of the American Institute who attacks the whole code and points out the weak points of the regulations—weaknesses which are probably inherent to any scheme which aims at a higher code of ethics among men of a particular calling.

Incidentally his criticism reveals the fact that the chief competition evils existing over here seem equally prevalent on the other side of the Atlantic. Having obtained from our contemporary "The American Architect" an estimate of the total number of architects in the United States, he shows in a letter to that journal that only 18 per cent. of the practising architects in the United States are members of the A.I.A., leaving 82 per cent. as non-members. The ratio of R.I.B.A. members, as regards British architects generally, would probably be greater; but on general lines the situation is not very different, and the argument that this F.A.I.A. bases upon it is probably equally applicable here.

> "The 18 per cent.," he says, "may, of course, safely be called the most prominent architects, while for that very reason they, without doubt, engage least in competitions; probably more than half of them have business enough without desiring to enter into the very unattractive field of competitive effort where the history of expense and return has been an outlay for the architectural profession, as a whole, of more than double what the winning architect must earn after he has won. Here lies the greatest evil of the competitive system, which has come to be adopted for nearly all public buildings, churches, hospitals, hotels, banks, in an increasingly widening circle, until it has come to this that almost the only exception is the field of private residences and mercantile buildings. Would the remedy offered by the Standing Committee, viz., that a programme of competition must be approved by a committee from 18 per cent. of the architects else that 18 per cent. of the architects is debarred from taking part, could that ever cure the disease (if it is a disease) that afflicts the other 82 per cent. of practising architects? Would not the gambling spirit in the 82 per cent. be rather glad of improved chances by the proposed elimination from competition of 18 per cent. small though that percentage is?"

He then proceeds to criticise the principal remedy of the American Institute—the appointment of the Professional assessor. It will be remembered that this is the one point upon which the R.I.B.A. maintains absolute firmness; but the American critic would apparently dispense with assessors altogether. After instancing two or three cases that he considers unfavourable to professional referees, he proceeds:—

> The professional referee, like every architect, is educated on lines that become fixed, of what he likes and dislikes, and woe to the competitor who does not discover and work along those lines. This of itself should answer nine-tenths of the question: Shall there be a professional referee? But, after all, these are unimportant details. The main question is not how to call the righteous to repentance, nor yet, how this Standing Committee shall properly segregate the righteous (the 18 per cent. A.I.A. members are, in the main, such) and eliminate from their numbers any who differ from the committee's views by transgressing. No, the question for them is, how shall they become a power, for helpfulness, for the struggling 82 per cent. who unconsciously wrong one another and who are shamefully wronged by the public, in the monstrous methods of competition as they at present exist, putting upon architects a burden of losses that no other profession carries and that constantly saps our strength for really legitimate work.

He advises first that the committee dismiss their appeals to A.I.A. brethren. "The 18 per cent., or rather one-half of that, 9 per cent., is unimportant; what they do or abstain from doing, as to competition, matters little."

Secondly, he advises the committee to drop the professional referee, and to educate non-members and the general public in order that work on competitive studies may be reduced to a minimum. It would be a help to every architect in the land if the A.I.A. Standing Committee would start a campaign of education in issuing advice, by publications in every city, and by circulars, to limit competitive drawings to a scale of 1-16in. to the foot for preliminaries, and place the number of drawings at less than half of what is usually asked for. The rest of the letter is mainly occupied in disputing that it is unprofessional for members of the A.I.A. to enter what the writer terms "ordinary competitions," and concludes: "But the Standing Committee should consider carefully before they ask of A.I.A. members that they cut themselves off from business opportunities which those of highest standing have entered into in the past. And they certainly should not put any unfair penalty upon us who sustain an association that ought to be national in its membership and influence—but certainly is not so while its membership is only 18 per cent. of the architects."

This is bitter criticism for the A.I.A., though the writer places himself rather in a false position by attributing to a committee what was really the action, as the President, Mr. Pond, points out in a subsequent letter, of the whole Institute assembled in Convention. What the critic fails to appreciate, however, is that the American Institute have adopted a course—probably a self-sacrificing one—for the benefit of all architects in the United States, and for furthering the dignity of their art. As Mr. Pond points out:—

> Rates have no bearing in matters involving character and principles, so it is of small moment that the Institute members in the profession are to the non-Institute members in the ratio of 18 to

82. The existence of one righteous man, we are told, would have saved the great cities of Sodom and Gomorrah. If, however, ratios are for a moment to be considered, the value of the Institute may be likened to the cement in a mass of concrete; there is one part of cement to eight parts of other material in the standard aggregate, and it is that one part which gaves the great mass its strength and stability. It is for the loyal Institute member to maintain the integrity of this one small part.

Mr. Frank Miles Day, the Chairman of the Standing Committee on Competitions of the American Institute, also replies, pointing out that the code has been issued by the Institute itself, and adds:—

> Your correspondent seems to rest under the impression that nothing has been done to inform the public and architects in general as to the Institute's attitude. It may, therefore, be well to state that the Institute has issued 15,000 copies of the circular, sending them not only to its members and to architects who are not members, but to the public as represented by owners, editors, judges, educators, etc. The board feels justified in giving wide circulation to the document, but it does not assume to dictate ethics of practice to architects who are not members of the Institute. It has, however, in mind the advancement of the Institute ideals and the education of the profession and the public, not alone through the circular of advice, but through the medium of periodicals and technical journals, and it will welcome any serious suggestions tending to make its work effective either along these lines or otherwise.

Another correspondent points out that the critic in his 82 per cent. of non-members ignores the kindred bodies, the Architectural League of America, Chicago Architects' Business Association, Architectural League of New York, Beaux Arts Society, Society of Columbia University Architects, various architectural clubs, sketch clubs, etc. In many cases the principal officers of these societies are very active in the Institute's local Chapters, and as the societies are closely allied with the Chapters, they are very often the source from which the Chapter membership is drawn.

Into what seems to be a family quarrel of the American Institute we should hesitate to intrude, but for the fact that the circumstances disclosed, and the difficulties to be surmounted, are so entirely similar to those confronting us in this country. The task of convincing the general body of architects, either in the United States or here, that it is to their ultimate advantage to disregard the "business opportunities" presented by irregular competitions is a heavy task which both the British and American Institutes have undertaken. None the less, it is the only possible way in which to raise competition work out of the slough into which the cupidity of the general public and architects have thrust it. The education of the general public to a better appreciation of the art of architecture must none the less be accompanied by the work of educating architects to a higher sense of their own calling. The objections put forward by a F.A.I.A. have also been raised in this country. There is the same distrust of the leading members of the profession, who —because they participate but little in competition work— are suspected of want of sympathy with the difficulties and struggles of their less wealthy brethren; the same suspicion as to the single-mindedness and ability of assessors, manifested in this country by a growing demand for the jury system, in preference to the single assessor; the same feeling that certain assessors are influenced by designs which more or less play upon their own work; and the same erroneous notion that the leaders of the profession are sacrificing the rank and file to some quixotic standard of ethics.

It is difficult, in these days, when individual opinion attains undue recognition over collective wisdom, to establish the fact that the higher code of competition ethics put forward by the British and American Institutes is in reality but evidence of ordinary common sense and material foresight. F.A.I.A., in saying that "professional conditions are not made by the say-so of one committee—but rather by the growth of years in what has been standard professional practice as developed by the demands of the public and the concessions of a profession to those demands," gives away his case. It is because both here and in America the public during the "growth of years" has made more and more outrageous demands upon the architects, and the architects, by a policy of *laissez-faire*, have been "conceding" them, that competitions have come into such bad odour; and it is both right and natural that both Institutes should take a bold stand to check the evil. F.A.I.A.'s suggestion that competition studies or drawings should be reduced to a minimum is well worth consideration and support; but as the general public could hardly understand the rough sketches and plans that would be perfectly intelligible to the trained eye, it seems to us that the only valuable part of his criticism completely stultifies his demand for the abolition of the professional assessor.

The Outlook for Copyright.

MR. JOHN W. SIMPSON, in answer to adverse critics of the Copyright Bill provisions for the protection of architects, has presented a brief restatement of the case for copyright. Mr. Voysey's somewhat transcendental views he regards as "an apology for the thief in art," and "the music pirate, the forger of bronzes and engravings, and other like miscreants, would gladly avail themselves of such a plea." This is all very well as a debating point, but is, we think, hardly a legitimate extension of Mr. Voysey's thesis. Pirates, forgers, and other miscreants did not, so far as we can see, come into Mr. Voysey's purview. Mr. Simpson, however, is more clearly justified in saying that "In truth, the cause of healthy art is not served by high-flown talk about the artist being degraded by the thought of reward. The whole range of artistic biography shows the spur of need and the hope of reward—either in gold pieces or in admiration, or in both—to be necessary for the artistic temperament to produce its finest work." This matter, indeed, is so far past argument that we are disposed to take Mr. Voysey's pronouncement upon it as the elephant took the horse-drench—hyperbolically. Of course the artist must live; and to affect to despise the means of livelihood is one way of disregarding the artistic accomplishment of seeing life simply, steadily, and sanely, and completely. Had not Shakespeare a delicately sensitive artistic temperament? Yet he was an excellent man of business. Mr. Simpson repeats an argument that he has previously put forward—that for the purposes of protection "the practice of the art of sculpture will be found almost exactly analogous to that of architecture," and, he adds, "We ask that the latter should enjoy equal and similar privileges and be placed on the same footing as its two sister arts." But, except in matters of the most primitive simplicity, analogies are seldom so perfect as to render their introduction useful to the contention which they are intended to support, and it would not surprise us to find someone pointing out vital points of disparity between architecture and sculpture. For one thing, the sculptor has more freedom of scope for invention and composition. A strong feature of Mr. Simpson's case is the reference to Continental example. Copyright in architecture seems, on this showing, to work very well in France, Belgium, and Denmark. Mr. Buxton's Bill, however, Mr. Simpson acknowledges to be "evidently far from satisfactory as it stands," and to "require very careful consideration by the Royal Institute." Architecture, indeed, occupies but a small place in it, and no doubt its case has been greatly prejudiced by the minority report of the commission, as well as by the copious douches of cold water that have been thrown upon it by most of the architects who have taken part in the discussion in the public press. All these, being men of original talent and of high standing in the profession, are among those who might be expected to feel most acutely the need of protection from piracy; and yet most of them appear to laugh the idea to scorn. The outlook for the Bill, therefore—or, rather, for such of it as concerns architecture, is distinctly discouraging. Even supposing a greater number of equally eminent men were now to come forward on the other side, we should then have to face the serious and probably fatal objection that architects are not making anything like a united demand for a measure of protection towards which, we must confess, we had thought the great majority to be favourably inclined.

NOTES AND NEWS.

Some Curious Facts About Paris.

Mr. John N. Raphael gives some curious facts about Paris to the "Daily Express." The longest street in the town is the Rue de Vaugirard, which runs from the Odéon Theatre to the Porte de Versailles. This street is over three miles in length. The shortest street is the Rue des Degrés, which runs from the Rue de Cléry to the Rue Beauregard (near the Boulevard Poissonière). It is exactly seven yards long and four yards wide. It has another peculiarity. Although it is right in the centre of Paris, it has neither doors nor windows. The Rue des Degrés has houses in it. The Rue Baltard has none; and it is forty yards in breadth. This street runs across the Central Markets (Halles) from the Rue Berger to the Rue Rambuteau. The highest house in Paris is one of nine storeys, in the Passage Radziwill. The house with the most people in it is No. 129, Faubourg du Temple. Although it has only one number in one street, this house consists of twelve separate buildings with communicating doors, has four courtyards, and thirteen staircases.

Inspection of Dwellings.

In the Housing and Town Planning Act of 1909 provision was made for inspection, by local authorities, for the purpose of ascertaining whether any dwelling-houses in the district were in a state "so dangerous or injurious to health as to be unfit for human habitation." The Local Government Board issued last week an order making regulations with respect to the manner in which the inspection is to be carried out. The order directs that authorities are to prepare a list of dwelling-houses in the case of which the Medical Officer of Health considers that "early inspection" is "desirable," and a "thorough inspection" is to be made of these in regard to specified points. These include the arrangements for preventing contamination of the water supply, sanitary appliances, drainage, the condition of the house in regard to light, air, dampness, and cleanliness, arrangements for the deposit of refuse, etc., the "existence of any room unfit for human habitation," and any other defects which might render the dwelling-house injurious to the health of an inhabitant. It is directed that the inspection shall be carried out by the Medical Officer of Health, or under his supervision and direction, and that records shall be kept showing the results of each inspection and any action which may be taken in consequence. Further, the Medical Officer is to include an account of the work done in this connection in his annual report. The authority are to take the records into consideration at each meeting, but may delegate this duty to a committee.

The Difficulties of Preserving Buildings.

The difficulties which beset the path of the antiquarian and art-lover are exemplified by an instance at Limpsfield. The business of the post office there has outgrown its present quarters, and the Postmaster-General has called upon the Sub-postmaster for the district to find the necessary increased accommodation. The postmaster, who carries on also the business of a baker, proposes to pull down an old timbered building (of which he is the freeholder), which is one of the ornaments of the village, and to build new premises on the site. Mr. A. Leveson-Gower, who happens to be staying in the village, has invoked the aid of the Surrey Archæological Society. The Postmaster-General, to whom representations have been made, replies that he has no right to interfere, the responsibility resting solely with the village postmaster. All postmasters of this class receive an inclusive salary, and must themselves provide the premises in which the postal business is carried on. Mr. Berry, the Limpsfield postmaster, maintains that there is no alternative to his proposal. The new office must be in a central position, and in the High Street. He has heard, vaguely, that another site could be obtained by pulling down another building higher up the street, but Mr. Berry contends that this would involve turning out the tenant, and probably banishing him from the district. Small houses in Limpsfield are so scarce that the tenant might not be able to obtain another. "To me," Mr. Berry explains, "it seems better to pull down an old stable—however picturesque it may be—than to turn folk out of house and home. At the same time I shall be only too glad to consider another site if it can be found, for I quite realise the objections to my present scheme. If the post office can be built elsewhere I will undertake to turn the old stable into a pretty cottage, such as it was, I believe, many years ago." Although the building in question is of no great historical interest, says the "Daily News," its demolition would do injury to the quaint village street in which it stands. Probably dating from the early part of the seventeenth century, it forms an integral part of a picturesque group of old buildings near the famous mediæval house known to hundreds of antiquaries as "Detillens." It is of two storeys, constructed of oak timbers, filled with red brickwork, and is surmounted by a roof of weather-worn red tiles, forming a high-pitched gable towards the street. Its neighbour on the right, with a projecting gabled upper storey and massive oak cornerpost, is of an even greater age, having been erected at the end of the fifteenth or beginning of the sixteenth century.

The Union Parliament Buildings, South Africa.

By the end of the present month, the home of the Union Parliament of South Africa is to be ready for occupation, after alterations and additions which have cost between £95,000 and £100,000. The old Cape Assembly Chamber was 66ft. by 36ft.; the new is 70ft. by 44ft., which is very little inferior to the 72ft. by 45ft. of the British House of Commons. Seats with desks will be provided for 131 members, while the total number of seats is 190. The new wing is, of course, directly connected with the old building, a continuous corridor running from the new hall to the vestibule of the old building, and serving as a lounge. What was formerly the Speaker's room and library now becomes a smoking-room, while the old Assembly Chamber is made into a banqueting hall, the old Press Gallery being adapted as a sort of minstrels' gallery. All the other galleries have been abolished, but there is a new Press Gallery over the Speaker's chair. A roof garden may be expected to fulfil some of the purposes for which the terrace of the Westminster House is renowned.

The Scottish System of Contract: Building Owner's Bitter Cry.

Correspondence on the question of introducing into Scotland the single-contractor system that is common in England has become very voluminous, and continues to be very one-sided, nearly every writer protesting vigorously against the introduction of the English system. The only writer on the other side remarks, indeed, that "all the other letters have evidently been written by people who are interested in keeping matters as they are." This particular correspondent, on the other hand, seems disposed to welcome a change. As a house-owner in Glasgow, he has had, under the present system, two experiences which he has no desire to repeat. In one case, his building cost twenty-five per cent. more than the architect's estimate on a very large operation. In the second adventure, an extensive alteration exceeded the estimate by seventy-five per cent. From this bitter, and we should hope exceptional, experience, he infers, we trust quite unfairly, that "the reason why a house-owner cannot make an overhead contract for a building complete is not far to seek. The present system suits everyone admirably except the proprietor who has to pay the piper. The architect who controls all the work, and the measurer who when it is completed measures it up for him, are both as a rule paid by a percentage on costs; and, without imputing bad motives, it is perfectly evident that this arrangement cannot lead to economy in cost." He thinks, therefore, that "if house-owners consisted of practical men, and were able to compare notes with each other, the present system would soon be knocked over." He further complains that under the present system he has "found from bitter experience that it is impossible to fix the blame for excessive cost, delay, in completing work, faulty design, or any other matter, on anyone under the present system in Glasgow," and he hopes that other sufferers will come forward and give their experience. So far as can be judged from internal evidence—the signatures to the letters revealing nothing to the contrary—architects have taken no part in the controversy, feeling, no doubt, that they have but little concern in it; but now that, "without imputing bad motives," this correspondent has cast mud at the profession, perhaps some of them will be provoked to retort. Yet it is difficult to see that their intervention could serve any good purpose. The "motives" which this gentleman would rather insinuate than impute are, in every aspect, beneath contempt. Their imputation, or at least their insinuation, seems to be the solace of the owner whose building bill turns out to be bigger than he anticipated; and there is a well-marked type of building owner whose frugal mind is disposed to cheapen everything—even probity. This, however, is but a side issue. The main question is, Which of the two systems is likely to commend itself as preferable to the building owner? If the innovation commends itself to him, there seems to be no possibility of resisting it. For this is a matter in which, after all (to adopt the correspondent's well-worn metaphor), the man who pays the piper can really call the tune.

The Late Mr. Holman Hunt.

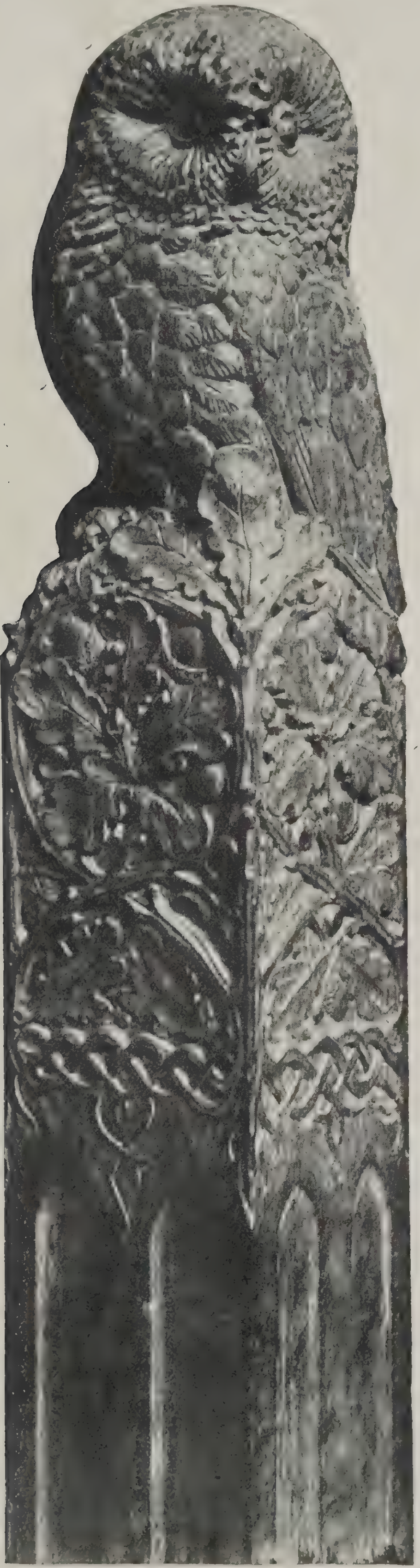
The death of Mr. Holman Hunt, at the age of 83, removes from among us a painter in regard to whose work it is difficult to express an opinion without opening up questions which concern the whole theory of the objects of the art of painting itself. In regard to the methods of painting, we are faced with the question, Is it the object of the art to give a vivid impression of a scene, subordinating minor details to the total effect, or is it the object to give absolute and laboured realistic imitation of fact? As to the philosophy of painting, is its object to give pleasure, to add to the intellectual enjoyments of life, or to convey a moral lesson? In regard to the second question, the general object of Holman Hunt's paintings was undoubtedly a moral one. In the words of an eminent French critic, M. de la Sizeranne, he was "la conscience fait peintre"; the expression exactly describes him. One exquisite little picture, "The Strayed Sheep," which will probably last to be the gem of collections for many generations, is an exception; an example of sheer beauty of scene and execution, painted for itself alone. Otherwise, all his pictures have a religious or a moral motive. And he was the embodiment of conscience in regard to execution also. No detail was to be slighted, passed over, or even subordinated; no amount of labour was too great for arriving at perfection of representation. Of pictures conceived and executed in this spirit one thing at any rate is certain—that they will not be commonplace. Hunt's pictures are few, but every one of them seems the embodiment of a problem to which the artist's whole mind has gone. Among the small band who, under the title (almost accidentally imposed and adopted) of the "Pre-Raphaelite Brotherhood," made a determined stand against careless and sloppy execution in painting, Hunt alone stuck to his colours to the last day of his artistic life. In his way he was a hero in art, thinking no study and no application too great, if he could attain the perfection he strove after. Such an artist is not to be lightly judged. We may think that he was in part a failure, but it is a kind of failure better than many facile successes, for it holds a high example before us. The truth seems to be that he was a great painter injured more or less by adherence to a mistaken ideal. In attempting to paint every detail of a scene he neglected the principle which Millet so decisively stated as the gospel of his art—that whatever detail or accompaniment does not assist the main object of a picture is a positive injury to it; and he forgot, too, that Nature, with far more infinite detail than any painter can reproduce, has her own secret of harmonising all into a consistent whole. Thus, in "The Hireling Shepherd," the wonderful painting of the vegetation in the dry ditch under the trees may be worth the labour bestowed on it, but the defiant realism in every detail of the countenances and costume of the two figures only results in giving the effect of a coarse blowsiness which destroys the sentiment of the scene; just as, again, in "The Awakened Conscience," a picture with a powerful moral, we are almost shocked by the hard and minute painting of the man's head. His greatest work is the "Finding in the Temple," where the central group is one of the most masterly things in art; and those who have seen the study for it, with the skeletons of the three figures drawn first, then the nude outline added, and finally the lines of the habiliments, can alone realise what conscientious pains went to make it so. In his "Valentine and Sylvia," the expression and attitude of Julia, embarrassed in her boy's dress, and expecting immediate discovery, renders the figure one of the greatest successes in modern painting. On the other hand, when he painted a realistic study of a young Syrian for the figure of Christ in "The Shadow of the Cross," he did not seem to realise that this brought us no nearer to an adequate conception of the sacred personality; imagination was wanted for that, and Hunt had only realism to bring, and an exaggerated emphasis of anatomy which is almost unpleasant to the eye; the kneeling figure of the Virgin is the only beautiful thing in the picture. The "Light of the World" is a remarkable work in a pictorial sense, especially in colour, in which it is almost an inspiration; but the allegorical element in it is really rather childish. Next to the "Finding in the Temple," the "Isabella" and the "Lady of Shalott" are perhaps his greatest and most successful works. Whatever may be thought of the mistakes of some of his paintings, and of his manner of regarding art, he will always be remembered as a painter far above the common level, and it is likely that his best works will increase in value and repute as time goes on. They are among the few modern paintings of which it can be said that each has left its mark behind it, and which show something of the concentration and intensity of purpose of the great masters of the early ages of painting.

Manchester Infirmary Site Proposals.

The proposal, now practically settled, to erect a new art gallery and free library on the site of the old infirmary at Manchester is still meeting with considerable opposition. The alternative suggestion was to build a new Royal Exchange. A correspondent of the "Manchester Courier" sets forth two calculations by which the latter scheme is shown to benefit the ratepayers to the extent of £70,000 a year. According to these figures the Corporation would obtain per annum from present members of the Exchange £40,000, from Raw Cotton Exchange members £10,000, from the Corporation for underground tramway offices £2,000, and increase in income of the Manchester Ship Canal £35,000. (We are not clear how the last figure is arrived at; it seems problematical.) This makes a total income of £87,000, and deducting £17,000 for interest and sinking fund charges on land and building, a net income of £70,000 is obtained. His figures for the art gallery and library scheme show a capital expenditure of £2,383,000, made up as follows:—New building (land given in) £333,000, furnishing the library, £50,000, and furnishing the art gallery "would cost anything up to £2,000,000." We wonder the last item was not made £5,000,000 or £10,000,000, and with equal reason. But with a capital expenditure worked up to £2,383,000 this correspondent triumphantly concludes that the ratepayers would be saddled with a burden of £100,000 a year. From this we conclude that Manchester has no art treasures, no public-spirited collectors, and that loan-collections are unknown. But, after all, it is now the silly season.

Light on the New Land Duties.

Mr. J. Davidson, secretary of the Yorkshire Federation of Building Trades Employers, has prepared, for the benefit of members, some exceedingly useful observations on the Finance (1909-10) Act, 1910. "Owing to the ambiguity of some of the language expressed on Form 4, and also in the Act itself," Mr. Davidson premises, "varying opinions have been expressed as to the meaning and intentions of some of the provisions." Accordingly, "in order that no owner may be unduly prejudiced." Mr. Davidson has summarised the new duties leviable under the Act, and has put forward a series of admirable hints for the guidance and protection of those whose interests they affect. He points out the several exemptions which should receive careful consideration, such as those relating to small properties in the occupation of the owners; and he emphasises the desirability of studying closely the clauses as to provisional valuations, and of appealing against unsatisfactory assessments; and in particular he points out that "Builders who paid a deposit for the purchase of certain land to be conveyed or possession to be taken in plots as required should safeguard their interests under this section, especially as increment duty is probably only payable (Section 1 (a)) in pursuance of any contract made *after* the commencement of this Act." Other valuable tips refer to official errors or default, to the date of service or notice and return of Form 4, to the undesirability of seeking the assistance of valuation officers of other Government officials, and to certain important points that should be taken into consideration with respect both to high and low valuations. Mr. Davidson is a trained expert in such matters, and the members of the Federation of which he is secretary are to be congratulated on the guidance he places at their disposal in the leaflet under notice—a copy of which, we understand, has been forwarded to the secretaries of affiliated associations.



NATIONAL COMPETITION EXHIBITION, 1910:
CARVED WOOD FINIAL FOR A BEDPOST. BY W. B. BINNS.
AWARDED A SILVER MEDAL.

Conciliation and Arbitration Boards.

In a Parliamentary Buff-book that has just been issued by the Board of Trade—the "Second Report on Rules of Voluntary Conciliation and Arbitration Boards and Joint Committees"—Mr. G. R. Askwith explains that although less than three years has elapsed since the publication of the first report on this subject, a second edition has been rendered advisable by the extensive developments which have taken place in the machinery for conciliation in several trades, including the building trades, and by the important alterations which have been made in the rules of a number of boards already in existence at the date of the previous report. The number of permanent boards and joint committees known by the department to be in existence in the various trades at the present time is 262, and it is estimated that nearly two million workpeople are covered by all these agencies for conciliation. There are also fourteen district boards, which afford mediation of a general character, and are not confined to any particular trade, and two boards whose work is restricted to questions affecting employees of co-operative societies. In most of the principal trades of the kingdom, joint meetings of representatives of employers and workpeople are now the generally recognised method of settling disputes or adjusting differences in regard to questions which might otherwise lead to a cessation of work. It is noted that, as readers of this Journal are particularly well aware, national schemes of conciliation are in existence for all the principal branches of industry. The rules of most of the boards provide that no suspension of work shall be brought about by either party until the matter in dispute has been discussed; and some boards, in the event of a stoppage of work having occurred, refuse to consider the disputed question until work has been resumed, while others impose penalties for a stoppage of work, as also for the breach of any award given by the board or its umpire.

As many as 153 boards and committees provide "full automatic machinery" for the avoidance of deadlock, where the parties are equally divided, the difficulty being met by reference, in the final instance, either to (1) an arbitrator appointed by the Board of Trade, or (2) a permanent neutral chairman, arbitrator, or umpire, or (3) an arbitrator or umpire appointed *ad hoc*, or (4) three arbitrators, with decision by majority. In 81 cases, most of which occur under the National Building Trades Conciliation Scheme, full machinery for the settlement of disputes is provided, but can only be put into operation by the mutual consent of the parties. That there is room for improvement in this machinery, builders are well aware; and such collections of miscellaneous data as those given in the Buff-book under notice may perhaps be profitably studied with a view to further improvement or evolution.

NEWS IN BRIEF.

At a meeting of the Council of the Dublin Industrial Development Association on September 5, the prospects of reopening the granite quarries in the Burtonport district of Donegal were discussed. The quarries, which comprise deposits of grey and red granite covering 70 square miles, have been closed over ten years through want of working capital. There are ample facilities for easy transit, and labour in the district is cheap.

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The Local Government Board has decided to hold inquiries into proposed expenditure by public bodies as follows:—Sewerage and sewage disposal works and plant.—Merthyr Tydfil Borough Council, £1,050 (September 14). Street improvements, etc.—Weymouth and Melcombe Regis Borough Council, £4,920 (September 13); Carlton Urban District Council, £1,250 (September 16). Various.—Wilmslow Urban District Council, £2,500 for fire station, etc. (September 15); Bridport Borough Council, £3,600 for workmen's dwellings (September 14); Portsmouth Borough Council, £24,000 for electric lighting (September 17).

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A Runic cross in light Cornish granite is being erected in Quinton Road, Coventry, within a quarter of a mile of the railway station, to the memory of the Coventry martyrs of the sixteenth century. The cost, about £200, has been defrayed by public subscription.

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The War Department has agreed to give a site on high land east of Dover Castle, for the erection of a memorial to the late Hon. C. S. Rolls, whose historic flight to France and back started at this spot. The Dover Corporation will erect a Rolls memorial in Guilford Lawn, facing the sea, to correspond with that erected to Captain Webb on Clarence Lawn.

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Mr. Francis Healey, architect, of Bradford, died there on September 5, at the age of 69. Mr. Healey had a large practice in ecclesiastical work, one of his earliest works, in conjunction with his father, being All Saints' Church, Bradford. Similarly, Mr. Healey had a share in the restoration of the Bradford Parish Church, over ten years ago, and more recently in the erection of the churches of St. Columba and St. Oswald. Among other church buildings in which, with his brother, he was concerned were St. John's, Great Horton; St. Luke's, Manningham; St. Michael's, City Road; St. Barnabas's, Heaton; St. Bartholomew's, Bowling, and St. Augustine's, Otley Road. The Synagogue in Rowland Street was built from their plans, and they designed the Eccleshill Congregational Chapel, the new St. Peter's Church, Shipley; Thornton Church, St. Luke's, Harrogate; Tockwith Church, near York; Worsborough Church, near Barnsley; Otley Congregational Chapel, Matlock Bank Church, Haworth Church (restoration), Steeton Church, Milton Chapel, Huddersfield; St. Andrew's, Yeadon; Harden Church, and the Leeds Exchange. He was also the architect for the Victoria Hall, Queensbury; Littlemoor, the residence of Colonel H. A. Foster; Egton Lodge, near Whitby; and the residence of Mr. R. J. Foster at Stockeld Park, near Wetherby.

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Mr. Hall Caine has unveiled, at Blackpool, a Lancashire county memorial to the late Samuel Laycock, the Lancashire dialect writer. The memorial consisted of a life-size oil painting by Mr. S. Lawson Booth, and a tablet referring to Laycock's connection with the county as a self-educated son of the people, and to the fact that he was born at Marsden, near Huddersfield, in 1826.

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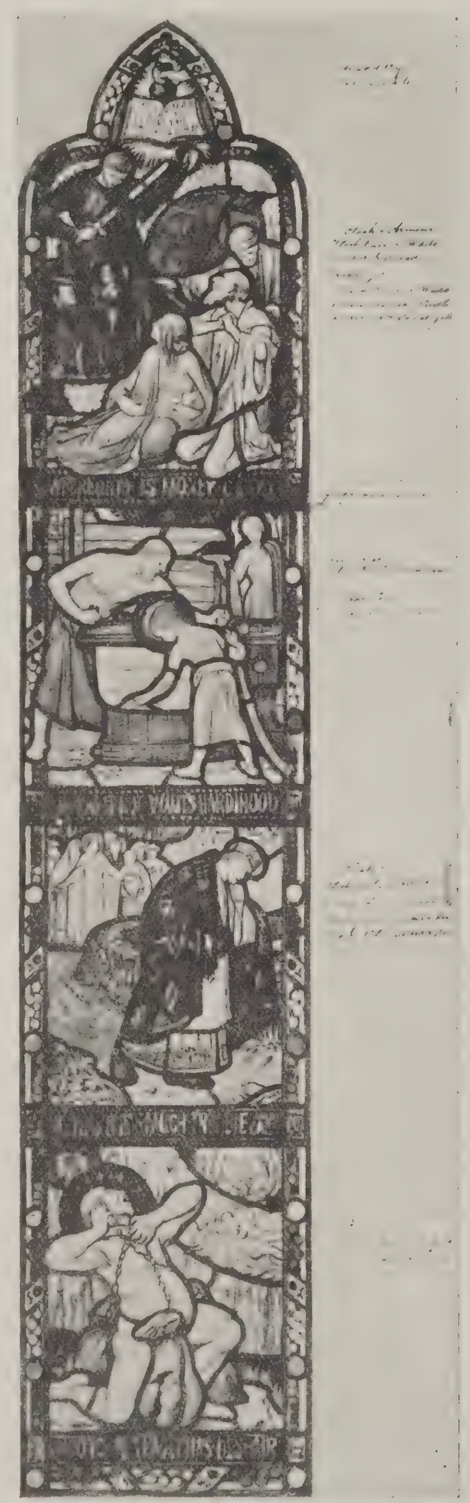
The Salle des Fêtes at the Brussels Exhibition has been allotted to the British exhibitors who were burnt out a few weeks ago. The work of conversion was entered upon with extraordinary vigour. Orders for new show-cases were placed with several firms, who, working at high pressure, undertook to complete their contracts between the 7th and 10th of the present month, and an army of carpenters and painters was sent over from England. The interior of the Salle, which was formerly used for conferences, concerts, and similar functions, has had to be considerably modified to meet the new conditions. For example, the flooring was formerly arranged in three rising stages, and has now been reduced to a general level; and several additional doorways have been formed. A writer in the "Daily Telegraph" claims that "the whole reconstructed section is a monument to British courage, energy, and resource, in time of crisis."



NATIONAL COMPETITION EXHIBITION, 1910: DESIGN FOR STAINED GLASS.

BY EDWARD RIDLEY.

AWARDED A GOLD MEDAL.

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The Lord Mayor of London has added the following names to the Mansion House Committee of the Fund for providing a memorial in London of the late King:—Alderman Sir Walter Vaughan Morgan, Sir Henry Burdett, Sir Frederick Low, K.C., M.P., the Hon. Joseph Martin, M.P., the Prime Warden of the Goldsmiths' Company, and Dr. R. J. Collie, Consulting Medical Officer to the London County Council and the Metropolitan Water Board.

* * *

The new sewage purification works constructed for Prescot (Lancs.) by Messrs. Taylor, Wallin, and Taylor, of Newcastle, which were formally opened by the Hon. Arthur Stanley, M.P., on August 31, were begun two years ago and completed in the early part of this year. The filter beds, which are 7ft. 6in. in depth and have a total area of 2,143 square yards, are designed to take 28 gallons per square yard. The sludge is buried in trenches, the area of land for this purpose being sufficient to last for three years before it will be necessary to go over the same ground again. The effluent from the first filters is nearly equal to the standard required by the Mersey and Irwell River Board, and the final effluent contains but one-quarter of the impurities allowed by that standard.

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Tenders for the supply and erection of the steel superstructure of the new bridge to be erected over the St. Lawrence at Quebec are to be submitted to the Canadian Department of Railways and Canals by October 1. It is understood that two or three of the principal German engineering companies will unite in submitting a joint tender, and that three of the leading American and two of the Canadian bridge-building firms also intend to compete. In Great Britain a tender is to be submitted by the Cleveland Bridge and Engineering Company, of Darlington, in association with the Metropolitan Amalgamated Railway Carriage and Wagon Company, of Birmingham. These companies propose to establish a large bridge and engineering works in Canada, and they have recently formed a new syndicate, which has been registered at Montreal under the title of the British Empire Bridge Company, with a capital of £1,000,000.

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The late Sir Francis Seymour-Haden's antique furniture is to be sold by auction early next month at Alresford, Hants, by Messrs. Knight, Frank, and Rutley.

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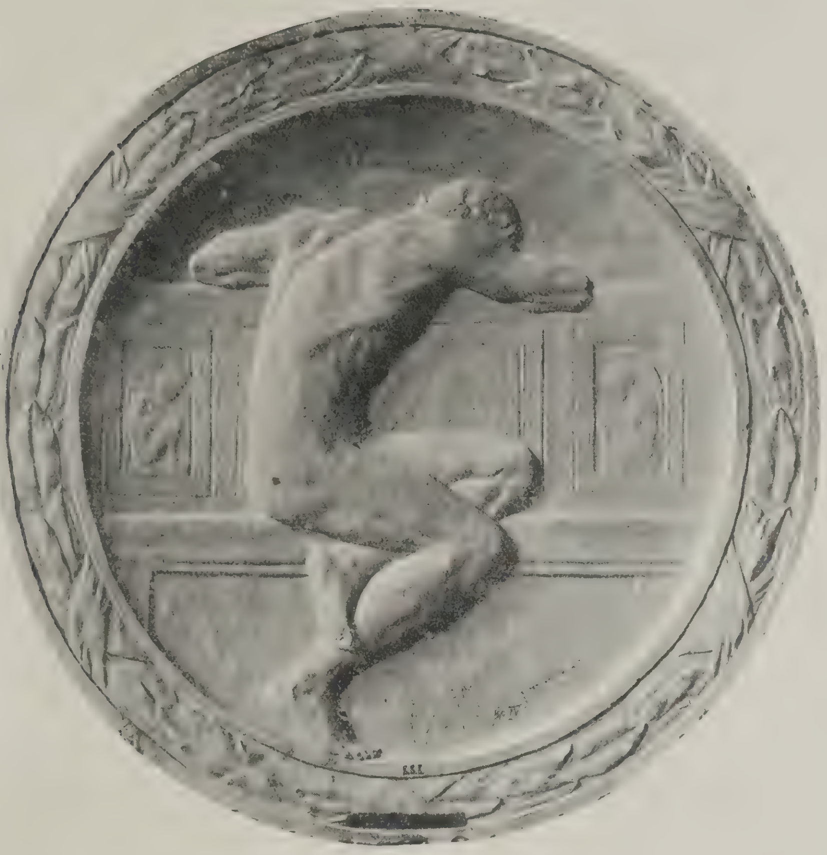
During the work of restoration at Morton House, Hatfield, which is now being carried out under the supervision of Mr. Winter Rose, architect, for Mr. F. W. Speaight, there has just come to light an ancient oak roof that for several centuries has been covered with lath and plaster; several coins of James the First's period have also been found.



NATIONAL COMPETITION EXHIBITION, 1910: MODELLED PANEL.

BY ROSIE BAUERKELLER. AWARDED A BRONZE MEDAL.

For designs for the new university buildings at Moscow, for Chanievsky University, the sum of 1,040 francs is offered for each of five selected designs. The elevations, etc., are to be delivered by October 1, 1910, and the detail drawings by January 20, 1911.

* * *

In a competition for a new police barracks (caserne de gendarmerie) at Gannat, in the department of l'Allier, the following awards have been made: 1 (execution of the work), M. Gilbert Bonnet, Vichy; 2 (premium of 600 francs), M. Eugène Giraud, Moulins; 3 (premium of 400 francs), M. Griffet-Lacarin, Vichy.

* * *

The calendar of the Glasgow and West of Scotland Technical College, which was noticed in last week's issue, contains particulars of a newly instituted diploma course in building for day students. In this course, Professor Gourlay informs us, the standard set is a high one, as students before entering the diploma course require to pass an entrance examination in general education equivalent to that to the Scottish Universities. The object is to set before the young men who aspire to be master tradesmen or clerks of works, a course including a sound scientific and technical training which will thoroughly qualify them for co-operation with architects in the erection of buildings. For evening students there are junior and senior certificate courses of three and five years' duration respectively. The College classes are all advanced ones, because elementary work is taught in continuation schools, which are attended by students before they enter the College.

Interesting details concerning the revenue and expenditure of the Bridge House Estates of the City Corporation, out of which the four City bridges are maintained, and were originally built, are given in the Chamberlain of London's annual accounts of the City for 1909. The total income for the year was £152,974, of which rents and quit rents were responsible for £149,018. The cost of maintenance of the bridges was as follows:—Tower Bridge, £15,585; Blackfriars Bridge, £1,207; London Bridge, £1,494; Southwark Bridge, £989. The City police were paid £2,000 for watching the bridges, and a sum of £1,450 was paid for the hire of a steam tug to assist vessels in navigating the Tower Bridge. Strangely enough, although the Tower Bridge is much narrower than its older neighbours, the cost of cleaning it is much heavier, being £1,400, against £750 each for London and Blackfriars Bridges. In the matter of lighting, the City's newest bridge also led the way, this item costing £1,134 for the Tower Bridge, as against £228 for London Bridge, £249 for Blackfriars Bridge, and £157 for Southwark Bridge.

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The Garden Cities and Town Planning Association, 31 and 32, Birkbeck Bank Chambers, Holborn, is prepared to arrange for lectures, with or without lantern slides, in any part of the country, illustrating the progress of the Town Planning movement at home and abroad and the great development in the adoption of Garden City principles. A number of well-known authorities on Town Planning generally and upon the Town Planning Act of last year have consented to lecture for the Association, and arrangements are now being made for the winter months.

CORRESPONDENCE.

Duties of a Clerk of Works.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—The following was sent in answer to a Building Committee who wished me to define the duties of a Clerk of Works:—

To assist in setting out all the work, and to check all the dimensions.

To keep a diary in which he makes notes of the weather, the number of men employed, and materials delivered, and to send a copy of the diary to the architects every Monday.

To check and sign time-sheets for all work not included in the contract.

To see that only the materials specified are used, and in their proper quantities, and that the workmen are thoroughly competent.

To see that the builder orders all materials in ample time to ensure punctual delivery.

To keep the architects informed of every difficulty that is encountered, and to draw their attention to any discrepancy that there may be between the quantities, the small scale drawings, and the ¼in. scale drawings, and the full sizes, and to see that the sub-contractors and other firms employed have proper facilities for carrying on their work.

A Clerk of Works should visit the builder's yard about once a fortnight, and see the joinery before it is framed up and primed.

Perhaps some of your readers would care to add to or criticise the list. The question is one that is constantly made to architects. G.

Sound-proofing Partitions and Floors.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I shall be obliged if you will publish the following exposition of a difficulty I have met with—in order, if possible, to elicit from your readers an explanation or a cure that any of them can recommend from their own experience. I recently erected a hollow partition between two bedrooms, consisting of steel angle-iron uprights, one to each face of partition, connected together with steel cross pieces, upon which was metallic lathing. This was covered on both sides with a quick-setting plaster. The result is excellent as construction, but the partition is far more pervious to sound than any ordinary wood stud and lath and plaster partition, and even more so than a solid 2in. single thickness partition of a similar metallic structure.

I also constructed two floors—a ground floor above a basement storey, and a first floor. These were of wooden joists resting on iron girders and the walls, and with metallic lathing suspended well below the wooden joists by steel hangers and grounds. In this case, again, the ceilings were coated with a quick-setting plaster. The result is a floor extremely pervious to sound in both cases. Now, I believed that in both the partition and the floors I was following the method of comparative disconnection of the two surfaces which has been over and over again recommended as being the best method of sound-proofing, and far better than any form of pugging. I therefore omitted pugging. Even now, after filling the partition with sawdust, it is not much better. I shall be grateful for any comments on this trouble.

W. B. HOPKINS, A.R.I.B.A.

97, High Street,
Berkhamsted.

TOWN PLANNING NOTES.

A New Road, West Hartlepool. The Borough Engineer of West Hartlepool has drawn up a scheme for a new direct road between that town and Middlesbrough. Though the two towns are only 7¾ miles apart in a straight line, the nearest distance by rail is 17 miles; by road 12½ miles with some bad gradients, awkward corners, etc. He proposes, therefore, to construct a new road of a length of about 5½ miles, commencing at the southern end of Seaton Carew, skirting the west side of the golf links, crossing Greatham Creek, and effecting a junction with an existing partially constructed roadway formed by the Tees Conservancy Commissioners, which is at present practically unused and grown over with grass. Thence the traffic would be taken along the existing thoroughfare to the transporter bridge. The scheme would involve entirely new road construction over 3½ miles, and the widening and improving of the existing roadway over two miles. The plan provides for a centre footpath 9ft. in width; on the east side of the footpath a road for motor and light fast traffic 24ft. in width; and on the west side of the footpath a road for heavy slow traffic 22ft. in width. This gives a width for highway purposes of 55ft. The plan further shows on the westernmost side of the footpath a width of 14ft. reserved for light railway purposes, making a total width of land to be acquired of 69ft. Mr. Dennis states that there are no engineering difficulties to be encountered, and for purposes of traction the conditions are ideal, the gradient of the roadway being practically level for its whole length. The estimated cost of the work is approximately £47,000 or £50,000.

The Housing Act at Washington. The Chester-le-Street R.D. Council has been requested by the Washington Parish Council to adopt Part III. of the Housing of the Working Classes Act. The Chester-le-Street Authority, having already appointed a special committee to deal with this subject, referred the matter to it.

Co-partnership Housing. The Co-Partnership Housing Council report that since 1903, when the only co-partnership housing scheme in existence was at Ealing, and the cash value of the land and buildings in the possession of the Ealing tenants was £10,237, 13 other schemes have been started, there being three at Hampstead and one each at Garden City (Letchworth), Sevenoaks, Leicester, Manchester, Harborne, Fallings Park, Stoke-on-Trent, Derwentwater, and Sealand, the total area of land in the possession of these societies being 652 acres, on which it is intended to build 6,595 houses at a total cost of £2,105,990, of which about one-fourth had been expended at the end of the last financial year.

Proposed Garden Suburb, Haslemere. The rector, Rev. G. H. Aitken, foreshadows in the Parish Magazine a housing scheme at Haslemere. He says: "What exact form the scheme will take and on what system the cottages will be built are not yet decided. What has seemed to be needed for a long time is something in the nature of a little garden suburb, not too large, to fit in with the general proportions of the town, and with cottages pleasantly built, surrounded by small gardens, and standing at a rent which is not beyond the wages which prevail in this district."

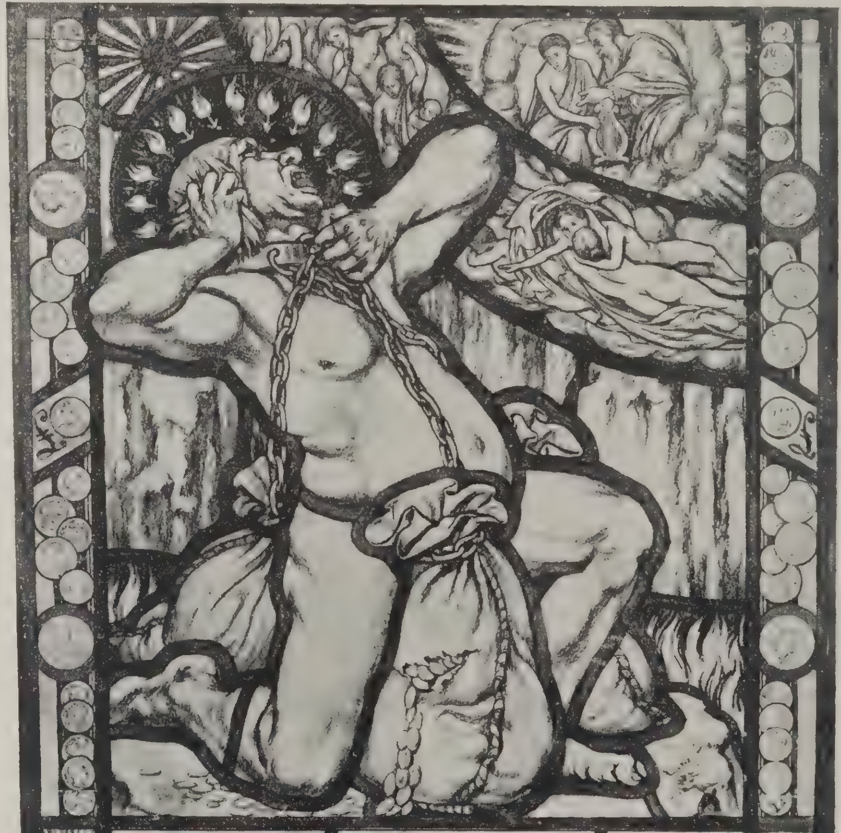
Brent Garden Village. The main feature of the new garden village at Finchley is the system of co-operative housekeeping to be inaugurated there. Brent Lodge, which stands on the estate, is to be preserved, and used as a central dining hall and clubhouse. The catering department will be managed by an experienced chef, and tenants who wish to avoid the trouble of cooking their own meals may have them provided at the central hall or sent to their own homes. Mrs. Melvin, the secretary, announced to a meeting of subscribers and friends that applications had already been made for 40 or 50 flats, and capital had been coming in at the rate of £1,000 a month. The arrangements were all complete, and it only remained now for the necessary capital to be subscribed. The estate to be purchased provides 24 acres of land, upon which houses and flats at rentals varying from £35 to £60 a year are to be erected.

The Preservation of Borrowdale. Mr. H. D. Rawnsley and Mr. Nigel Bond announce that the purchase money for Borrowdale Estate has been raised. The number of donors is 450, of which one gave £147, three £100, three £50, five £25, 25 more than one acre, 101 one acre, and the rest sums varying from £5 to 1s. Amongst the donors of acres were friends to the movement in America, who remembered the beauty of Borrowdale; the public schools and staffs of Harrow, Winchester, Rugby, and Sedbergh also gave acres. The Princess Louise set an example in the purchase of 13 acres of Grange Fell as a memorial to the late King. Many reasons have conspired to make it a peculiarly difficult time to raise money for such a purpose, and the greater, therefore, is the honour to those who have determined to help to preserve for the nation in the heart of this northern home for health, recreation, and thought, one of the most beautiful bits of our Lakeland scenery.

SOCIETIES' REPORTS.

L.C.C. School of Building.

The prospectus of the London County Council School of Building, Ferndale Road, Brixton, S.W., is a stout pamphlet of forty-four pages, in which are set forth in detail the growing activities of this seemingly prosperous institution. The studies are arranged in three sections:—(1) Trades classes; (2) building construction and allied subjects; and (3) architecture and drawing. In the first section, all the usual trade subjects are taught; in the second, the "allied subjects" include book-keeping, estimating, office routine, the law of easements, chemistry, and physics of building materials, land surveying, mathematics, and, as stated in our "Concrete and Steel Section," the new subject of reinforced concrete, in which lectures will be given by Mr. H. Kempton Dyson on Tuesday and Friday evenings. The Director of Architecture is Professor Beresford Pite, F.R.I.B.A., and the Principal of the school is Mr. H. W. Richards.


Who once has had it has despair

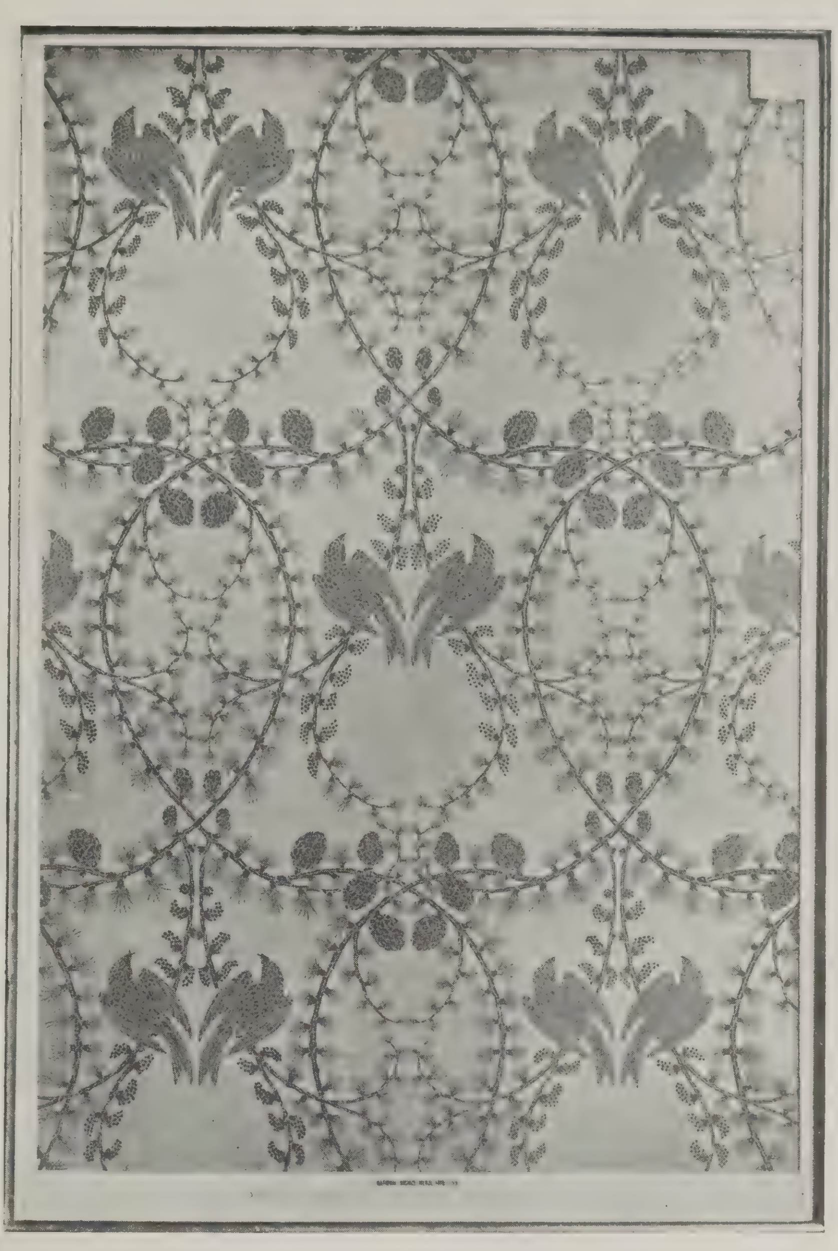
NATIONAL COMPETITION EXHIBITION, 1910: DETAIL OF DESIGN FOR STAINED GLASS. BY EDWARD RIDLEY. AWARDED A GOLD MEDAL.

MAGAZINES & REVIEWS.

The only article in the "Art Journal" which bears on design as distinct from pictures is that by Mr. Holmer on "Hedgerows in Late Summer," one of the "Nature Study" series, with illustrations by Miss Augusta Cullis. These are foreground studies of leaves and sprigs, and are full of suggestion for decorative design.

The "Burlington" contains a reproduction of an interesting sketch by Rembrandt, in the print-room at Berlin, which is supposed to be a view of London with old St. Paul's in the centre. There seems to be no record of Rembrandt having visited London, but a comparison of the outline of the building with Hollar's well-known view of old St. Paul's seems to render it probable that it is the same building. The spire had been destroyed or taken down at this time; the tower only is shown, with a square finish. Another drawing of old St. Paul's, of the school of Rembrandt, is reproduced from a Vienna collection; in this case there can be no doubt of the subject, though the artist, whoever he was, has got into trouble with his perspective in putting in the transept gable. The reproduction of the two sketches is at all events an interesting addition to our illustrations of mediæval St. Paul's.

The "Architectural Record" (New York) gives a long and fully illustrated article to the New York Public Library, of which Messrs. Carrère and Hastings are the architects. This is a Classic building of very sumptuous design in all its interior details, planned on symmetrical lines, with an immense general reading-room on the third floor at the back of the building, divided across the middle by two parallel columned screens of woodwork, of fine design, which form a kind of central vestibule and distribution room. The architects, we are told, purposely kept this main reading-room at the back and out of sight, because they recognised that a monumental architectural effect could not be consistent with the provision of large window space, and perhaps its position on the third floor was also influenced by a desire for a better light than could be obtained below; but as far as we can understand the plans, which are not very well reproduced, the main reading-room would seem to be rather difficult of access from the street. Otherwise, the plan seems a very good one. The main staircase is very dignified and spacious; the principal front, towards Fifth Avenue, is treated with a Corinthian engaged order the whole height of the building, with a sumptuous cornice; the details of this part seem very good in their conventional style, though the grouping of the front as a whole is not impressive, the pedimented end pavilions being rather weakly treated. The article describes this as "the most important building erected since the American architectural revival began." We do not exactly understand where that "revival" counts from, unless it is from the time when everything in American architecture became French. In that case the New York Library no doubt is typical. It seems rather a pity that nothing more original could be done for the front than the conventional engaged Classic order. Mr. Montgomery Schuyler's article on "The Architecture of American Colleges" is continued. The dates put to the illustrations render them rather amusing landmarks of the changes of architectural taste, which till recent years seem to have followed those of England pretty closely. Girard College (1833) is an octastyle temple façade; Logan Hall (1874) is Gothic in the manner of the late Mr. Waterhouse; in the buildings of the last decade of the century we come to a quieter collegiate Gothic with mullioned windows; and so on.

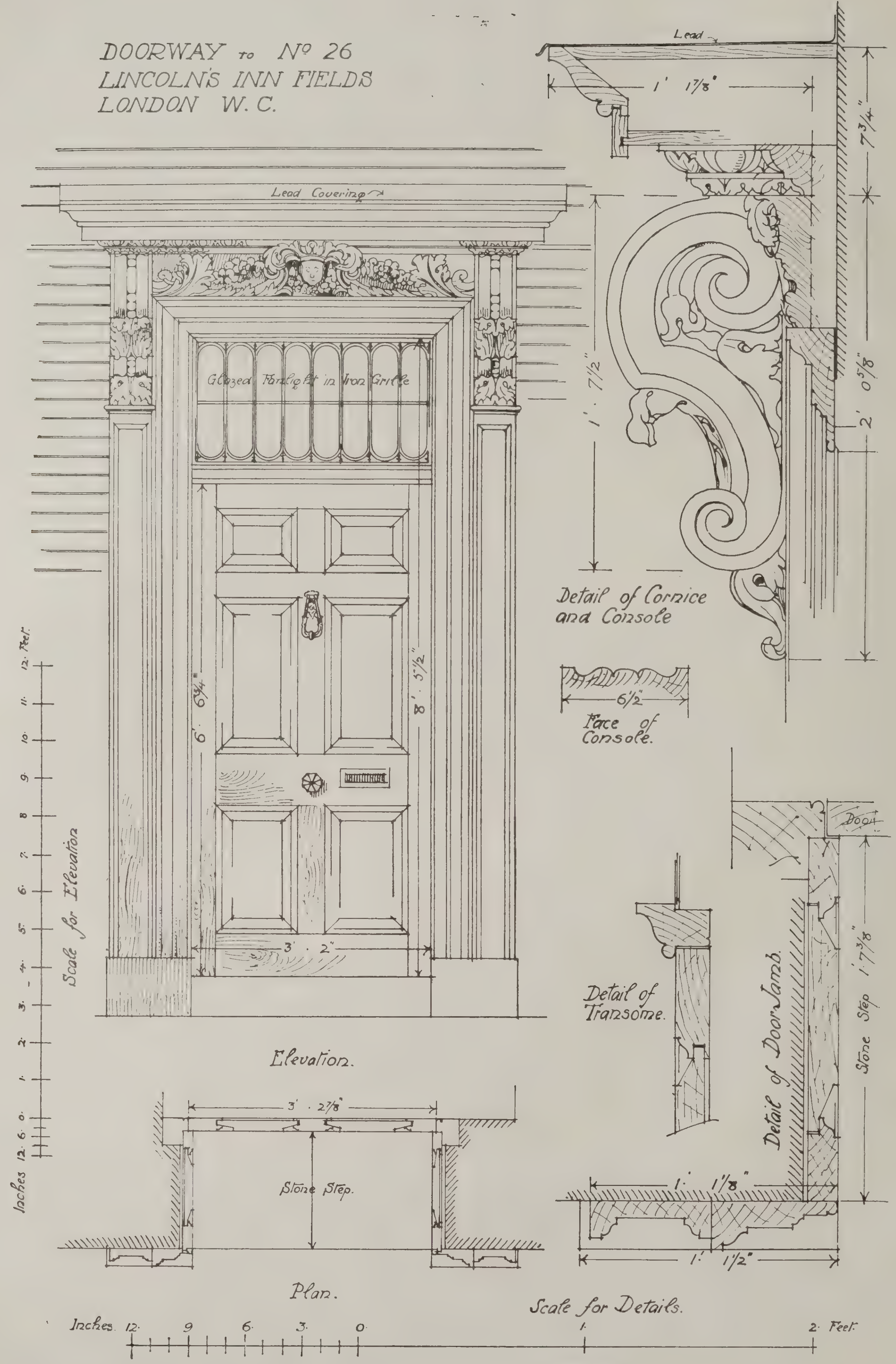


NATIONAL COMPETITION EXHIBITION, 1910. DESIGN FOR PRINTED COTTON-HANGING. BY LUCY MACARTHUR. AWARDED A BRONZE MEDAL.

"Scribner" contains, under the title "The Canal Builders," an account of a visit to the works of the Panama Canal. It is so crammed with American operatives' slang (being mostly in the form of reported conversations with the men), that a good deal of the detail is not very intelligible to the ordinary reader; but one may gather from it that work in the way of excavating by steam-shovels, blasting with dynamite, and laying immense masses of concrete, is really going forward on a great scale, and that those concerned in directing the undertaking mean to carry it through, though no one can yet say when the end of it will be in sight. It may be gathered also that the work is carried on a good deal in that careless and happy-go-lucky fashion which has led to so many accidents on American railways, and that several disastrous premature dynamite explosions have accounted for a good many lives. One can hardly imagine such avoidable accidents happening under the rule of an English contractor. Under "The Field of Art" are some observations on "Contemporary Architectural Sculpture in Colour," which appears to be attracting a good deal of attention among American architects, chiefly in consequence of the extensive employment of terracotta as a covering for steel structure, and the opportunities thus afforded for reviving the art of Della Robbia. Three buildings are mentioned as having been recently decorated in this manner; a church, an opera house, and an hotel:—

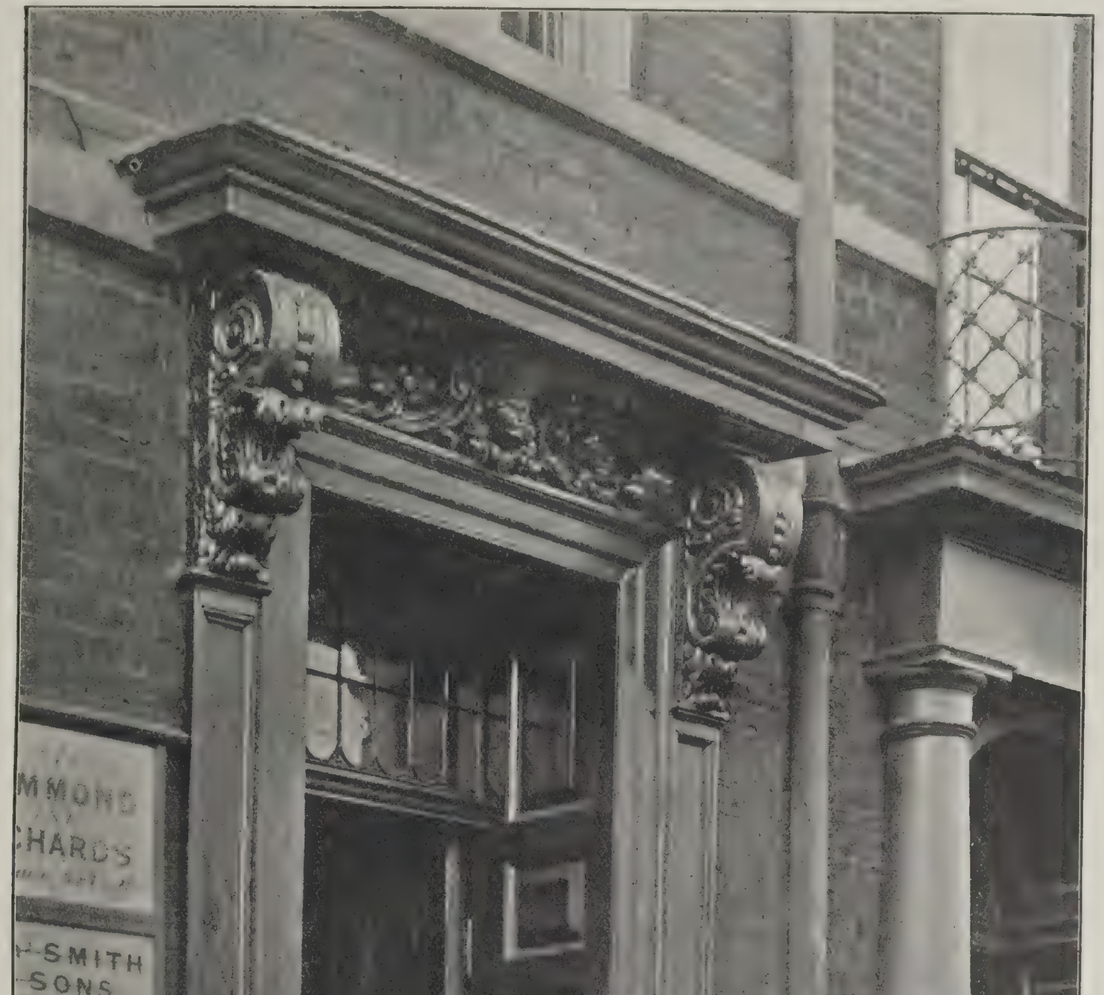
> "In the simpler colour schemes adopted, the arrangement of white figures on a blue ground is frequently maintained to-day, as in the pediment of Dr. Parkhurst's Church, Madison Square in this city. In the panels of the Boston Opera House, representing Music, Drama, and Dancing, this blue takes on a greenish tinge. In the large medallions and reliefs on the façade of the new Vanderbilt hotel, in this city, now in process of construction, the colour is more delicate, the figures being white and the background a delicate cream colour. But for all this work, sculptural and purely architectural, the number of colours, it is claimed, can be indefinitely increased.

An illustration of the church pediment is given. Apparently the church is a stone building; what would be the effect of the highly coloured pediment sculpture in such a case seems rather doubtful. But the subject is of considerable interest to modern architects.



DOORWAY TO Nº 26
LINCOLN'S INN FIELDS
LONDON W. C.

MEASURED AND DRAWN BY J. Lᴸ BERRY



The West Central district of London abounds in examples of eighteenth century doorways. The above is a good specimen, though marred by the glossy varnish on the woodwork. The consoles in particular are very bold in design and execution.

DOORWAY TO NO. 26, LINCOLN'S INN FIELDS, LONDON.

ROYAL SANITARY INSTITUTE CONGRESS.

The Health Exhibition.

The Royal Sanitary Institute Health Exhibition at Brighton, which was opened on September 5th, and remains open until September 14th, comprises about 70 stalls. Among the most noteworthy from our particular point of view are the following:—John Gilkes and Sons, Ltd., decorators' merchants, North Street, Brighton, whose elegant stand, with correctly proportioned Ionic pilasters, was designed by Mr. W. C. F. Gillam, M.S.A., of Westminster and Brighton. They showed wall-papers and decorative materials, and were awarded a bronze medal for "Tekko," a non-fading and washable wall-covering of brilliant colouring, and another for the Birge leather papers. The Horsfall Destructor Co., Pershore (silver medal); Goddard, Massey, and Warner, Ltd., Nottingham (silver medal for an improved steam disinfector); Thomas Parsons and Sons, varnish and enamel manufacturers, Long Acre and Mitcham, who showed their Endelline enamel and other decorative and sanitary preparations; Ronuk, Ltd., London, Manchester, and Portslade, floor staining and polishing preparations; Sussex Portland Cement Co., Ltd. (silver medal for educational value of exhibit); Cakebread, Robey and Co., Ltd. (bronze medal for magnet lockfast joint, and another for Stevens's barrel locks, of which a description has been already given in this journal). Carter and Co., Ltd., Poole, Dorset, and London, show tiles, mosaics, terra-cotta, etc., and receive a bronze medal for their leadless glaze ware. The British Sanitary Co., Glasgow, are awarded a silver medal for their self-acting earth-closet, and the Eagle range (Eagle Range Co., London and Birmingham) receives a similar award.

The Cable System of Heating.

An exhibit of exceptional interest is that by Messrs. J. F. Phillips and Son, of 21, Old Queen Street, Westminster, also of Brighton and Liverpool, of Barker's Cable system vacuum hot-water heating. This system has been already described in the journal, but its principal features may be again usefully summarised. The cardinal principle of the system is that circulation is obtained not by driving or propulsion, but by suction, which draws or aspirates the water round the system at a very high velocity. The chief agency in obtaining this effect is called the thermo-syphonizer. An automatically controlled valve sprays water into a heating chamber, where it is heated by the admission of low-pressure steam or vapour at or below atmospheric pressure, when the condensation of the steam causes a powerful suction on the return pipe. After being heated, the water is forced by silent steam pressure up to a tank at a higher level than the apparatus, and is thence conducted (through the flow-pipe) to the radiators, through which a powerful circulation of hot water is maintained. The temperature remains constant to the degree to which it is set by the simple adjustment of a regulating lever, by means of which it is placed under complete control. No pumps are used, and as regards the laying of the pipes the system is absolutely independent of levels or gradients. The pipes can be fixed at any level and bent in any direction, as demonstrated at the exhibition, where a length of flexible pipe is contorted into elliptical loops, and tied into slip-knots, without the least detriment to the circulation. We thus get the very important advantage that the system can be applied without structural alterations. At the Brighton pavilion, about 1,000ft. of piping has been laid without the slightest interference with the structure. Smaller pipes are required than those necessary in ordinary systems; and any number of detached buildings can be heated and supplied with hot water from one apparatus, without excavations for boilers or pipes. The Cable system has been successfully installed in many parts of the country; and among the more important buildings for which it has been adopted are the Royal Aquarium at Brighton; Royal Portsmouth Hospital (two installations fitted, and a third under consideration); British Motor Cab Co.'s Garage, Pimlico; Messrs. Pratt Bros.' extensive shops, showrooms, workshops, and offices, High Road, Streatham, S.W.; scarlet fever pavilion at the Borough Hospital, Brighton; and at many other hospitals, churches, schools, factories, and private residences. The installation at the Royal Sanitary Institute Exhibition has received the Institute's highest award, the silver medal. Messrs. Phillips also exhibit (for the first time) the "Perfecta" or "Warm Wall" system of warming and ventilating, in which there is direct radiation from the surface of a wall, in which the apparatus (including a humidifier) is concealed. To this invention we hope to be able to refer more fully on a future occasion.

The Congress.

The 25th annual Congress of the Royal Sanitary Institute was opened at Brighton on Monday, September 5, when delegates attended from the following bodies:—Colonial and Foreign Governments, 3; Government Departments, 4; County Councils, 18; Borough Councils, 45; Metropolitan Boroughs, 4; Boroughs, Urban District Councils, or Sanitary Authorities, 80; Rural District Councils, 9; Port Sanitary Authorities and others, 6; Education Authorities, 9; Societies, Universities, Colleges, etc., 51. The Royal Institute of British Architects, the Society of Architects, the Surveyors' Institution, the Institution of Heating and Ventilating Engineers, and the Incorporated Society of Municipal and County Engineers were amongst the bodies represented. The Hon. Sir John A. Cockburn, K.C.M.G., was President of the Congress, and delivered the inaugural address on Monday evening.

Town Planning.

On Tuesday a joint Conference of engineers and surveyors to county and other sanitary authorities and medical officers of health was held under the chairmanship of Mr. P. H. Palmer, M.Inst.C.E. (Borough Engineer, Hastings). In his inaugural address Mr. Palmer said that during the last ten years the scope of subjects with which the municipal engineer had to deal had been greatly extended and widened, the operations of various Acts of Parliament, the introductions of reinforced concrete, extension of the Public Health Act, Housing and Town Planning, and various other matters had made it necessary that his knowledge should be special, and that he should be a highly trained man. One of the subjects of most recent creation, and one which would ultimately have far reaching consequences for good, was the passing of the Housing and Town Planning Act. Of all subjects connected with the health of the community nothing could be of greater importance than the control which local authorities were empowered to exercise in the future over the provision of living accommodation for the working classes. The effect of this great public health measure upon the future welfare of the population engaged in large industrial centres could not be overestimated. The regulations which had now come into force appeared to have been made so as to meet all the points in the Act, but no doubt these would require alteration as the operations of the Act were more fully understood. On reading the regulations one could observe that they had been drawn up on lines which indicated most careful consideration and the application of practical minds. The regulations showed that a considerable amount of work would be thrown upon the officers of the local authority in regard to the scheme, and it appeared perfectly obvious that the drafting and carrying out of all town planning schemes would be a matter of considerable magnitude, and would have to be prepared and dealt with by the greatest care and consideration on all hands so that all interests involved might be taken into account, and local prejudices smoothed over.

Reinforced Concrete.

Reinforced concrete, although only used extensively within recent years, was old in principle, and had been used in works of considerable magnitude for years past. The Romans to some extent strengthened and reinforced concrete with tiles so as to give a bond in walls, and no doubt to some extent understood the principles in a rude or rule-of-thumb manner. It was only within the last few years that the subject had been studied scientifically as regarded the calculation of stresses, in the combination of two materials so very different in their characteristics. The calculations in connection with reinforced concrete structures were decidedly intricate, although not difficult; they required great care and a good knowledge of applied mechanics and of the properties of concrete. The execution of reinforced concrete structures had to some extent been confined to certain firms who had made the subject a special study, and had gained much experience, and, in his opinion, the use of reinforced concrete to a large extent in either engineering or architectural structures should only be entrusted to those who had studied the subject and had very considerable experience in the use of steel and concrete in all its various forms. It was now put to many uses in engineering as well as architectural work. Many very fine specimens of such work were to be seen in various parts of the country, but it must not be forgotten that there had been a considerable number of failures, which one did not so readily hear of.

Town Planning Procedure Regulations.

Mr. F. E. Fremantle (County Medical Officer, Herts) gave a paper on "The Town Planning Procedure Regulations (England and Wales), 1910." He pointed out that town planning under the Act was confined to land which is in the course of development or appears likely to be used for building purposes." It did not apply to land at present occupied by buildings, and it therefore had little to do with the central area of existing towns. Nor was it likely in the near future, despite the successful example of Letchworth, to be largely used for the planning of new towns from the outset. Its main application will be to the extending fringe of suburbs of existing towns and villages, and in his judgment every town and village throughout the length and breadth of the land in or around which any land "appears likely to be used for building purposes" should within the next few years frame a town planning scheme for the guidance of possible building developments in accordance with the public interests and the saving of future costly improvements. The fundamental objection to the regulations was that the procedure prescribed was unnecessarily and inordinately troublesome, costly, and elaborate, and would certainly hinder very greatly the spread of town planning. The regulations went far outside the Act, and they were indeed a direct breach of Mr. Burns's undertaking to the committee that considered the Bill in Parliament to the effect that the preliminary procedure for sanction to prepare or adopt a scheme should be the simplest possible. The regulations should be divided into two chapters, one for schemes proposed by owners, and the other for schemes proposed by the local authority. As they stood, the procedure in the two cases was elaborated on similar lines, article by article, and each stage of procedure was swollen out to include every conceivable contingency. The author concluded by moving the following resolution:—"That this meeting is of opinion that the procedure imposed on a local authority by 'The Town Planning Procedure Regulations (England and Wales), 1910,' prior to obtaining authority to prepare or adopt a town planning scheme will entail considerable expense, opposition and difficulty; that it will greatly deter authorities from making use of the Act; that details at this stage are unnecessary and that to insist on the details prescribed at an early stage will to a large extent defeat the intention of the Act; and that the Council of the Royal Sanitary Institute be asked to make such representations to the Local Government Board as may appear to the Council to be necessary in the matter."

Dr. Weaver, in seconding the resolution, expressed the belief that in the small districts the Act would not be put into force because surveyors would not be able to persuade their Councils to embark on the elaborate processes required by the regulations.—Mr. R. Brown M.I.C.E. (Southall, Norwood) considered there would be a danger in making the regulations too easy, but he thought the Government might well assist the smaller communities in the matter of keeping their ordnance sheets accurately up to date.

Mr. Lanbie (Lanarkshire) and Mr. Munce (Belfast) both opposed the resolution, and said they were only just commencing with the Act, and it would be time to go to the Government when it was found they could not deal with schemes under the regulations.

Mr. P. Boulnois (Local Government Board) said the author had dealt with what was a mere bogy. A layman reading the requirements might be frightened, but to the men who had to do the work they were absolutely simple. He assured them that the regulations were simplicity itself.

The resolution was defeated by a considerable majority.

THE ROMFORD GARDEN SUBURB COMPETITIONS.

We are informed by the Hon. Secretary of the Town Planning and Modern House and Cottage Exhibition that, although the 31st of October has been fixed as the date for receiving designs in Classes I. and II., it will greatly assist the judges if a fair proportion of the designs are sent in for consideration before that date. The entries at present received fully justify the hope that Mr. Raphael's generosity will result in a most interesting and valuable exposition of modern cottage architecture, which should exercise a far-reaching influence on suburb building near London. It has been arranged to publish a fully illustrated quarto volume, describing the houses and cottages erected with plans and drawings, and competitors are asked to furnish perspective drawings and short descriptions of their work, with the names and addresses of the architects and builders, as soon after the 31st October as possible, in order to facilitate the preparation of this work The conditions of competitions which, together with a plan of the estate, have been furnished to us are as follows:—

Competitions Open to Architects.

Class I.—A detached house, to cost £500; First prize, gold medal and £250; second prize, £100.

Class II.—A detached cottage, to cost £375: First prize, gold medal and £200; second prize, £100.

Class III.—For the best internally fitted house in Classes I. or II.: First prize, £50.

Class IV.—A town plan of Gidea Park: First prize, £100; second prize, £50.

Class V.—A garden design for house or cottage in Classes I. or II.: First prize, £25; second prize, £10.

Class VI.—A perspective drawing, suitable for reproduction, of a house or cottage entered for competition in Classes I. or II.: First prize, £10; second prize, £5.

Competition Open to Builders.

Class VII.—For excellence of workmanship and construction in the erection of a house or cottage in Classes I. or II.: First prize, gold medal and £100; second prize, £50.

Conditions and Instructions to Competitors.

1. The competitions for Classes I. to VI. inclusive are open to all architects resident in the United Kingdom, and the competition for Class VII. is open to all builders resident in the United Kingdom, provided that no promoter of the competition, and no assessor or judge engaged upon it, or any employee of either shall be eligible to compete, nor shall they assist any competitor. Any competitor ineligible on these grounds shall be disqualified.

2. Mr. E. Guy Dawber, vice-president R.I.B.A., Mr. H. V. Lanchester, F.R.I.B.A., and Mr. Mervyn Macartney, F.R.I.B.A. (who are at liberty to obtain the assistance of lay advisers in such manner as they think fit) will judge the entries and award the prizes in all classes of the competition, and their decision, or the decision of a majority of them, with regard to any matter arising in connection with the Exhibition, shall be binding on all parties and without appeal.

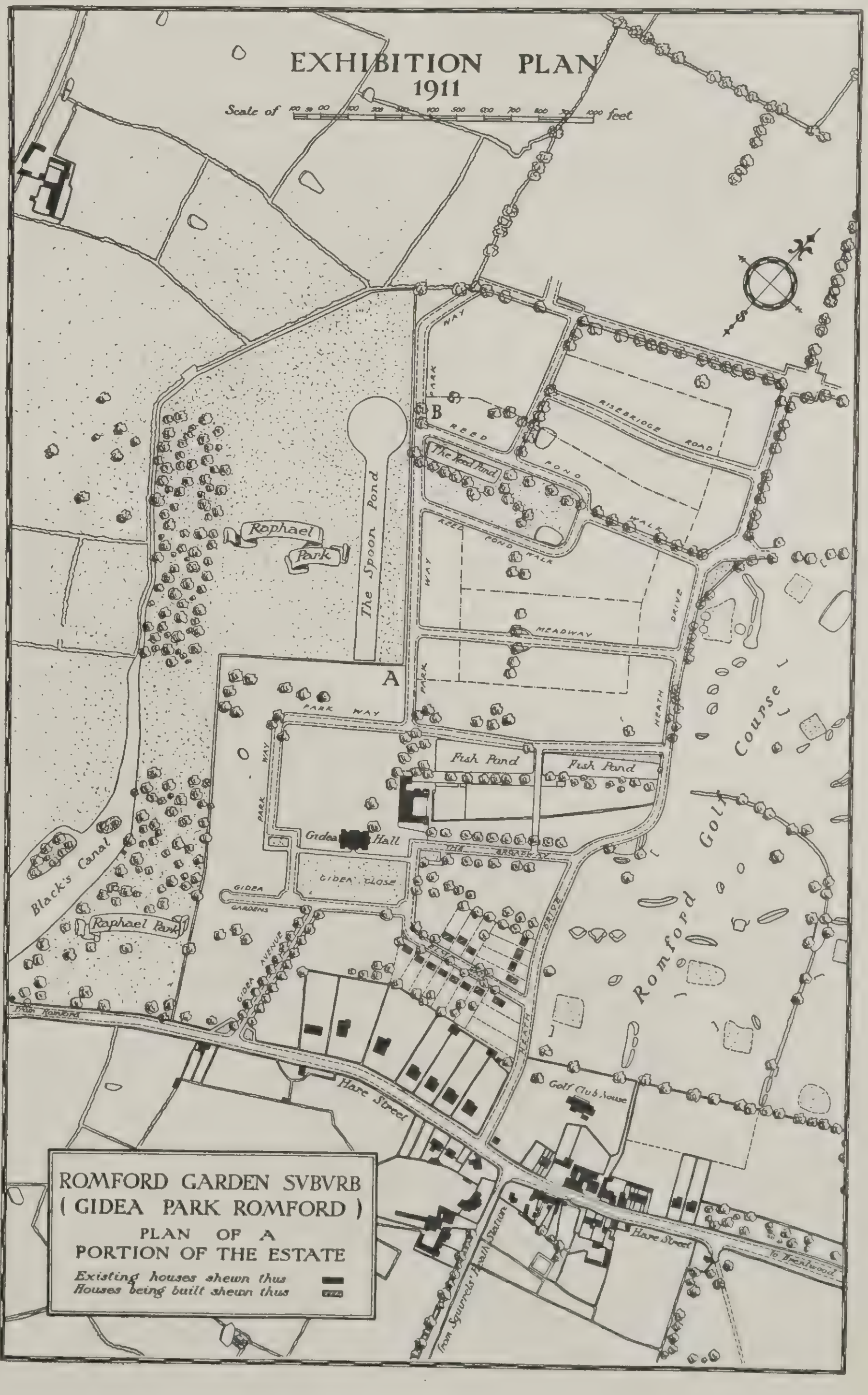
3. Any designs or entries will be excluded from the competition (a) if sent in after the dates named (unavoidable delay in transit alone being excepted); (b) if in violation of the instructions; and (c) if any competitor attempts directly or indirectly to influence the decision of the assessors.

4. Competitors entering for the Exhibition shall be held to accept and be bound by these conditions and instructions.

5. The directors of the Romford Garden Suburb have allotted for the purpose of this competition a site bounded by Raphael Park in the town of Romford on the South-west side, and by the Romford golf links on the north-east, and on the south-east by the ornamental grounds of Gidea Hall. A plan drawn to a scale of 1/2500, and showing the plots allocated to the purposes of the Exhibition, can be obtained on application to the Secretary, Town Planning and Modern House and Cottage Exhibition, 33, Henrietta Street, Strand, W.C.

6. The plot plan above referred to will be clearly marked with the freehold price of each plot, and the ground rent for a 99 years' lease of each plot, and it will be optional on the part of the competitors to purchase the plots upon which they build in fee simple or to lease same. The lease will contain an option to purchase the freehold within three years.

Note.—The judges will have full power to extend the period within which entries are to be received or buildings are to be erected, if, in their judgment, it becomes advisable to do so, of which due notice will be given to all competitors.



Classes I. and II.

The prizes in these classes will be awarded by the judges to houses and cottages to be actually erected by competitors in Gidea Park

7. The cost price must include the entire building cost including builder's profit and architect's fees (5 per cent.) but not the cost of the land or of any work done in laying cut or planting gardens except as provided in clause 10, section VI.

8. The directors of the Romford Garden Suburb will be prepared to purchase for cash at the Exhibition price the first six houses or cottages in each of Classes I. and II. in the order in which they are placed by the judges.

9. Arrangements have been made whereby at least three-fourths of the cost of erection will be advanced on each house or cottage erected for Exhibition purposes. Terms can be had on application at any time after September 8th to the Secretary of the Exhibition. Competitors desiring to avail themselves of these facilities are requested to submit their designs for approval at as early a date as possible.

10. Classes I. and II.—Competitors desiring to erect houses or cottages for exhibition under Classes I. and II. must submit on or before October 31st, 1910, sketch designs of the houses or cottages proposed to be erected, drawn on plain paper of imperial size and to a scale of ⅛in. to a ft., together with a portion of the principal elevations drawn to a scale of ½in. to a ft., with a block plan to a scale of 1/500, with soil and R.W. drains clearly shown thereon, and in a form in which they can be deposited with the Romford Urban District Council (see extracts from by-laws on pp. 45 and 46) without alteration. A short description of the principal materials proposed to be used in the external construction of the building must be clearly indicated upon the drawings themselves. The length of sewer from disconnecting chamber to centre of road to be taken at 30ft.

(1) The drawings will be submitted to the judges for approval, who may approve the same unconditionally or conditionally upon these regulations being complied with, and such designs as in their opinion are not in accordance with the regulations herein set out will be excluded from the Exhibition, and competitors submitting these designs will be at once notified of such exclusion, and their drawings will be returned to them.

(II.) In order to obtain a reasonable uniformity of treatment the following regulations as to building shall be adhered to by all competitors in Classes I. and II., and neglect to comply with these regulations may disqualify a competitor.

(III.) Materials and Construction.

(a) External walls may be faced with well-burnt red, grey, or brindled bricks jointed in mortar. They may be built in common bricks or other hard and incombustible material coated with cement roughcast and distempered with cream distemper, or they may be built of 11in. hollow walls of common bricks twice limewhited.

(b) It is suggested that the chimney stacks in all houses should be faced with red, grey, or brindled bricks jointed as above.

(c) Roofs must be covered with tiles, and must have a pitch of not less than 45 deg. to the horizontal.

(d) The window panes should be of a standard proportion of width to height of 6 to 7½, or as near this proportion as the competitor finds practicable.

(e) All buildings are to be in accordance with the by-laws of the Romford Urban District Council, and competitors must submit drawings, etc., to the Council and obtain the necessary approval.

(IV.) Accommodation.

(a) Houses in Class I. must contain the following accommodation, and may contain more at the option of the competitor: On the ground floor, two reception, kitchen, scullery, larder, servants' w.c., coals; on the first floor, four bedrooms, bathroom, separate w.c. (one bedroom may be placed in attic if desired).

(b) Cottages in Class II. must be designed in two storeys and must contain the following accommodation, and may contain more at the option of the competitor: One reception, living, kitchen, scullery, larder, coals; three bedrooms, bathroom, separate w.c.

(c) No living room or bedroom in any house to contain less than 500 cubic feet.

(V.) Houses must be completely finished in every respect ready for occupation, and fitted throughout, the drains connected to sewers, and the water and gas laid on, and the site and garden absolutely clear not later than May 1st, 1911, and non-compliance with this regulation will disqualify competitors.

(VI.) Every plot must be enclosed on one side and at back with open trellis fencing, and along the front boundary with post and chain fencing. In order to obtain uniformity this fencing will be carried out by the Exhibition Committee, and a sum of £15 in Class I. and £10 in Class II. must be provided within the cost limit to defray the expenses of fencing, exclusive of any entrance gates.

(VII.) Competitors are advised to have the gardens laid out, and, if desired, planted, as this tends to improve the appearance of the house, but this work is not to be included in the cost limit. The attention of competitors in Classes I. and II. is specially directed to Classes V. and VI.

The plan issued to competitors will show the aspects of the various plots, and competitors will be required to state upon the entry forms for which aspect they intend to erect their houses. The plots will be allotted by the judges, and buildings frontages marked thereon when the designs are approved, with a view to grouping houses of different material and design in such a manner as to secure, so far as practicable, uniformity of architectural effect.

No plot may be of a less width than 35ft. in Class I. or 30ft. in Class II., but the width of plots will be increased by the judges where necessary to accommodate the frontages of houses and cottages as designed by competitors, and competitors must allow for a minimum space of 5ft. to be left unbuilt upon on each side of a house entered for erection in Class I., and for a minimum space of 4ft. to be left unbuilt upon on each side of a cottage intended to be erected in Class II., and in arranging windows the proximity of the houses on either side should be borne in mind.

Competitors must on or before the 1st May, 1911, send a written statement to the Secretary of the cost of erection as defined in Clause 7, which price will be the exhibition price and must not exceed the cost prices allowed, and successful competitors in Classes I. and II. must be prepared to satisfy the judges that the houses have been erected, and can be repeated, within the building price allowed, after allowing a reasonable margin of profit to the builder employed, and for this purpose must be prepared to produce to the judges vouchers and accounts on completion, or such other information as they may require.

Class III.

No special form of entry is necessary for this class. The prizes will be awarded to the house or cottage in Classes I. or II. which, in the opinion of the judges, is best fitted and contrived to minimise domestic labour and service. The principal point which will be considered will be the convenience of the house and its internal fittings, as apart from movable furniture, from the housewife's point of view.

Class IV.

Detailed conditions in Class IV. will be sent, post free, to all applicants on and after September 30th, 1910.

All plans submitted to the judges will remain the property of the competitors. The directors of the Romford Garden Suburb reserve the right to utilize the same for repeats subsequently to the Exhibition, on payment of the usual professional charges.

Class V.

No special form of entry is necessary for this class. The prizes will be awarded by the judges to the gardens of houses or cottages erected in Classes I. or II., which have been actually laid out and planted by competitors on or before the 8th May, 1911.

Class VI.

Perspective drawings should be drawn to a size of 12in. by 8in. and suitable for reduction to one-third of that size, and must be line drawings, and must be sent to the Secretary on or before the 30th November, 1910.

Class VII.

No special form of entry is necessary for this class. The prizes will be awarded to builders who have actually erected houses or cottages in Classes I. or II., irrespective of whether such houses or cottages have or have not obtained prizes in Classes I. or II.

COMPETITIONS.

LIST OF COMPETITIONS OPEN.

SEPT. 15. The QUEENS UNIVERSITY OF BELFAST. Enlargement of the present buildings at a cost of about £52,000. Particulars in our issue of June 1st.

SEPT. 19. TOWN HALL, MAESTEG.—Printed terms and conditions, etc., from the engineer, Samuel J. Harpur, Town Hall, Maesteg.

Oct. 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C., or obtained from the "Commission d'études de l'aménagement de l'agglomération anversoise," Due du Jardin des Arbalétriers 57, Antwerp. Deposit 100 francs.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

OCTOBER 31, ETC. ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

NO DATE. CHURCH, LLANDUDNO. Competitive designs are invited from architects who have practised for not less than five years in North Wales or in the City of Chester for the erection of a church for the West Shore District of Llandudno. Deposit, one guinea. Apply, the Rector, Llandudno.

Nov. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

DEC. 1. DUBLIN. NEW PAVILION. ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK. Open only to architects practising in Dublin. Premiums £100 (to be merged), £30, and £20. Conditions on application to the Registrar.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

CONCRETE AND STEEL SECTION

(MONTHLY.)

Novelty in Reinforced Concrete. One of the novelties in reinforced concrete of heavy proportions has been tested by the large guns of the U.S. Navy in the walls of the Panama Canal. Sections of the wall have been built up as targets, and are to be tested fully. In an accidental shot from one of the United States twelve-inch guns the solid shot at six-inch muzzle distance tore through the eight-foot wall seemingly with undiminished speed. Apparently this would show that the shot would have penetrated many more feet of the concrete body. Examination proved, however, that the shot had risen upward steadily and had gone out at the top of the wall. According to this chance shot, it is believed by army engineers that a few more feet of concrete would have let the shot out of the wall, leaving no debris, and especially leaving no crack in the wall.

Calcium Aluminate and Natural Cement. At the recent meeting of the American Society for Testing Materials, Mr. Henry S. Spackman, of Philadelphia, presented a paper on the use of calcium aluminate with lime and cement mortars. An extended investigation covering the past two years shows, among other things, that the strength of natural cement is greatly increased when the aluminate is added. The process (under investigation) consists in adding to lime and natural cement mortar various proportions of calcium aluminate as a dry mix, and then testing the neat and mortar briquettes so formed in the regular tension tests. In the tables submitted by Mr. Spackman it was shown that in various mixtures of aluminates with lime, trass, clay, ashes, slag (all finely divided silicious material), the tension tests, both neat and in mortar, show much higher than in ordinary lime mortars. When mixed with ordinary natural cement, various percentages of calcium aluminate raise the tensile value of briquettes 200 to 600 per cent, in many cases above the standard requirements for Portland cement. The exact reason for this increase in strength and the best proportion of mixture have not been determined, but in the light of these experiments, the author considers that for many purposes it will be possible to substitute a lime-alumina or a treated natural cement mortar for one of Portland cement at a great saving in cost. Based on this remarkable showing, of natural cement it is stated that several manufacturers have undertaken on a commercial scale the manufacture of these so-called "Alca" cements. This will open up a very interesting field for development.

Sand for Concrete. In discussing this question before the Boston Society of Civil Engineers, Mr. J. P. Snow states that a good criterion of cleanliness of sand is the freedom of its grains from sticking together. The sand may be coarse or fine, but if each grain admits of being wholly covered with a film of cement, the mortar will have the strength of the cement. If, however, several grains adhere together strongly enough so that they are not separated by the process of mixing the mortar or concrete, it is evident that the spot in the mass where this lump is will be no stronger than the lump itself. The material causing the sand to stick together may be clay, a film or silt; organic matter, oil or chemicals, but if effective enough to hold the grains together till the concrete is placed, it will cause a weak nucleus in the material. A magnifying glass will greatly assist in determining the qualities of sand.

Instruction in Reinforced Concrete Design and Practice. The would-be student of reinforced concrete construction is often in a quandary as to how and where to commence a course of study in the subject, and in his need, which is the more pressing because of the novelty and importance of what is still in rapid growth and still far from completely determined, or in reference to which the whole field is not explored, he finds little or no assistance from our building and engineering teaching centres. There is a tendency, perhaps, to treat the subject as an appendage to instruction in applied mechanics, theory of structures, or building construction generally; but it cannot be adequately so dealt with. Our readers will have noticed, even from our enquiry columns, that we are often asked to advise as to how the subject can be studied, and we have been compelled to suggest the very poor expedient of reading books, for the books are by no means an adequate substitute for personal teaching, and there is very much of importance in practice that is not to be found in books, or else is not to be seen in its proper relation therein. While a few expensive books do contain some valuable information on the theory for the advanced student of mechanics, we know of none that give the instruction that is so badly needed on the practical side as required by the craftsman, foreman, and clerk of works, as well as by the designer. Instruction, though, is not less needed by the engineer, architect, and draughtsman, in respect to theory as applied practically to the design of reinforced concrete construction.

At the L.C.C. School of Building. Hitherto we have not been able to refer our readers to any course of personal instruction; but we are glad now to be able to announce that the want will no longer remain unfilled, as we announced last month, for a very complete course of lectures has been arranged for the session commencing September 27, at the London County Council School of Building (which seems destined to become the English "Charlottenburg"), the lecturer being Mr. H. Kempton Dyson, the Secretary of the Concrete Institute. We are informed that Mr. Dyson intends giving his students a thorough grounding in both the practice and theory of the subject. It is proposed to arrange the course under three heads—namely, theory, practice, and workshop experience. Those who are wishful of designing reinforced concrete will take the full course, but those who desire only to study the practical side of the subject, such as foremen, clerks of works, surveyors, and craftsmen, will be required to attend only the lectures on practice and the workshop experience. The lectures will touch on all phases of the subject. Those on "Construction of Reinforced Concrete and Quantities for same" will deal with the history and development of reinforced concrete, materials, tools, and appliances, making of concrete and manufacture of reinforcing steel, centering, the actual work of construction, architectural treatment and finishings, quantity taking and estimating for reinforced concrete work, etc. The lectures on "Theory and Design of Reinforced Concrete" will deal with the elastic theory of materials, experimental data, bending moments, shear stresses, beams, slabs, walls, columns, arches and domes, chimneys, reservoirs, tanks, bins, caissons, retaining walls, dams, pipes, sleepers, fence posts, poles, temperature stresses, rules and regulations, and practice in design.

Workshop and Laboratory Practice. The "Workshop and Laboratory Practice" is intended to supplement the lectures on practice and theory, and will deal with cement: its properties and testing; properties of stones and other aggregates, sand, water, and steel; concrete proportioning and making; steel manipulation; making of centering and moulds; tests on concrete and steel; porosity; tests of structural members of reinforced concrete, the making of which affords practice in construction; bending moments; shear; adhesion, etc. The course will be amplified by experiments, diagrams, lantern slides, specimens, models, and the use of testing plant. An endeavour will be made to visit works in course of construction so as to acquaint students with actual working conditions. The time of the lectures will be from 7.30 to 9.30 p.m.

The Development of Reinforced Concrete. The first lecture will be a special one, introductory to the course, and will be entitled "The History and Development of Reinforced Concrete." Admission to this lecture can be obtained free on application by those who contemplate joining the classes. It will be illustrated by the lantern, and will be complete in itself, though introductory to the course. It will be delivered in the school lecture hall at 7.30 p.m. on Tuesday, September 27, 1910. There will be, we are assured, an earnest endeavour to make the course of real value to those even who have had considerable experience in design and practice in reinforced concrete construction. The fees are very moderate, being: for those earning over 30s. per week 10s. the session, and for those earning 30s. per week or less 4s. 6d. the session, which fees include the whole or any of the classes in every subject held at the school. Moreover, apprentices, learners, and improvers under 21 years of age are admitted free to the school. We have in this country for too long lagged behind America and the Continent in regard to proper theoretical treatment and experimental study of the subject of reinforced concrete, and it is the lecturer's hope to secure at Brixton sufficient support to remove this reproach as regards London.

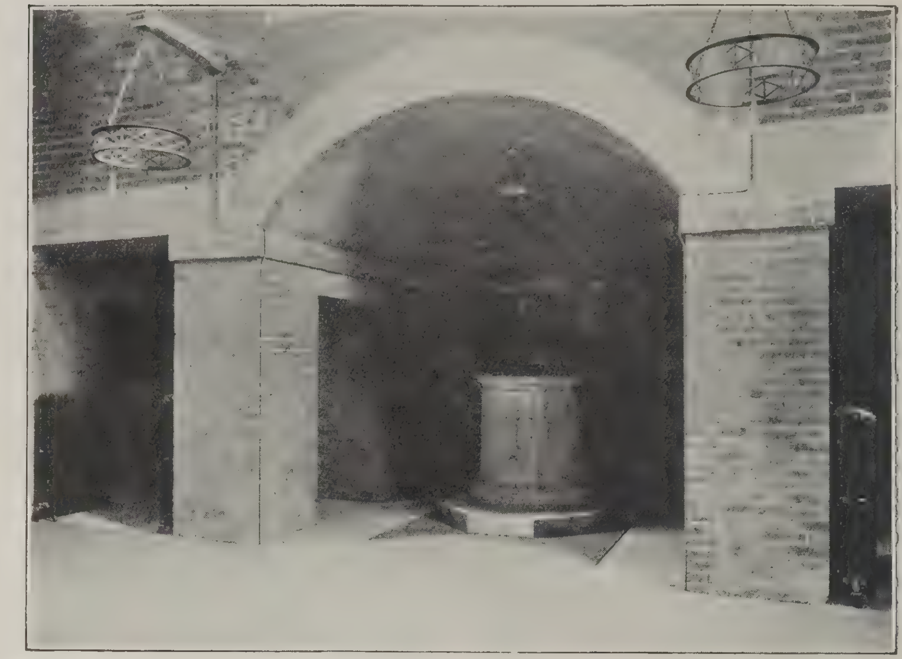
CHURCH OF ST. BARNABAS, SHACKLEWELL, LONDON.

Though quite a small church hidden away in the north-east of London behind factories and amid surroundings of uninviting character, this is a very interesting piece of work, both constructionally and from the standpoint of architectural design. Economy being a ruling factor, and exterior effect being impossible owing to the situation of the church, the architect concentrated his attention on the interior. From the accompanying plan it will be seen that the church is entered from Shacklewell Row by a covered passage (not yet built). This leads into the nave, which is about 30ft. wide with a narrow ambulatory on either side, carried right round the church. The width of the nave is continued into the chancel. The eastern end, behind the altar, has an apsidal termination, the ambulatory connecting the choir vestry on the north side with the small morning chapel on the south.

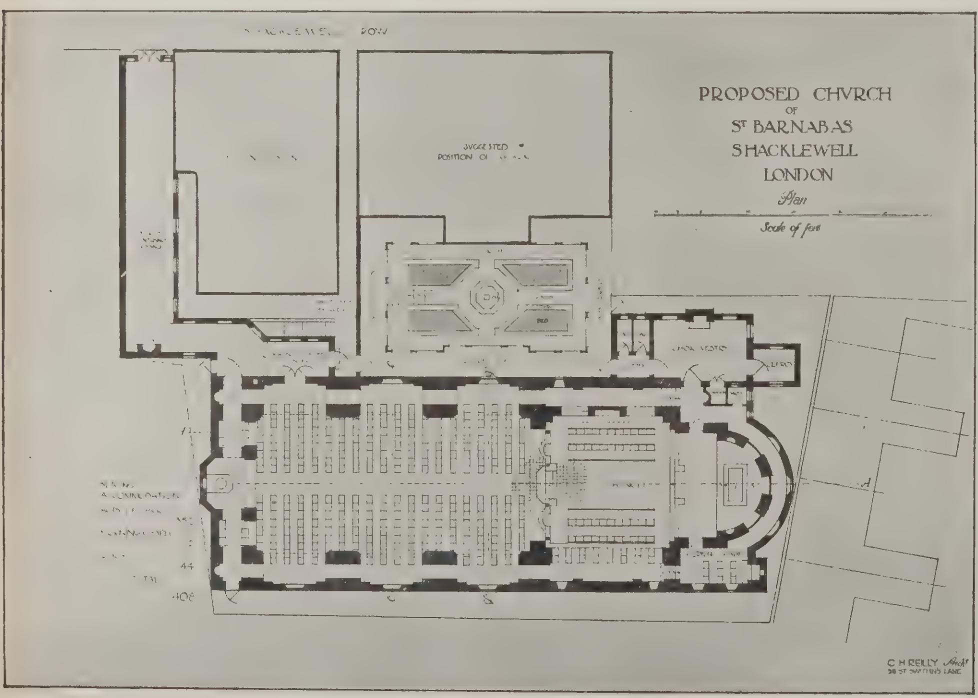
Dividing the chancel from the nave is a finely proportioned screen, comprising four columns carrying a rood-beam as entablature and crowned by a cross, all in wood on a stone base. Of much interest, too, are the doors leading out of the chancel to the morning chapel and to the covered way and garth which it is proposed to form on the north side, adjoining the suggested vicarage. The total seating accommodation is 408. The fabric is of stock bricks, and the roof and vault, which are in one, are of concrete reinforced with expanded metal.

The main roof is 105ft. 0ins. long internally, and is comprised of a barrel roof, 30ft. 0ins. span, over the nave; a dome, 18ft. 5ins. radius, over the chancel; an arched roof, 20ft. 6ins. span, and a semi-dome roof, 8ft. 6ins. radius, over the apse. The height to the springing of the roof is 30ft. 3ins. from the finished floor of the nave. The barrel roof over the nave is carried by external ribs. The soffits of these ribs and the soffits and sides of the four arches carrying the main dome are faced with stock bricks in cement tied by bonding irons to the concrete; this brickwork facing, which forms bands or rings, is merely a shell put in for appearance, and was not calculated to assist the reinforced concrete in any way. In addition to the above, expanded steel-concrete flat roofs were formed over the morning chapel and heating chamber. The whole of the roofing is covered with $\frac{3}{4}$-in. of "Seyssel" asphalte put on in two layers for waterproofing purposes.

This form of construction has resulted in an economical yet substantial building, the total cost of the church having been £4,400. The general contractors were Messrs. L. H. and R. Roberts, of Islington. The reinforced concrete work was executed by the Expanded Metal Co., Ltd., of Westminster. The windows and electric light fittings were executed by Messrs. Wenham and Waters, of Croydon. The architect was Professor C. H. Reilly, M.A., A.R.I.B.A., of Liverpool.



CHURCH OF ST. BARNABAS, SHACKLEWELL, LONDON: THE BAPTISTERY.
PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

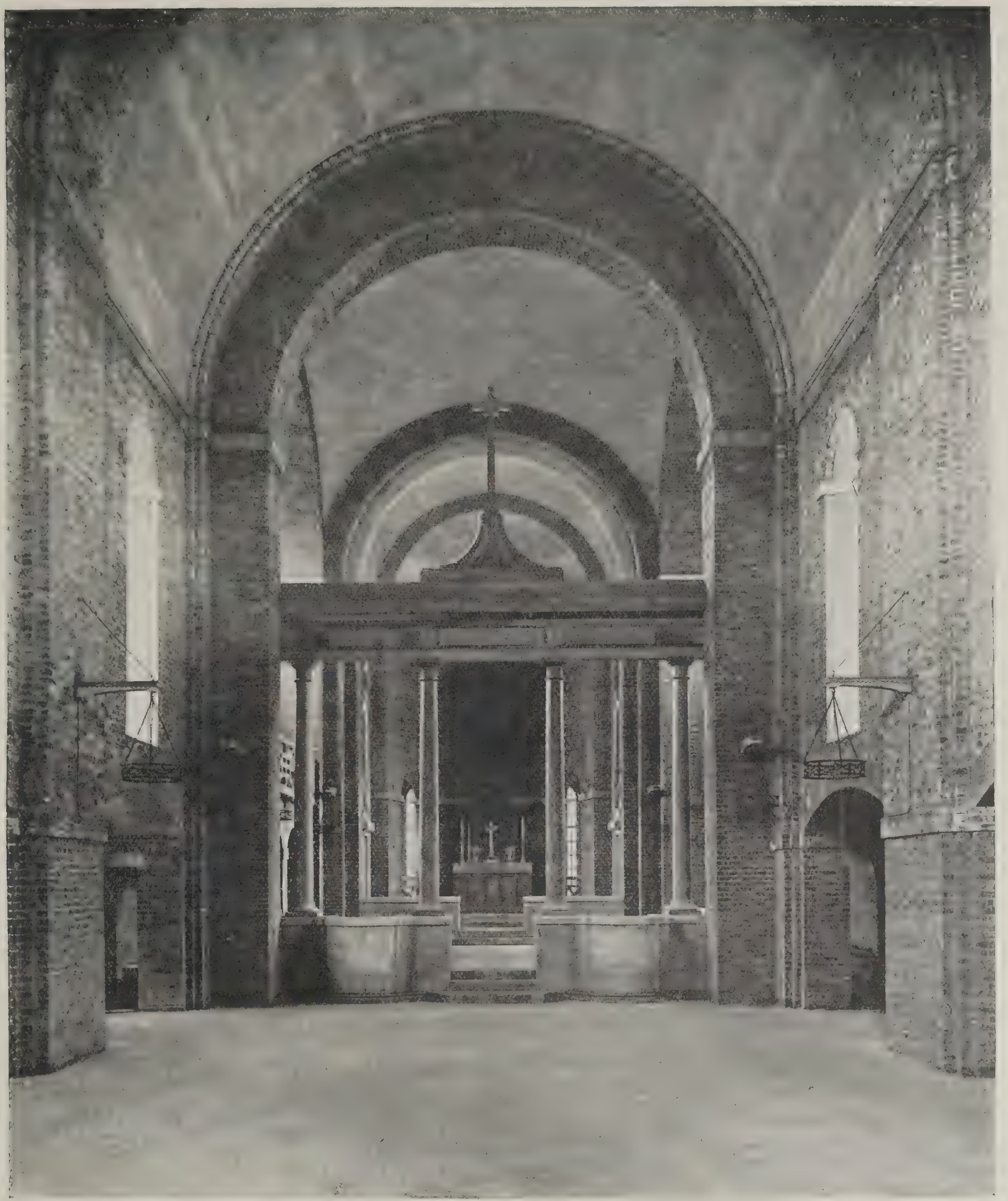


PROFESSOR C, H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

CONCRETE NOTES.

Civil Engineers and Reinforced Concrete. The preliminary and interim report on the conditions of the employment of reinforced concrete in engineering structures has been issued by the Institution of Civil Engineers. The members of the committee who are conducting the inquiry hope to formulate recommendations on the subject at a later date. In the meantime the present report deals with the facts which have been elicited up to the present time, and gives particulars of the principal systems of reinforced concrete now in use, the general advantages claimed for them, a comparative analysis of specifications adopted for work in these materials, the nature of the requirements and the calculations which should be regarded as of primary importance, reports on works executed, and a synopsis of the evidence given before the committee.

Fire Test on a Reinforced Concrete Building. As the most important point that concrete exponents bring forth after proving the economy of construction is the fire-resistance of reinforced concrete, the results of a test applied by the building department of Denver are rather interesting: The slab selected was a $7\frac{1}{2}$-inch slab, in the Railway Exchange building. The panel size is 14 by 20 feet, reinforced with $\frac{1}{2}$-inch round rods, running four ways, 8 inches on centre, the Turner mushroom system of reinforcing being used. The slab was poured on February 18, and the test took place April 28, giving the concrete an age of of 69 days. The panel was loaded with 60,800 pounds of cement, or approximately 225 pounds per square foot. The deflection under this load was exactly $\frac{1}{8}$-inch. A fire was then started by igniting two cords of very dry pine wood and five gallons of kerosene. This was allowed to burn about 18 minutes, when the deflection was increased by one inch. The fire was then extinguished, and cold water sprayed on the under side of the slab, causing about nine square feet of spall to a maximum depth of one inch. The test load was removed, and four hours



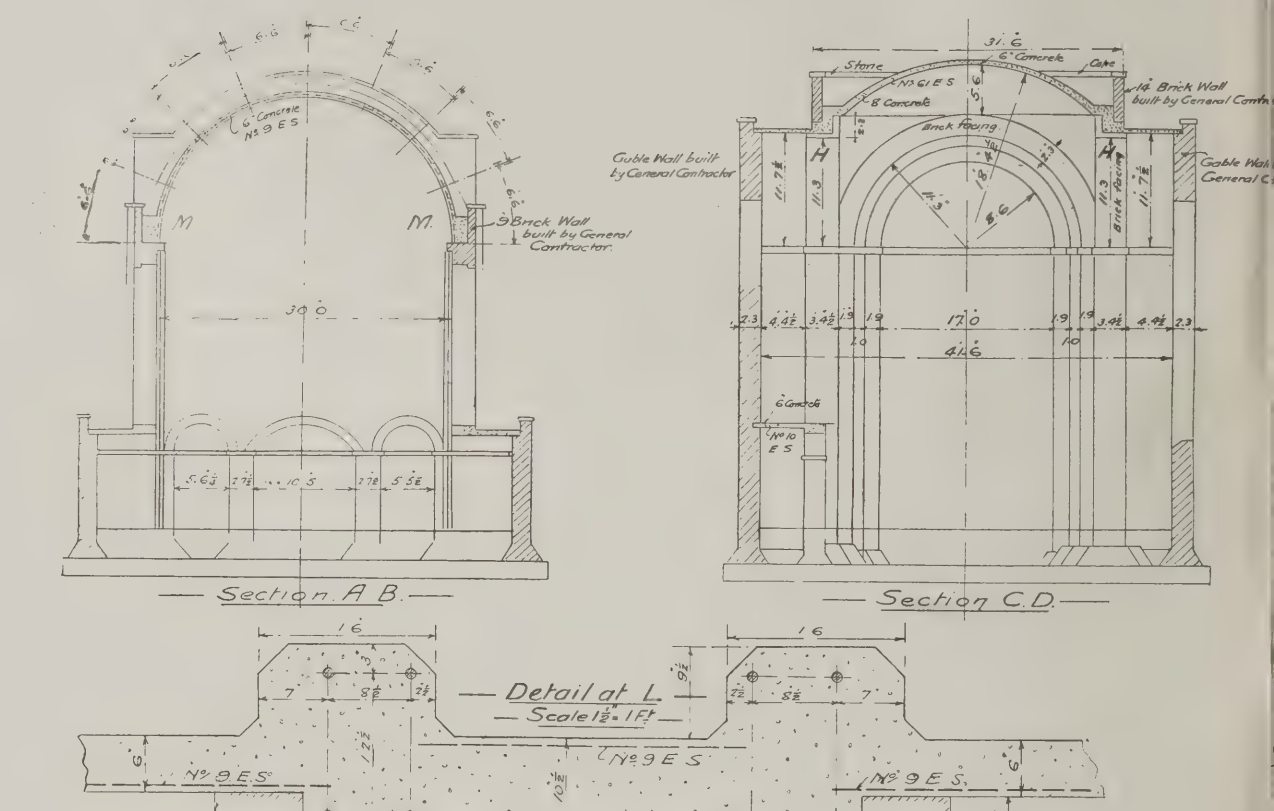
THE CHURCH OF ST. BARNABAS, SHACKLEWELL, LONDON: INTERIOR, LOOKING EAST.
PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

after the test a recovery of one-half-inch was recorded. By nine a.m., May 6, only ⅜-inch deflection remained. The conclusions to be drawn from this test are that while the test was absurdly severe the concrete was practically unharmed, as the slight spalling was merely on the surface, and was due to the great extremes of temperature on material which had not had time to properly harden. The rocks forming part of the aggregate were clearly broken, showing that the adhesion of the cement was perfect.

Waterproofing a Reinforced Concrete Water Tank. The City of New Ulm, Minn., has just completed a reinforced concrete reservoir of 1,000,000 gallons capacity, a cylindrical structure 75ft. in diameter with the walls 30ft. high, and covered with a conical concrete roof. Since it was of the utmost importance that the walls and floor should be water tight, special care was taken during the construction to grade the aggregate for the concrete. It has been found by experiments that the densest concrete can be made when rounded pebbles varying in size from about ¼-inch to about 2½ inches are used instead of broken stone on account of the ease with which such pebbles will move about in a quaking mixture while it is being worked in place, and adjust their positions so as to form the least amount of voids. For this reason pebbles were screened from a gravel bank and used instead of crushed stone for the walls and upper part of the floor, and the sand used was a mixture of very coarse and ordinary fine sand. To reduce the permeability of the concrete to a minimum, 20 pounds of hydrated lime was used in every barrel of cement, and after the forms were removed the walls were brushed and cleaned with steel brushes, and two coats of cement plastering were applied on the inside. The mortar for the plastering consisted of one part cement, two parts of sand, hydrated lime to the extent of 10 per cent., and Medusa waterproofing compound to the extent of 3 per cent. of the cement used. The proportion used for the concrete in the walls and the upper 4 inches of the floor was 1 : 2 : 4, and this proportion of concrete, together with the plastering, has apparently made the walls water tight, as no leakage has been noticed up to this tice except a small leak in the bottom shortly after the reservoir was filled, which was due to an imperfect bond at one point between the old and new concrete. This, however, did not cause serious trouble.

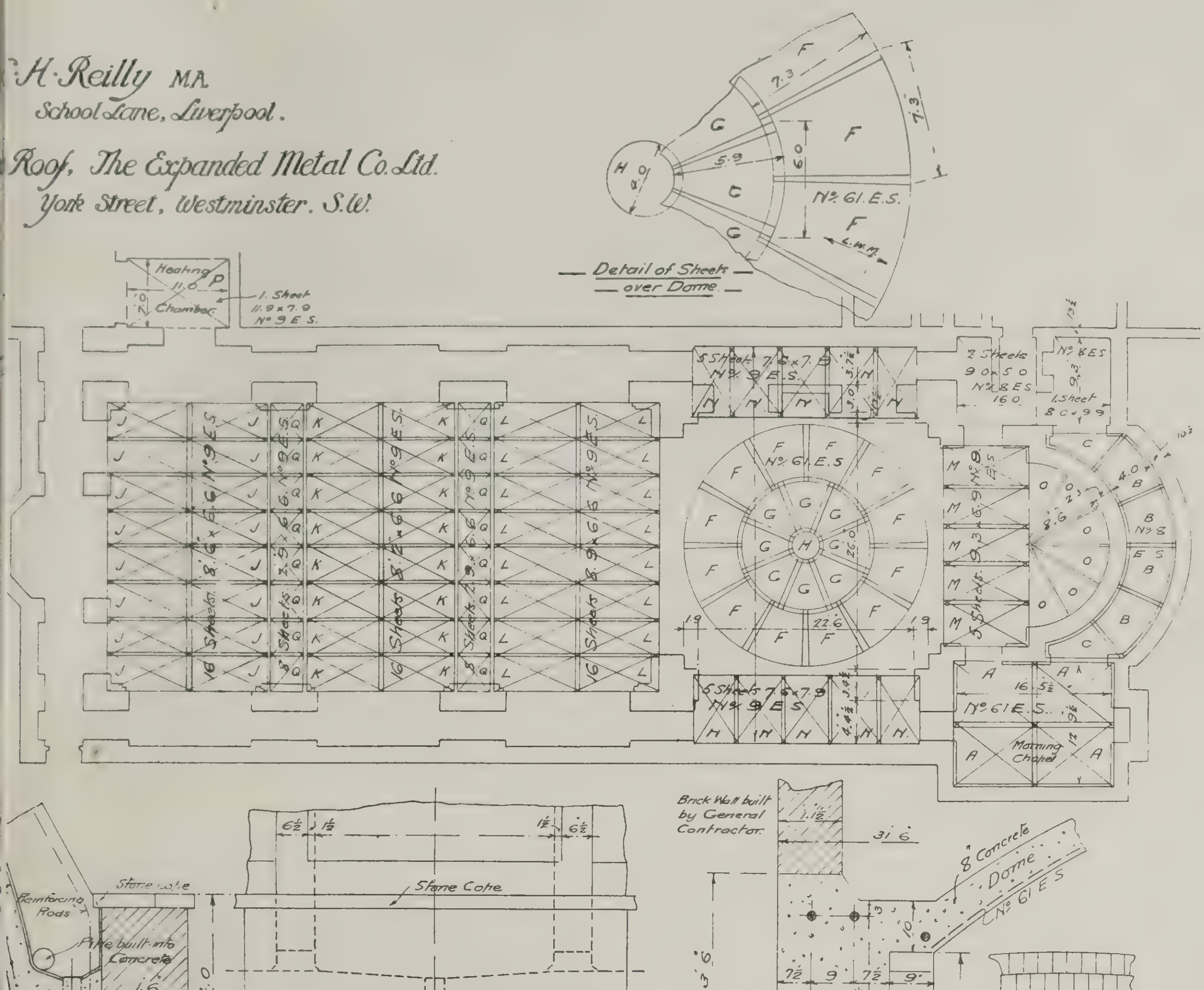
Architec

Contractor



SCALE OF FEET

THE CHURCH OF ST. BARNABAS, SHACKLEWELL, LO



.H. Reilly MA
School Lane, Liverpool.
Roof, The Expanded Metal Co. Ltd.
York Street, Westminster. S.W.
— Detail of Sheets over Dome —
No. 61. E.S.
Heating Chamber
1. Sheet 11.9 x 7.9 No. 9 E.S.
5 Sheets 7.6 x 7.9 No. 9 E.S.
2 Sheets 9.0 x 5.0 No. 8 E.S.
1 Sheet 8.0 x 9.9
16 Sheets 8.2 x 6.6 No. 9 E.S.
5 Sheets 2.5 x 6.6 No. 9 E.S.
5 Sheets 9.3 x 5.9 No. 9 E.S.
Morning Chapel
Brick Wall built by General Contractor.
8 Concrete Dome No. 61 E.S.
Brick facing
— Detail at. H. —
Reinforcing Rods
Pipe built into Concrete
Stone Cope
Brick Parapet built by General Contractor.
— Detail at. M. —
— Scale 3/4 in = 1 Foot —
Brick Wall built by General Contractor
Brick Facing
— Detail at. J. —
Brick Wall & Facings built by General Contractor
— Detail at. K. —

: DETAILS OF REINFORCED CONCRETE ROOFING.

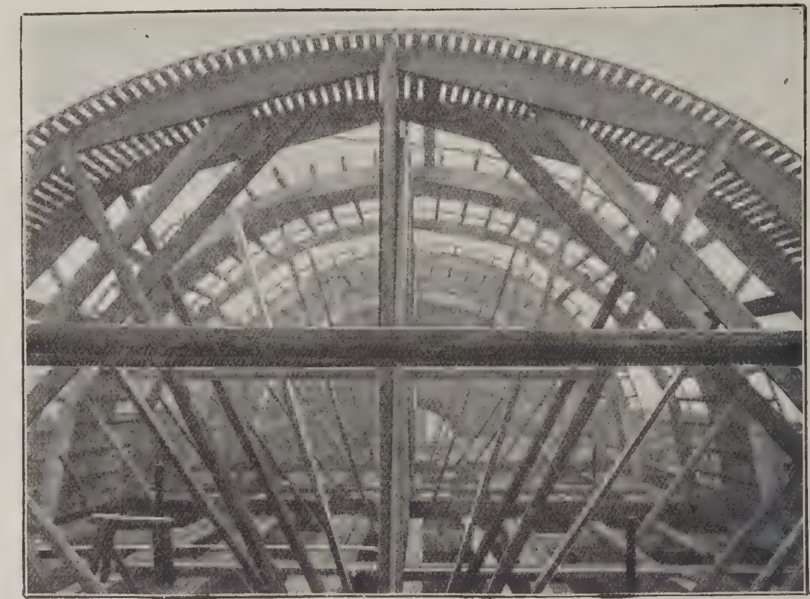
BOOKS.

The American Engineers' Pocket Book.

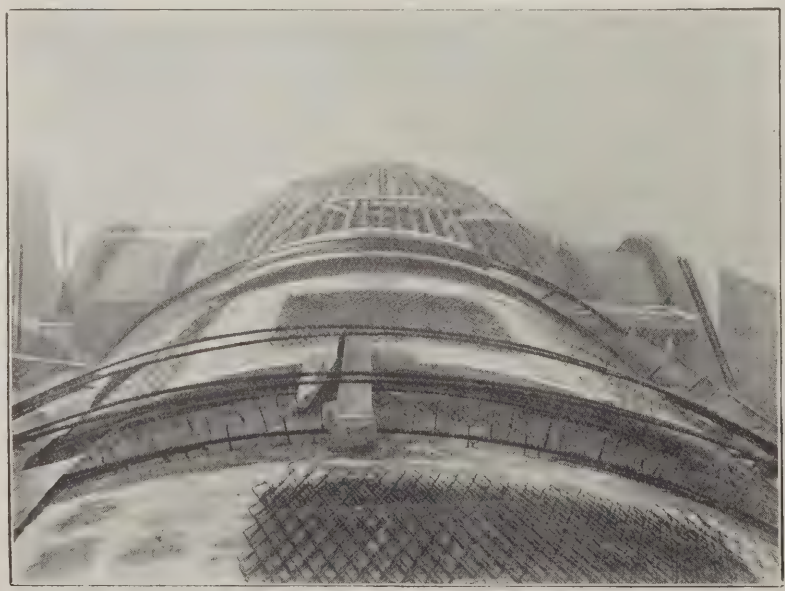
The publication of this 19th edition of Trautwine's "Civil Engineers' Pocket Book," which brings it up to the remarkable circulation of the 100th thousand of copies, affords the opportunity of some remarks upon the subject of engineers' "pocket books" generally, though some belonging to the category would require a very large pocket, and may more often be found on the desk. There are several standard works in the several chief countries for engineering practice.

These various books each have distinguishing characteristics, and no one can be said to be superior in every direction to the others. Considering the very great influence they have on engineering and building practice, and the importance they possess to the student and practitioner such publications are of national importance, and would, perhaps, be best undertaken by public bodies, though this has a detriment, as private enterprise is more readily moved by public opinion, and responds more quickly to new ideas and movements. The German engineers' pocket book is the only one conducted by a public society, and it must be confessed that it is a remarkably able and valuable production; it is very scientific and theoretical. The French book is also very comprehensive and shows national temperament in its architectural sections which might well form the model for the aid-books of other countries. The American pocket books are distinguished by their commercial and practical outlook, while the English books are a curious medley of the theoretical and practical. It would be a very praiseworthy work to form therefrom a compilation of the whole, and supply a translation for every important language.

Coming, however, to review this latest edition of Trautwine, we find it a very valuable production, and most wide in its application. It is a great favourite because it does not require any extensive knowledge of mathematics. Indeed, the original author, in his first edition, expresses the opinion that it was fortunate that few engineers were good mathematicians, for nature rarely combined high mathematical talent with that practical tact and observation of outward things so essential to a successful engineer. That point of view was coloured by the original author's own ability as a mathematician, though to a great extent he was to be commended for taking so useful a line with such courage, but since then we have progressed in engineering education, and many engineers can quite well follow and apply higher mathematics, which the modern teaching has made much simpler of acquisition. Therefore, though it is excellent to have results stated for application by those who have little mathematical knowledge, we think it would have been well to also include in the work higher mathematics and application to engineering design. One feature of Trautwine is most commendable, and that is the way in which elementary and advanced principles are explained in a short way so that the book is both a text book and a memoranda book; most of the other works tend to omit the elementary and intermediate steps, and give the final formulæ, which is a mistake, for one consulting such work should be able to see the argument to be able to apply the formulæ quickly and accurately. It is important that the user should know what he is about.



View showing temporary timbering for nave roof, nearing completion.
CHURCH OF ST. BARNABAS, SHACKLEWELL, LONDON. PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.



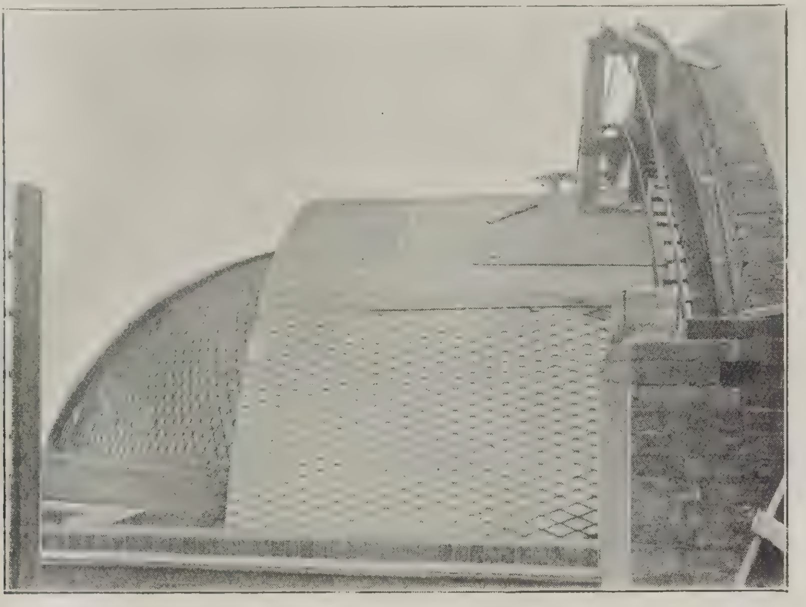
View showing nave roofing in progress and temporary timbering to dome, nearing completion.
CHURCH OF ST. BARNABAS, SHACKLEWELL, LONDON. PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

The 18th edition of 1902 was a tremendous advance on the others, and contained much new matter; and this nineteenth edition is a further improvement and extension. The most important additions are in connection with concrete and reinforced concrete, which subject has advanced rapidly in the past 8 years. The section of the work devoted to this is a very large one, consisting of about 200 pages, which in the small type used and abbreviated form are equal to about 400 pages of an ordinary text book. Two of the most valuable features of the section are the "Selected results of experiments and practice" and the "Digest of specifications" for concrete work. This chapter led to revision of the general information on strength of materials. The mathematical introductory chapters have been rewritten, and additional information included on steel and iron columns. The book should be in the possession of all engineers, architects, and builders with a knowledge of the English language. It is very good value for money.

"The Civil Engineers' Pocket-Book." By John C. Trautwine, revised by John C. Trautwine, Jr., and John C. Trautwine 3rd. 19th edition. New York: John Wiley and Sons. London: Chapman and Hall, Ltd. Price 5 dollars, or 21s. nett.

Testing Materials.

Professor Unwin's book on testing materials has, after an interval of 12 years since the second edition, now arrived at a third edition. In that time a considerable amount of investigation has taken place, while the Engineering Standards Committee has come into being, and the International Testing Association has done much to improve and standardise methods of mechanical testing. Professor Unwin has therefore found a good deal to note in his new edition, and he has carefully revised the whole, and made the book of considerably greater value. A knowledge of the methods of testing for strength should be possessed by every engineer and architect, for upon such tests is our structural designing now based. Personal study and experimentation will give, as no perusal of books can, an appreciation of the strength and value of materials, and will lead the engineer or architect to realise the practical nature of his work. Very many of the errors and blunders one constantly sees in designs spring from ignorance of the properties of materials, it being clear that the designers have not realised with what they were dealing. Everyone who has to deal with structural design should be able to realise in some degree the resistance of materials—to many persons the bald statement that a concrete cube has shown a crushing resistance of 300 tons per square foot conveys nothing, unless perhaps they may know that that is considered very good, but when a good many tests have been personally made and seen performed on concrete cubes with all the conditions of making a much more vivid idea is obtained, and one begins to get the power to realise instinctively the resistance of structural members, and can then begin to appreciate the loads and what is required to sustain them in full sized work. To this latter end, however, full-sized tests on structural members should be seen conducted. The testing of materials is now recognised as an essential part of engineering education, but it should also be required of architects and building construction students. To that study Professor Unwin's book is an excellent guide, as, indeed, it is to the expert and advanced experimental engineer. His treatise consists of three parts. In the first, the mechanical properties of materials are explained, that is, the phenomena and elasticity and plasticity, and the relations of stress and strain, so far as they have been scientifically ascertained. In the second, the apparatus used in the engineering laboratory is described. The third part contains a collection of the most complete and trustworthy results of testing of all the ordinary materials of construction. This latter is a valuable record, though it has its deficiencies. We are particularly surprised to find so little attention paid to concrete and reinforced concrete, upon which there has been so much investigation of recent years, and which is now considered of such great importance. We notice only slight reference to the fact that cubes of brittle material such as stone, brick, and concrete, give higher results than the true crushing resistance, because they shear on planes at a less inclination with the vertical than 45 degrees, and we do not notice any reference to the reason for this, which is friction on the shearing plane, nor to the correct shape of test piece, to secure a normal failure, being a prism of height 1½ times the side. In some respects, too, the title of the book is not quite correct—it is too all-embracing; for the testing of materials includes chemical and physical tests that are by no means adequately dealt with in the book. The value, however, lies in its being a record of Prof. Unwin's view on matters within his knowledge, and it is a source of original information in many directions. It is, of course, a book for every library.



View shewing expanded steel reinforcement for apse roof, in position.
CHURCH OF ST. BARNABAS, SHACKLEWELL, PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

THE MONEY ORDER DEPARTMENT, HOLLOWAY.

(*See illustrations, pages* 282, 283).

The plan given of one of the floors of this building shows the general arrangement of the beams and pillars. The particular method of reinforcement used for the beams is that known under the name of "Coignet System for Beams of Uniform Strength." This method of reinforcement presents the advantages of the most economical sections of steel and concrete in any section of the beam, the section of the steel in tension being greater in the middle portion of the beam and gradually growing less towards the points of support, in proportion to the bending moments. The ends of the bars are made use of to resist the shearing stresses by being bent upwards and hooked over a top bar. The shear members are also spaced gradually closer together at each point of support. They are all bent at an angle of 45 degrees. The reinforcement of the pillars consists of a certain number of longtitudinal principal bars, bound by a spiral bar of small diameter. The slabs are composed of a meshwork of principal bars and distributing rods. This is the third post office building which has been erected on the Coignet system of reinforced concrete for the Office of Works.

Sir Henry Tanner, I.S.O., is superintending architect for the Office of Works, and the contractors are Messrs. William King and Co.

STANDARD REINFORCEMENT.

As any industry advances, the development toward uniform methods and standard practice is necessary. For some time the need of standardised reinforcement has been apparent, and yet structural concrete is in itself, so adaptable and flexible in application, "built on the work," as it were, that standardisation has seemed almost impossible. On the other hand, there are certain fundamental needs in concrete reinforcement that must be met. Consensus of the best opinion, based on study, tests, and observations, show that rigid attachment of the web reinforcement develops a maximum efficiency; also that web reinforcement should be securely fixed in the top fibre of the beam; and last, but not least, the reinforcing steel must be held in place throughout the operation of pouring and tamping concrete, so that the steel is in its exact position within the finished structure, to meet the stresses for which it is designed. Any reinforcement, "standard" or not, should at least approximate the above conditions.

In structural concrete, there is now and always will be a large element of the "personal equation," says "Concrete Engineering." It cannot be otherwise, for as it is now, the man bending and placing the steel rods is determining the neutral axis of the beam; the manner in which the carpenter frames a beam determines the amount of concrete in compression; the man behind the mixer holds in his hand the unit compressive value of the finished concrete, and the man on the floor placing the concrete, is determining the flange depth and T-beam efficiency.

In working toward the ideal, the last few years have advanced the industry greatly.

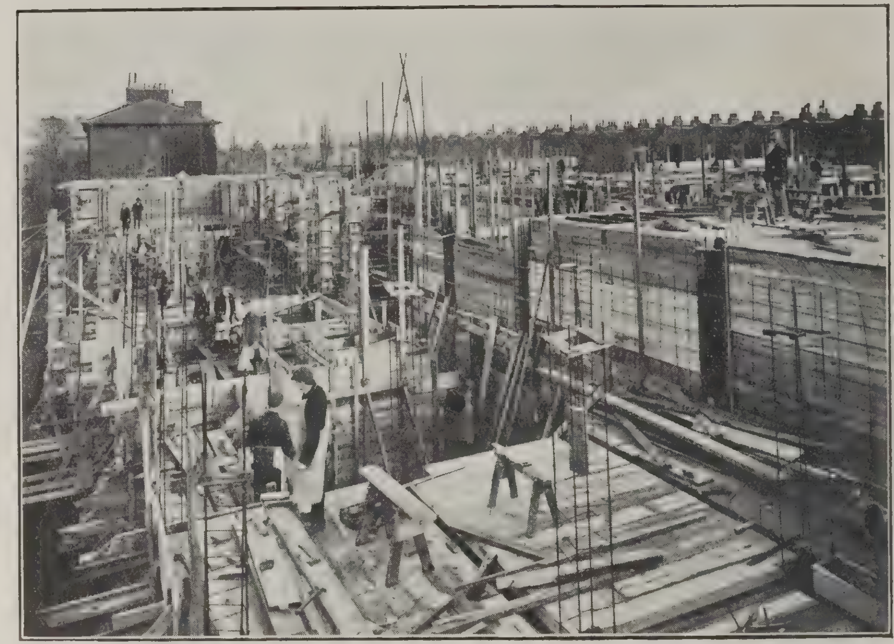
View shewing completed building.
CHURCH OF ST. BARNABAS, SHACKLEWELL. PROFESSOR C. H. REILLY, M.A., A.R.I.B.A., ARCHITECT.

Mechanical concrete mixers are in universal use. Mechanical proportioning devices are being developed. In the field of reinforcement, much has been accomplished, and the different unit systems and frames have marked a steady advance and cumulative progress toward better methods.

The latest of these, and the development that prompts this comment, is a standard reinforcement developed by one of the larger steel companies. They have carefully investigated the needs of the field, and with the aid of engineers, special tests, and investigation, have brought out an efficient reinforcement. The careful effort spent in developing this product merits more than passing attention, for an apparently standard product has opened the way for an endeavour toward extensive standardisation of design.

It is not so much the question whether or not this special reinforcement is the most efficient available or the final word in this development, for structural concrete, so long free and broad in its application, will wander long before submitting to the bridle of standardisation, to travel sedately the road of uniformity. But the fact remains that the industry has attained the dignity of a real well-founded endeavour at standard design.

As we progress toward better methods, all of these endeavours of earnest men help the industry toward the ideal. The problems of concrete reinforcement must be met by the men on the "firing line" in field and office, who must secure efficiency, economy, and effect, who must meet their associates in construction, owner, architect, engineer, or builder, as the case may be (and in the case of the builder, he must meet his material bills and pay-roll). These men are bringing structural concrete to success and renown, and every effort toward better methods is a "lift on the road." As such we see this latest development toward a standard reinforcement.



THE MONEY ORDER DEPARTMENT BUILDING. MANOR GARDENS, HOLLOWAY VIEW SHOWING WORKS IN PROGRESS.

(See previous page.)

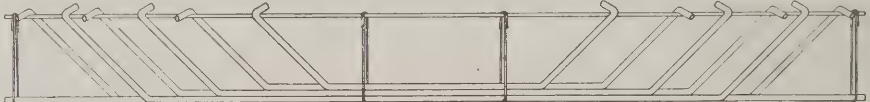
COLOURING CEMENT.

The difficulty of obtaining an even-grained surface of uniform colour on concrete work is one of the hardest which builders of concrete structures have to overcome. Concrete work is subject to many sorts of surface imperfections, of which the two most common are roughness or irregular surface texture, and discolouration or variability of colour. Either of these disfigurations will spoil the appearance of an otherwise beautiful structure, and the task of avoiding them is one that is occupying the attention of all who are building in reinforced concrete.

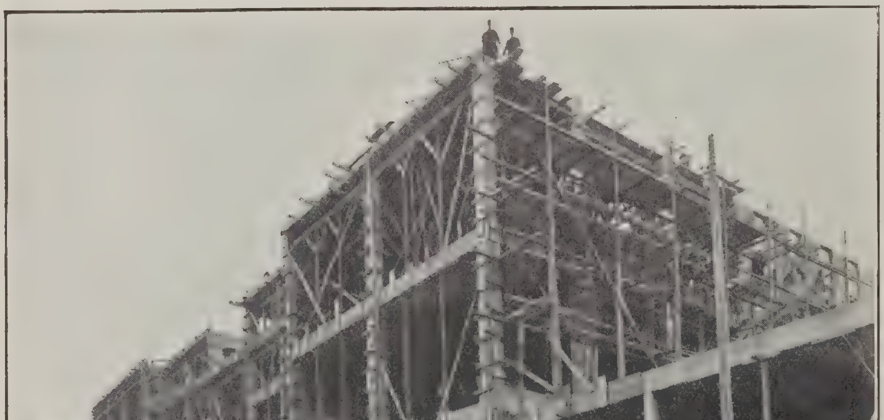
Unfortunately, the business of building in concrete is still in its infancy, so no regular set of rules have as yet been drawn up that can be followed to prevent with absolute sureness these two highly objectionable features. But experience has taught that certain causes produce certain results, and the causes of discolouration can be eliminated by the careful workman.

Causes of Discolouration.

Some of the causes of discolouration are obvious, and others are difficult to determine with any degree of exactness. Roughness or uneven surface texture is a common cause of variation in colour, since the alternate rough and smooth parts weather differently and collect and hold dirt and soot in different degrees. Another cause of discolouration is the use of different cements or different mixtures of cement in adjacent parts of the surface. No two cements are of exactly the same shade, nor are any two different mixtures alike in colour, and the concrete made of the various cements partakes of the variation. In the same manner, sand of different shades of colour or of different degrees of cleanliness will cause a streaky appearance in concrete surface. Dirt adhering to the moulds will also frequently stain the exposed parts.



THE MONEY ORDER DEPARTMENT, MANOR GARDENS, HOLLOWAY: REINFORCEMENT OF BEAMS.



THE MONEY ORDER DEPARTMENT BUILDING, MANOR GARDENS, HOLLOWAY: FRONT VIEW OF THE REINFORCED CONCRETE STRUCTURE.

Even when the smoothness of the surface is satisfactory and there is no criticism possible as to the kind of cement or sand used and their disposition and the cleanliness with which the work is done, concrete surfaces frequently vary in colour and have cloudy light and dark appearance. In many cases there seems to be good reason for attributing this to the bleaching out of lime compounds and their disposition as a form of deposit on the concrete surface. The extent of this efflorescence varies.

At times this deposit is so thin that it merely gives a lighter shade to the surface where it appears, and at others it will often form an encrustation of considerable body and thickness, which may be scraped off in the form of a thick white or yellowish powder.

A Chemist's Opinion.

An authority on the chemistry of cement has said in relation to this form of discolouration:

"It is primarily due to the variations in the amount of water used in the mortar of which the cement is composed. It will be readily understood that when any excess of water is used, segregation of the coarse and fine particles will take place, with a resulting difference in colour. When a large amount of water is used, the concrete is more porous, and the considerable percentage of lime liberated from the Portland cement in the course of setting is more readily brought to the surface at such a point. The amount of water in a cement, the surface of which is to be exposed, should neither be too small nor too large, but such a surface should be allowed to harden dry or the surface will be honeycombed.

Where the greatest care is used as to the amount of water added to the mortar, and to prevent its loss, and where separation of the mortar from the broken stone or gravel is carefully avoided in depositing the cement and ramming it in, the exposed surface after the removal of the moulds, is fairly uniform in colour. A more uniform colour will always be obtained when some puzzolanic material is ground in with the cement such as slag or dross. This hydrated silicious material combines with the free lime which has been liberated, and prevents its being washed out on to the surface. Exactness in the amount of water used in the concrete, when the elimination of the stain caused by the free lime is considered desirable, and the addition of some substance containing silica in an active form, are the two steps to be taken to produce a concrete surface which should present a uniform colour and pleasing appearance."

To Prevent Discolouration.

The measures whose adoption are recommended in the quotation just made are designed to prevent the occurrence of efflorescence by adopting certain precautions in the materials and workmanship of the original structure. Their adoption, however, if it gives the degree of success anticipated, is obviously the way to get at the root of the trouble.

THE NEW MONEY ORDER DEPARTMENT BUILDING, HOLLOWAY: GENERAL VIEW, SHOWING ONE OF THE FLOORS APPROACHING COMPLETION.

THE EFFECT OF SODIUM SILICATE MIXED WITH OR APPLIED TO CONCRETE.*

By ALBERT MOYER, ASSOC. AM. SOC. C.E.

The easy abrasion, or what is commonly called "dusting" of cement concrete floors in office buildings, has called my attention to the need of a material which could be readily and economically applied, resulting in the hardening of the concrete itself and not producing a veneer which would soon wear off under foot or other traffic.

I, therefore, started some experiments with sodium silicate, both in powdered form and in the form of water-glass. I found that the powdered sodium silicate, which can be obtained commercially, contained impurities which did not render it readily soluble in water. The sodium silicate in the form of water-glass of about 40 degs. Baumé was readily mixed with water, the object being to thin the sodium silicate down to a point where it would penetrate as deeply as possible into the pores of the concrete, making several applications until the pores were all filled and the sodium silicate flushed to the surface. That which flushed to the surface, being soluble, was readily washed off with water, and that which remained in the pores having come in contact with the lime and other alkalies, hardened into what we may term "mineral glue." From experiments extending over several months, I found that we had obtained the results we had been striving for.

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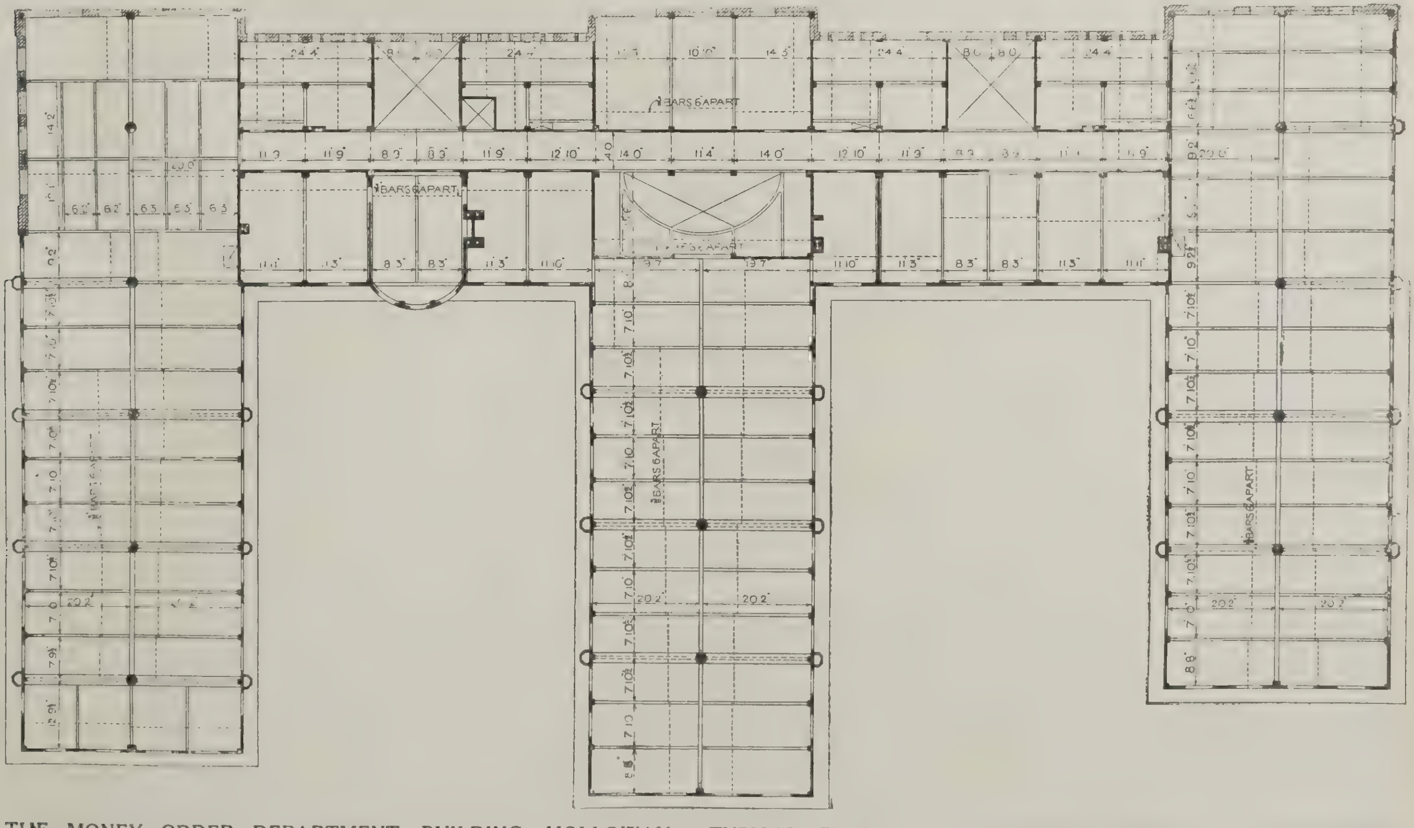
*Read before the American Society for Testing Materials, Atlantic City, N.J.



THE MONEY ORDER DEPARTMENT BUILDING, HOLLOWAY: TYPICAL FLOOR PLAN, SHOWING GENERAL ARRANGEMENT OF THE BEAMS AND PILLARS.

This suggested various other uses, all of which had the object in view of hardening and waterproofing the surface of concrete; such as the protection of arrises, cast stone, waterproofing hollow concrete block, hardening, waterproofing, and protecting interior surfaces of cisterns, and protecting buttermilk vats against the action of lactic acid. There would also be included the protection of porous concrete surfaces against the action of oils, preventing efflorescence, seeping out of soluble salts from Portland cement mortar, concrete, or stone, and the possible prevention of hair cracks and crazing.

It is also entirely within the range of possibility that such treatment of interior and exterior surfaces of concrete may be of valuable assistance in solving the drain tile, alkali, and sea water problems. After the tile has been made and set hard for two or three weeks, and has then dried out so as to permit the introduction of sodium silicate in thin solution into the pores, the drain tile may be immersed into a bath of sodium silicate, composed of 1 part water-glass, 40 degs. Baumé, and 3 parts water, a total of four parts. Immersion must be of sufficient duration to allow the tile to absorb the maximum quantity. It is then removed from the bath and allowed to dry. Thus the sodium silicate coming in contact with the lime and other alkalies present in the concrete forms into a mineral glue which is insoluble and very hard.

I believe I have suggested a sufficient number of uses to illustrate the possibilities of sodium silicate applied to concrete.

The action of sodium silicate applied to dry concrete is vastly different from what it is when it is mixed with the cement while the concrete is being gauged. Through the courtesy of S. Warren Hartwell, and W. R. Dunn, and some opinions, advice, and suggestions from Dr. Allerton S. Cushman, we carried on some experiments with cement and sand briquettes which were mixed with a thin solution of sodium silicate and water, compared with normal briquettes treated in the usual way, and also compared with normal briquettes afterward immersed in water containing 10 per cent. of sodium silicate.

I also made up some briquettes of 1 part hydrated lime, 3 parts standard sand and water; also briquettes of 1 part hydrated lime, 2 parts building sand mixed with a solution of 1 part water-glass, 2 parts water; the initial set was half an hour, final set 1 hour. As soon as dry, they were immersed in a solution of sodium silicate, 1 part water-glass, 40 degs. Baumé, 3 parts water. After the briquettes had absorbed the maximum amount of this solution, they were allowed to dry out. They had become hard but showed very little strength in tension. They were then immersed in water for several days, no disintegration taking place. The object of this test was to ascertain the solubility of lime briquettes so treated.

A series of briquettes was made of 1 part Portland cement, 3 parts Ottawa sand, mixed with the usual quantity of water containing 10 per cent. of sodium silicate. The result showed a falling off in strength compared with the same sample of cement mixed with the usual quantity of water, no sodium silicate added, and the briquettes immersed in water in the usual way. This falling off was noticed both in the 7 and the 28-day periods.

Briquettes of 1 part cement, 3 parts Ottawa sand, mixed with the usual percentage of water containing no sodium silicate; after 24 hours these were immersed in water containing 10 per cent. of sodium silicate, with the result that the strength was increased, as compared with the sample of cement treated in the usual way, no sodium silicate having been added in mixing the cement with the water.

Effects of Strength.

No neat cement tests were made for the reason that the comparisons we wished to obtain were those which would tend to show that the introduction of sodium silicate into concrete after final set would strengthen such concrete. Reducing the results to figures, I give below the average results of a full set of experiments:

One part Portland cement, 3 parts Ottawa sand. Briquettes mixed with the usual amount of water and immersed in water:

7 days—285lbs. per sq. in. cross-section.
28 days—347lbs. per sq. in. cross-section.

Mixed with water containing 10 per cent. sodium silicate and immersed in water:

7 days—117lbs.
28 days—203lbs.

You will note a considerable falling off in strength.

Mixed with the usual amount of water containing no sodium silicate and after 24 hours immersed in water containing 10 per cent. of sodium silicate:

7 days—360lbs.
28 days—497lbs.

Quite a considerable increase in strength.

We assume that the sodium silicate coming in contact with the lime or other alkalies and alkaline earth salts gives a reaction which causes a deposit of silicic acid which forms into an insoluble gelatinous silica and hardens into and acts as a mineral glue.

Sodium silicate mixed with the cement while the mortar is being gauged quickens the setting time, an arbitrary period determined by the stiffening of the mortar to a degree which will bear a wire or needle under certain pressure. The final hardening, however, never attains as great strength as normal, slow-setting concrete.

I mixed up some water-glass in proportion of 1 part water-glass, 3 parts lime water—that is, water containing all the lime which it would take up in solution, then decantered off. On standing for a few minutes it became a jelly. I then mixed up a solution of sodium silicate and ordinary water, mixed with it neat cement to a wet consistency, probably 30 per cent. water. Within a few minutes, this mass had become a stiff jelly; this jelly is very quickly formed, thus quickening the time of setting, which in reality is merely a stage of definite stiffness, and has little or no relation to the time of maximum hardening. This jelly, having been formed before the cement had time to harden, interfered with the process and weakness resulted, which is shown by the tests.

I would suggest that those interested in this subject experiment by using a retarder, such as a 10 per cent. solution of sodium hydrate caustic or a similar solution of magnesium sulphate. If the formation of the gelatinous silica is retarded until the cement has had an opportunity to set, it is possible that the strength of laboratory specimens will be increased. We might thus obtain some information as to the effect of sodium silicate on concrete if experiments are made extending over long time periods. A set of specimens in the form of briquettes and cubes for tensile and crushing strength may be made and stored in water, breaking these specimens in regular periods of time up to two years. As far as I know, this has not been done, and might possibly lead to some interesting data on this subject.

Surface Application Gives Strength.

Concrete is strengthened and hardened when sodium silicate in solution is applied to the surface. The concrete has hardened normally, and that which is porous will allow the introduction of sodium silicate to some little depth in the pores, the depth depending upon the porosity of the concrete. The action of forming into a jelly thus takes place without interfering with the process of hardening, and this gelatinous substance forms into an insoluble mineral glue.

Without experimental proof and based upon the theory of maximum density, it is my opinion that this method or treatment by the application of sodium silicate to concrete surfaces, will set as waterproofing and prevent the action of salt, alkaline, or sulphurous water on the surface.

This is a field which requires some laboratory experiments which should be followed up by field experiments. Sodium silicate in the form of water-glass is very cheap, less than ½d. per lb., and a pound thinned down with water to the proper consistency that will enter the pores of the concrete will cover quite an area. I treated the floors of the office in which I am located, covering some 1,400 sq. ft., at a cost of ¼d. (three mills) per sq. ft., which includes all labour and material.

Should exhaustive experiments and field tests demonstrate by long-time results that there is no further action of water on surfaces so treated, and that the sodium silicate remains in the form of an insoluble mineral glue, many very serious problems have been solved, such as the action of alkalies or sulphurous soil on drain tile and other concrete products, the action of sea water on concrete, waterproofing tanks, the protection of tanks against certain acids and oils, and the dusting of concrete floors.

TRADE AND CRAFT

Interphones and Private Line Telephones.

The Western Electric Company, Ltd., Norfolk House, Victoria Embankment, W.C., have issued "Bulletin No. 4003," entitled "Western Interphones and Private Line Telephones," in which are described and illustrated various types of instruments designed to meet the growing demand for intercommunication telephones in private houses, hotels, and business premises. In the automatic replacement type, key-buttons automatically return to their normal position as soon as the microtelephone is replaced on the switch-cradle. These telephones are readily adapted for table or wall use, but both wall and table patterns are supplied. Wall sets of the new metal type are made in two sets, namely, a non-flush set for mounting on a wall, and a flush set for recessing in it. All the interior apparatus is readily accessible. Several patterns of domestic telephones are listed for use with existing bell circuits; but the use of separate metallic circuit instruments with either local or central battery is strongly advised where the number of stations exceeds five or six, as by this system conversation is transmitted very clearly through a cable made up of twisted pairs. Some useful accessories are also listed in the booklet, which is of pocket size, and is primarily intended for the use of contractors and practical electricians, who, by arrangement, can have their own names and addresses printed on the cover.

FEDERATION NEWS.

Midland Centre Conciliation Board.

A special meeting of the Midland Centre Conciliation Board was held at the Derwent Hotel, Derby, on Tuesday, 30th August last. In the unavoidable absence of the chairman (Mr. J. B. Whitehouse), Mr. R. Tompson (General Union of Carpenters and Joiners) presided.

The meeting was held to consider a dispute which the Mansfield Local Conciliation Board had been unable to settle. It arose through notice given by the Mansfield carpenters and joiners for alterations of rules in regard to rate of wages, winter hours of work, overtime, piece-work, etc., and notices for alterations of rules. Messrs. H. T. Shepherd and T. Vickers presented the case for the operatives, whilst Messrs. J. Beckett, R. Moore, and C. G. Percival represented the employers. The following decisions were arrived at by the Board:—An increase of ½d. per hour (8d. to 8½d.) in the minimum rate of wages as from 1st September, 1910; the hours of work to be as suggested, with the exception that Rule 2c be altered as follows:—"remaining 12 weeks—Monday to Friday, 8 a.m. till 4.30 p.m., with half-an-hour for dinner, on outside jobs, and 8 a.m. to 5 p.m. in shops; Saturdays, 8 a.m. till 12 noon;" overtime not to commence until a full working day has been completed, except in cases over which the workman has no control, or time lost owing to inclement weather. Rule 6 (piece-work, etc.) to be altered as suggested by the operatives. Six months' notice to be given for alteration of rules, such notice to expire on 1st May in any year.

The Board suggested the following addition to Rule 11 (alteration of rules):—"Counter notices shall be given on or before 1st December. Failing a settlement on or before 1st March, the matter in dispute shall be referred to the local Conciliation Board."—FRED. W. AMPHLET, Employers' Secretary.

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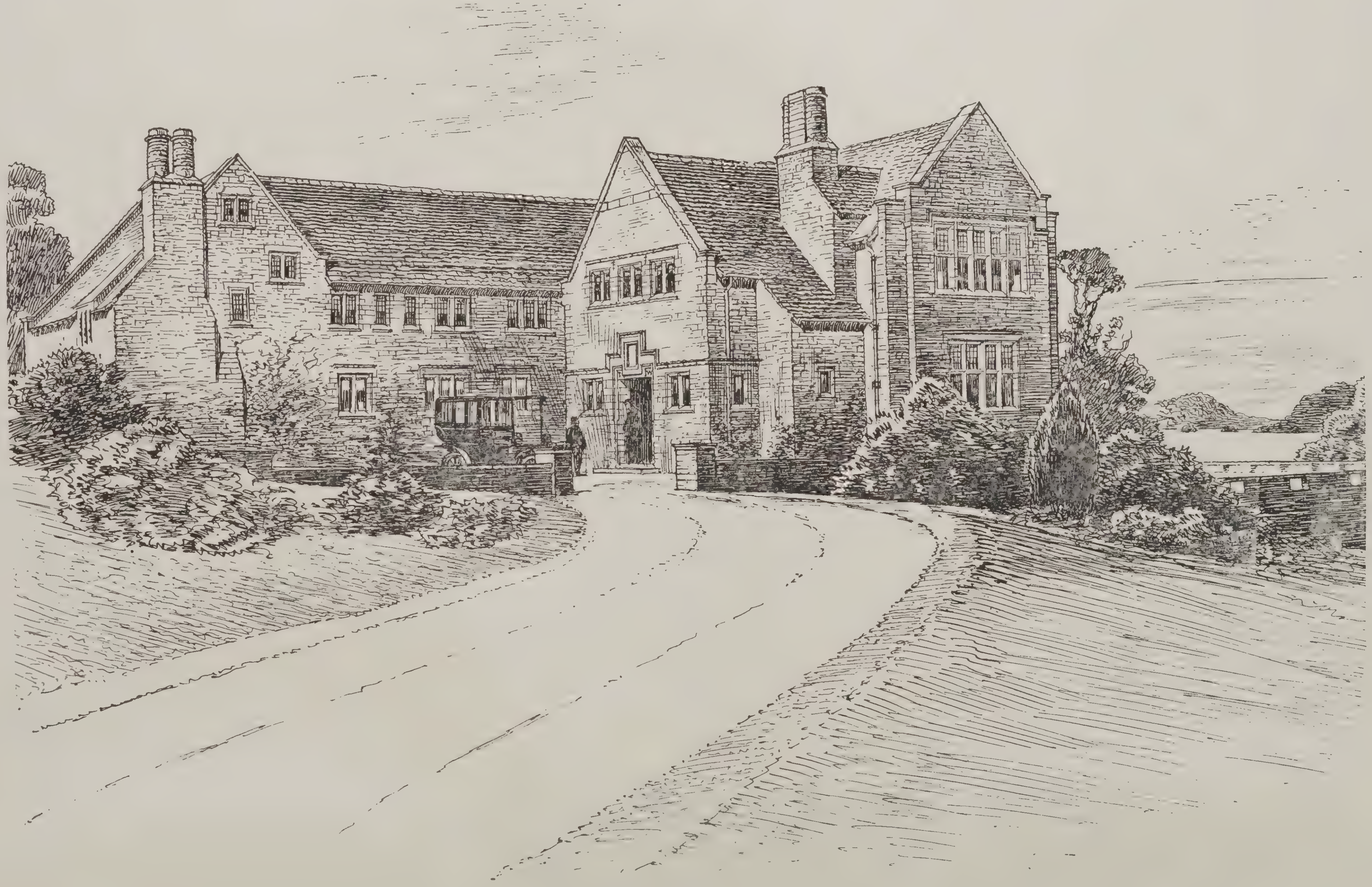
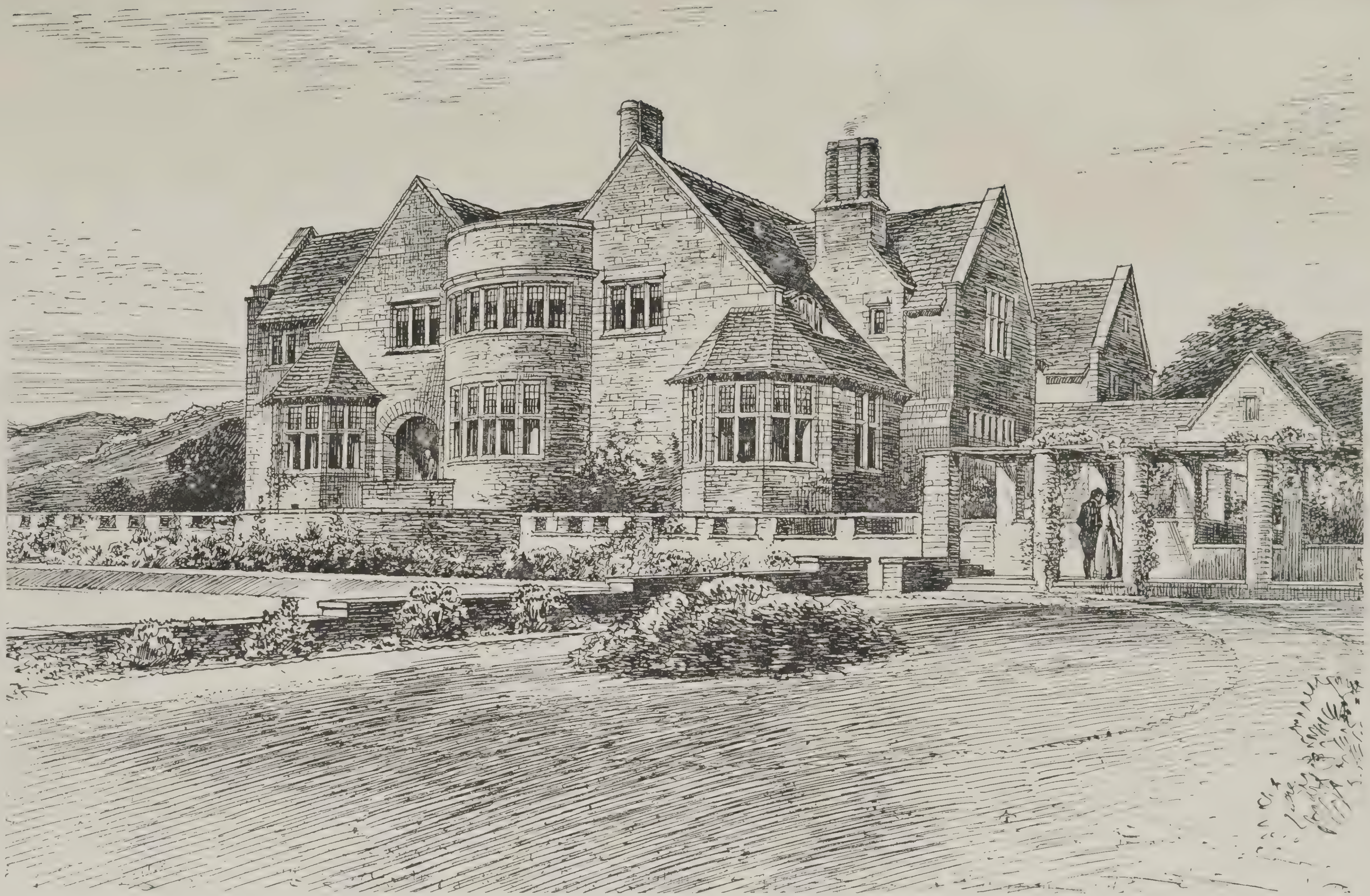
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *September 21st*, 1910.



Entrance Front.



Garden Front.

"CRAGWOOD," WINDERMERE. F. R. DUNKERLEY, F.R.I.B.A., ARCHITECT.

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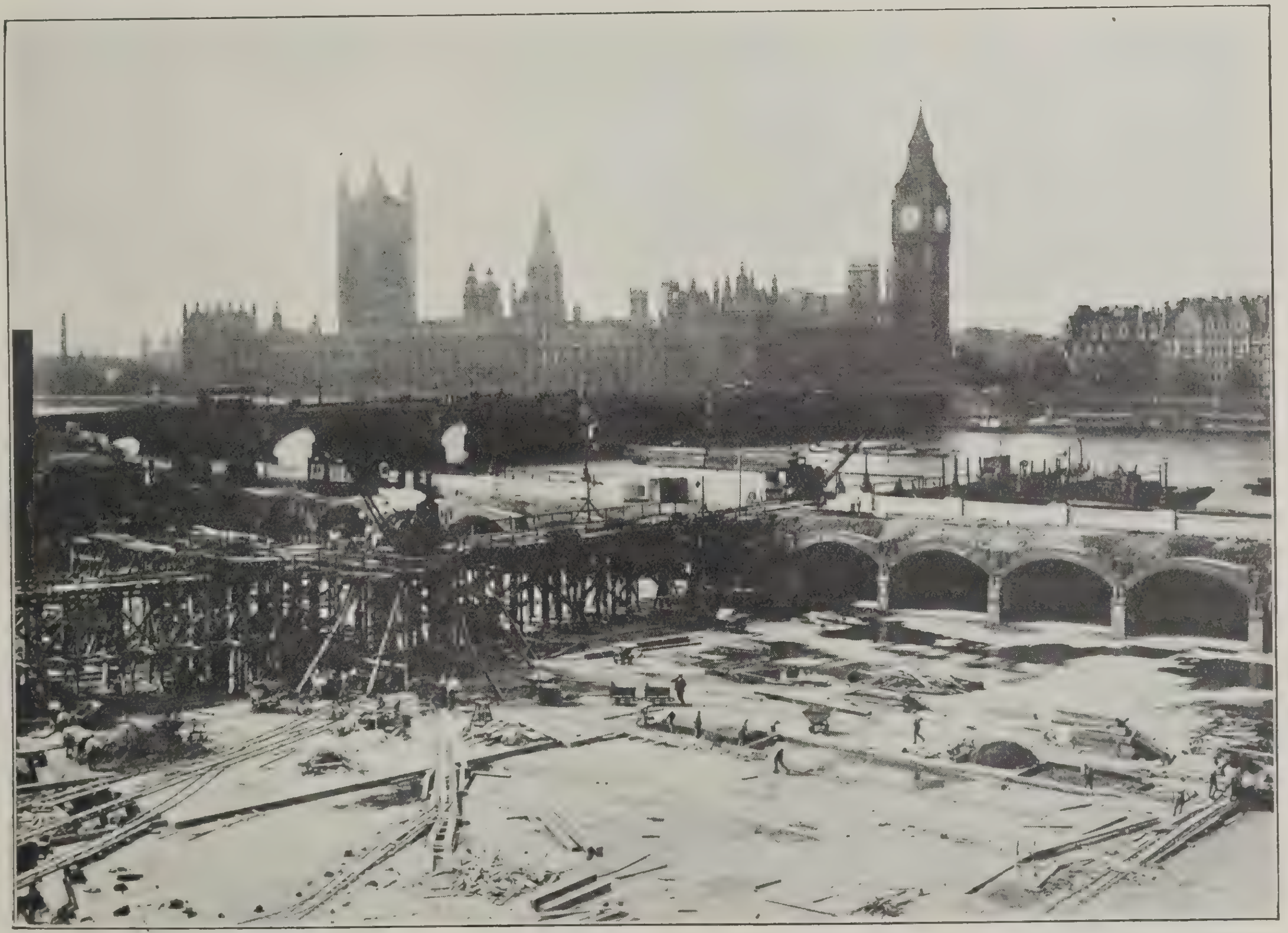
THE ARCHITECTS' &
BUILDERS' JOURNAL

WEDNESDAY,
SEPTEMBER 21st, 1910.

Volume XXXII. No. 816.



Record.

THE PROGRESS OF THE LONDON COUNTY HALL FOUNDATION WORKS: VIEW LOOKING ACROSS THE SITE. RALPH KNOTT, ARCHITECT. F. & H. HIGGS, CONTRACTORS. PRICE & REEVES, CONTRACTORS FOR THE RIVER WALL.

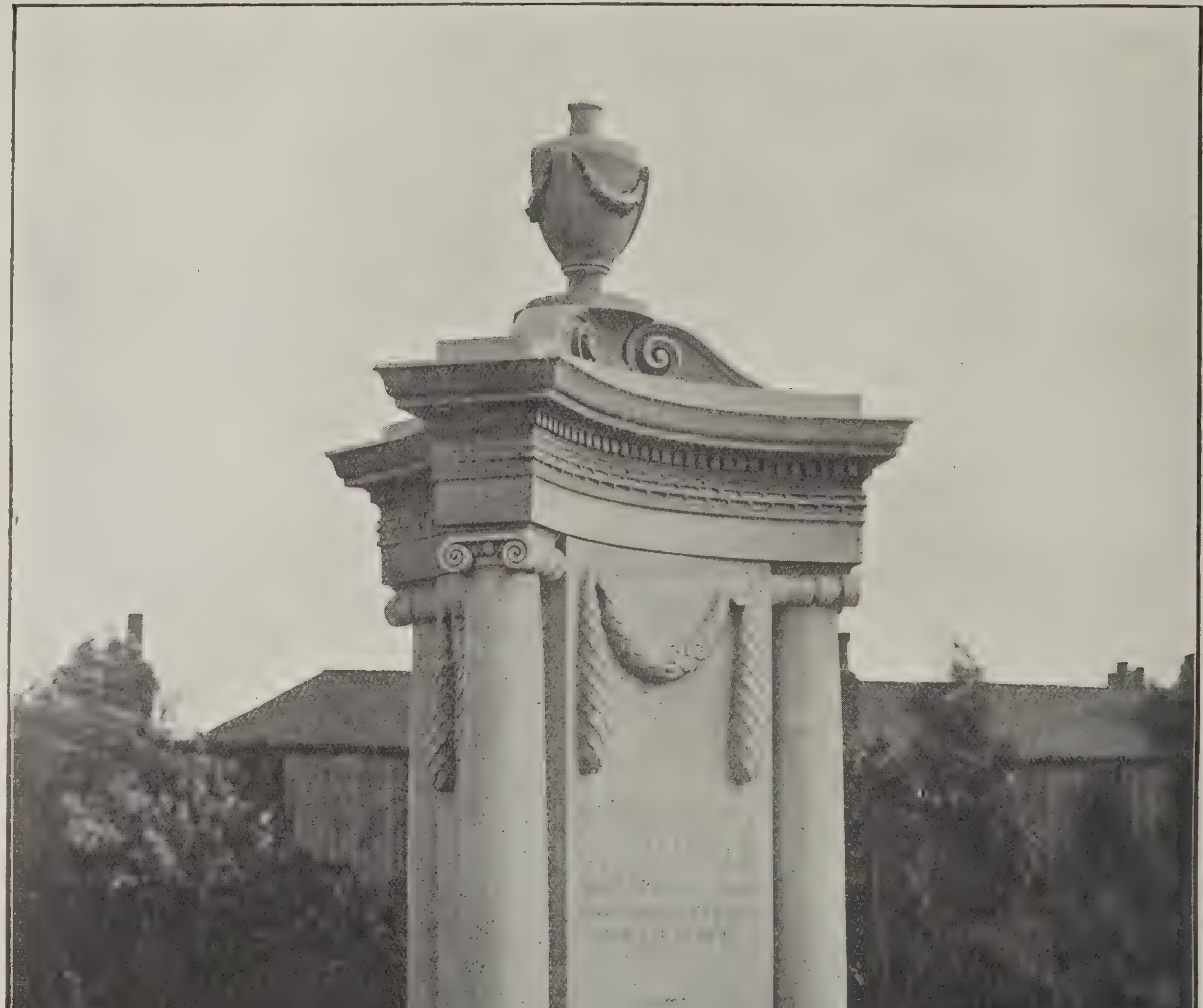


Photo : Russell.

MEMORIAL DRINKING-FOUNTAIN, WANDLE PARK, NEAR WIMBLEDON.
H. H. STATHAM, F.R.I.B.A., ARCHITECT.
(See note and plans, page 289.)

THE ARCHITECTS' &
BUILDERS' JOURNAL.

SEPTEMBER 21st, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 816.

Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Notes on Town Planning Schemes.

ARCHITECTURAL study in England seems suddenly, in these last three or four years, to have taken a leap from the particular to the general; in place of the study of the design of separate buildings, our principal attention and effort seems to be now claimed for the study of the arrangement and collocation of buildings in reference to general effect and general convenience. It has dawned upon us, somewhat late in the day, that a city is or may be an architectural entity in itself, with a general design to which individual buildings should be subservient.

Somewhat late in the day, for our large cities are all built, and have mostly developed in a somewhat haphazard manner from small beginnings, and the chance of "founding" a city and laying it out from the first on a fully considered plan is one that is hardly likely to occur in these democratic times. Such great works were done by kings and conquerors of old, who could do as they pleased without consideration of economic conditions, or of the legal claims of neighbouring owners. Any occasional modern example has been due to personal power and initiation. Nancy is built as a city that is at unity with itself, because it was practically the private property of a great personage, who had it designed for him; but that is an example on a small scale only. There is something like this, however, in the development of the modern plan of Paris, which was commenced by one autocrat and carried further by another; but the example thus set has had a permanent effect, so that the present democratic authorities of Paris seem as anxious for street improvement and the formation of vistas as the third Napoleon himself.

Bath is perhaps the only example in modern England of a city of which the most important portion, architecturally, was built at one time and with a special regard to effect; a condition which the present authorities of the city seem disposed to spoil if they can. In London we are only just beginning to arrive at such a perception of the importance of system and symmetry in planning as was in existence in Paris a century ago; and it is only a few weeks since that we saw a small new monument deliberately placed out of axis with its most important architectural neighbour. Quite recently, too, we had the spectacle of the absurd *fiasco* of the so-called Marble Arch improvement, where the original suggestion, which had some merit, was entirely spoiled and rendered nugatory by the action of the Office of Works, under the pretext of producing a more commodious line of route for vehicular traffic. Commodious lines of route are of practical importance; but if a city is to have architectural dignity something more than that must be sought for. And so far it may be said that it is always the official authorities who stand in the way of architectural laying out of sites. There was another instance a good many years ago, when the Constitution Hill Arch was moved (again under the pretext of providing for traffic accommodation), and placed facing a shapeless *place* with shapeless islands in it, in the kind of manner which one might have expected from the normal estate agent. This, again, was the Office of Works; it is the official authorities who spoil everything; it is from outside, from members of the architectural profession, that any suggestion for a higher standard in city improvements emanates. That is why the forthcoming Town Planning Congress, organised by the Institute of Architects, is an institution of considerable importance, and should receive every support from those interested in the improvement of London, and of other large English cities. It may be the means of educating both the public and the official mind to a higher perception as to the architectural treatment of cities.

The great difficulty in carrying out improvements in an existing city lies of course in the fact that both the width and the line of streets have been settled already by accidental circumstances, and without any regard to future development or to any general scheme. The one great London improvement of modern times, the Thames Embankment, was fortunately not hampered in this manner; we had to cover and build up a river foreshore, and there was a clear field for the work, and the lines were laid down for it by Nature herself. The Victoria Memorial road was also comparatively easy of accomplishment, as the greater part of it lies through park land unencumbered by buildings, though the scheme has been sadly shorn of its effect as originally contemplated. When we have to deal with existing streets, the problem is very different. Except where the existing property is so old and so inferior in value that its removal is an obvious advantage, projected improvements have to take into account the lines of existing streets and make the best of them, so far as they will lend themselves to the general scheme; or their widening, as in the case of East Piccadilly, can only be achieved by a long and gradual process of alteration bit by bit.

The first necessity, therefore, in taking in hand the improvement of an existing city, is to form a comprehensive scheme of which every detailed improvement should form a part, so that it should not be wasted, but should form one step towards the realisation of a general scheme. For London we have at present no such scheme. A great public improvement has been made in the formation of Kingsway and Aldwych; one of the class of improvements which are effected by the destruction of streets and buildings which were out of date, and which are so little missed that most of us have already nearly forgotten what was there. Even in this, however, there has been some want of comprehensiveness and foresight. The plan of the island of building land between Kingsway and the Strand was laid out without sufficiently considering how it would affect the junction of the Strand and Fleet Street, and hence gave rise to much criticism in regard to the road line at that point. What the critics forgot was that the western portion of the block was already built, and that no alteration could then be made without destroying the symmetry of the plan and the possibility of laying out the whole block to the best advantage. It is true that a fine rectangular *place* might have been formed there by setting back the northern side of the Strand to a line with the northern side of Fleet Street; but that should have been thought of from the first, and the whole plan made accordingly, before any buildings had been erected. After their erection had been commenced, it was too late to alter the whole disposition of the ground. It was a lesson on the importance of thinking out the effect of a plan fully before actual building.

In the second issue of the new "Town Planning Review" which has been started under the auspices of the University of Liverpool, there is an important article, accompanied by a plan, on a proposed general scheme for the improvement of Liverpool, representing exactly what we ought to be getting out in regard to London. It is almost melancholy to look at the plan, with its wavering lines of irregular streets running at haphazard, and think what Liverpool might have been could it have been built at one time on a comprehensive plan. For the situation has magnificent possibilities of effect. The land, in its general trend, slopes upwards from the shore of the broad estuary of the Mersey, and one could fancy the town built in a series of terrace formations rising up from the river. There are still points to be made, however, and some of the suggestions in the article, read along with the plan, are of considerable interest. We can only refer to one or two which are capable of being easily described. Some of the existing features belong to the time, not so very far distant, when Liverpool was a much smaller place than it is now. The city runs north and south along the river bank (the south end being what residentially is the "west end"), and the line of the wide Castle Street and South Castle Street runs parallel with the river, and its vista is closed at the south end by the Custom House and at the north end by the Town Hall, with the quadrangle of the Exchange Flags behind it. This is one of the difficulties complained of in the article; the street is architecturally shut in at each end. But for old Liverpool that was suitable enough; this was the main part of the town, and the two large buildings stood in a dignified position. Now they would like (or the author of the article would) to connect Castle Street more directly with a northern street just in its line, Old Hall Street (a name which preserves the memory of an old mansion), without going round the Exchange buildings; and we gather that the proposal is to open out the centre of the north side of the quadrangle to Old Hall Street, and make it a public square through which traffic could pass on each side of the Town Hall. It seems rather a doubtful scheme. A quadrangle is—a quadrangle; a good bit of architectural effect; its whole effect of seclusion is spoilt by making a breach in the centre of one of its sides. We gather that since the new Cotton Exchange was built the use of "The Flags" as the place "where merchants most do congregate" is at an end; they can congregate under cover in the new Exchange. Why not, then, transform the old Flags into a garden with fountains, and add an ornament to the city? It would be a better use for it than to drive cabs through it for the sake of a shorter cut. Wyatt's buildings round the quadrangle are worth keeping intact, too; the author is quite right, however, in his conjecture that the old quadrangle was architecturally much superior to Wyatt's; it was a fine range of buildings, exactly in keeping with Wood's Town Hall, and was condemned solely because the offices were small and insufficiently lighted; and Wyatt made a great mistake in not keeping to the same style, instead of introducing a much more busy style of architecture, out of keeping with the Town Hall.

The Cathedral is another point touched upon. We consider the position of the Cathedral one of Liverpool's mistakes. It is true that on the east side, towering above the lower level of the St. James's Cemetery Gardens, it is a site for fine effect; but it is an out-of-the-way site, as far as streets are concerned, with no central or axial approach. It should be explained that owing to the exigencies of site the Cathedral lies nearly north and south, the ritual "east end" being the south end. You get to it by a street running not up to it, but *past* it. The proposal in the improvements plan is to continue Renshaw Street, which runs straight up towards the north-west angle of the Cathedral, but stops short of it, up to the Cathedral, so as to get a certain vista to it; but even then the vista and the approach is only up to an angle of the Cathedral, not axial with it. To be sure, if this street alteration had been contemplated in advance, the Cathedral might have had an angle tower designed for the situation. But the right place for the Cathedral would have been what, at the time of the site controversy, was called "the London Road site," where it would have had a central and axial approach up to its western façade. As it is, it is a cathedral in a corner, and it would take a very extensive street alteration—almost a re-planning of that part of the city—to make it otherwise.

We see that there is an important new thoroughfare proposed, running down to the docks in a more modern quarter of the city, as a new entrance to the city from the east, with a crescent near the river, and wide spur streets running up to north-east and south-east; the latter is intended to connect St. George's Hall more directly with the river front; it is said to be axial with St. George's Hall, but it is not quite so according to the map. One effect of this would apparently be to shift the principal access to the city from the river to a point farther north than it is at present. How far that would be an advantage we can form no idea. But it must be admitted that St. George's Hall, by far the finest building Liverpool possesses, though well placed as to its immediate surroundings, is only connected by rather indirect routes with the river front; from most directions you come on it, as it were, by surprise, round a corner; and a proposal to form a direct road with a vista to it is worth consideration.

We recommend the article and the map to our readers' attention, as an interesting suggestion for a definite improvement scheme for a large city.

Sound-proof Partitions.

REFERRING to the letter addressed to us last week by Mr. W. B. Hopkins in regard to his disappointment with the behaviour of some partitions with spaces between them, which failed to exclude sound, we should say that there is rather a mistaken idea as to the efficacy of spaces. If you take a very thin and light form of partition, which in itself would certainly not be expected to exclude sound, and place a similar partition two or three inches from it, and then expect them to exclude sound, it is expecting more from mere space than can be reasonably expected from it. If a fairly thick and solid partition has been erected which would be nearly sound-excluding in itself, no doubt the erection of another such with a space between them would render it more efficient; but we doubt if air space will do much to help partitions which, if set up alone, would be easily permeated by sound. And there is another point to be considered in connection with the subject. It is a question whether it is all desirable to have in a building a considerable quantity of empty space, either in walls or partitions, which no one can get at or examine. They may be supposed to be entirely vermin-proof, and dust-proof, and so on; and may be so when new. But one never knows what goes on, or what decaying and unwholesome matter may collect, in such unexplored spaces.

A Memorial to Florence Nightingale.

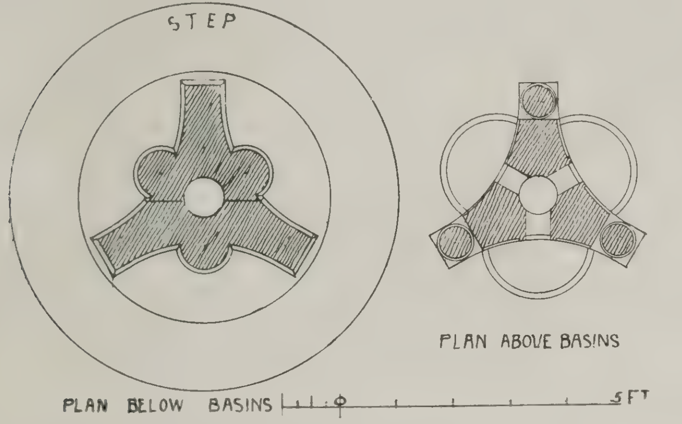
THE London City Corporation contemplate raising a memorial to the late Florence Nightingale, who, it will be remembered, was presented, somewhat belatedly, with the Freedom of the City in 1908. One proposition is that the memorial should take the form of a bust. We trust that it will; for Miss Nightingale would make a particularly good subject, and a bust, if not a statue, of her would be a gracious augmentation of the very scanty number of public memorials to women.

NOTES AND NEWS.

Memorial Drinking-Fountain, Wandle Park.

This memorial fountain has recently been erected in what is called the "Mill-pond Garden" in connection with Wandle Park, near Wimbledon; a piece of ground surrounding a small lake, which was purchased and laid out by Mrs. Richardson Evans, of Wimbledon, as a gift to the public and an addition to Wandle Park. The fountain is a memorial to a relative, one (according to the inscription on the fountain) "who loved Nature and his fellow-men," and from whom the funds partly expended in this good work were inherited.

As the fountain was to have the function of a monument and to bear some inscriptions, it was necessary that it should assume an architectural character somewhat beyond that of the mere practical requirement of a drinking-fountain pedestal, and the triangular plan was adopted as affording a little variation from ordinary erections of the kind. The accompanying diagrams give the plan below and above the basins.



On one side is the memorial inscription already referred to; on another the statement that the fountain and grounds are vested in the National Trust; on the third side is engraved the following verse from Matthew Arnold:—

> "Calm soul of all things, make it mine
> To feel amid the city's jar,
> That there abides a peace of thine
> Man did not make, and cannot mar."

The inscriptions are in incised letters, from the architect's drawing. Mr. H. H. Statham, F.R.I.B.A., is the architect. The stonework was executed by Messrs. Farmer and Brindley, in selected white Portland stone. The plumbing work was done by Messrs. Parsons and Townsend, of Wimbledon. The taps project through removable moulded gun-metal covers, behind which are openings wide enough to allow of inspection and handling if required. The small wreaths on the urn finial at the top are gilt.

Ireland's New Form of Contract.

It will be seen from a contribution which appears in another part of the present issue, that the Royal Institute of Architects of Ireland, and the Dublin Master Builders' Association, have between them evolved a new form of contract which, while based on the English form, is in some respects an improvement on it as regards the builder's point of view. The Irish form has specific provisions against those delays in settlement which are always vexatious, and are too frequently ruinous to the contractor. The surveyor is required to furnish a copy of his valuation of the variations, not only to the contractor, but also to the employer, who is thus placed in a position to object at once to items which he may possibly feel inclined to submit to arbitration. The architect is required to issue his penultimate certificate within an agreed and definite number of days after the delivery of the surveyor's statement of extras and omissions to employer and contractor. The whole intention is to promote prompt consideration and settlement of the accounts by providing definite dates at which they may be presented and considered; the architect being thus relieved of considerable responsibility, which he can transfer to the employer by adhering to the specific terms of the contract, while the employer will at all events have everything placed before him in a businesslike way, and will thus in a manner be prompted to be prompt, whether in declaring his objections or in settling his accounts. Whether he and the architect will take kindly to this mild compulsion of documents and dates is yet to be seen; but there seems to be no sound reason why both should not willingly acquiesce in an arrangement to which the Royal Institute of Architects of Ireland has consented, and which seems to bring building contracts more into line with modern business methods. Whether, if the Irish form of contract is found to work satisfactorily, the English form is likely to be modified accordingly, is a question about which it would be premature to speculate.

Carillons for London's County Hall!

The suggestion has been made that the builders of London's County Hall should seriously consider the possibility of installing "a worthy carillon with a keyboard." It is urged that "recitals could then be given in the summer months, and a delightful addition would then be made to the free concerts which are now provided in the parks and open spaces of London." This is the language of the "Times" correspondent at Mechlin, where "the bells live in a vast upper chamber open to all the winds of heaven. . . . It is a great pity," he thinks, "that bell music should not be heard on that coast as far as the rays from the lighthouse can be seen. It is so here and there along the coasts of Holland, and sometimes the fisher-folk can hear the starry music from an inland tower when fog has blotted out all the warning lights." This is all very pretty and poetical; but a large and influential section of the prosaic population of London will probably become frenzied at the bare idea of a County Council Hall carillon recital with river-tug fog-horn obbligato. For one thing, it would cost money; and for the moment the party of economy is in office, and is strenuously supported by the indignant ratepayer.

The "Gran Via," Madrid.

The City Council of Madrid has begun work upon the new boulevard, to be called the "Gran Via," which has been in project for about 25 years. A syndicate composed of French and English capitalists secured the contract for its construction. The Government is erecting a palace for its Department of Posts and Telegraphs, and a company is erecting a large modern hotel, which is to contain 185 rooms and 75 baths. A clubhouse, costing £160,000, is nearing completion. There are, according to "Commercial Intelligence," about 50 apartment houses now in course of construction in the capital. These buildings will be equipped with electric elevators of the type common in Europe, which carry passengers up but not down, and modern heating and plumbing systems. Each apartment is furnished with a kitchen range of the "built-in" type; that is, each range has all the essential parts of an ordinary range, but the fire box, ovens, and water heater, supported upon a bed of concrete faced with tiles and the extensions at each end of the iron top, are covered with marble and serve as kitchen table. The outer doors of the apartments are all supplied with very heavy locks, but light mortice locks, with a peculiar kind of brass knob, are placed upon the doors to the rooms. The windows are of French style.

St. Dunstan's Tower.

Owing to the removal of old property in Eastcheap, wayfarers can now obtain an admirable view of a much discussed tower. It belongs to the church of St. Dunstan-in-the-East, was, the legend runs, designed by a daughter of Sir Christopher Wren, and closely resembles the lantern of St. Nicholas's Cathedral at Newcastle. Like so many other Metropolitan edifices, the original St. Dunstan was very seriously damaged during the great fire of 1666, and was rebuilt 30 years later—with a spire rising from four arched ribs that spring from the angles of the supporting tower. A Newcastle writer insists on its inferiority to the tower of St. Nicholas. He quotes an unnamed old topographer as saying:—"St. Nicholas's tower is so lofty and of such a girth that to compare great things with small our London piece of vanity is but a molehill to the Newcastle 'mountain'—the pride and glory of the northern hemisphere." Having become badly dilapidated, St. Dunstan's was restored in 1817, and is particularly well seen from London Bridge. With respect to Wren's daughter's share in the design, the obviously apocryphal story—or one version of it—is that the peculiar form of the tower was suggested to Wren by observing his daughter toying with her scissors-case; which is not much more absurd than the average architectural folk-myth.

First Garden Village in Wales.

Last Thursday the Mayor of Swansea formally opened the Swansea Garden Village, for which the National Housing and Town Planning Council is responsible, and for the next two months the estate will be on exhibition. It is the first garden village in Wales. The site is on Town Hill, and as yet is but partly built over and difficult of access. It is proposed, however, to lay a tramway to it. There is a fine prospect overlooking the town and Swansea Bay, and the type of house adopted is designed to give both light and air. Operations began two years ago, when the Town Planning Council secured 54½ acres of Corporation land on Town Hill.

Builders' Federations, International and Imperial.

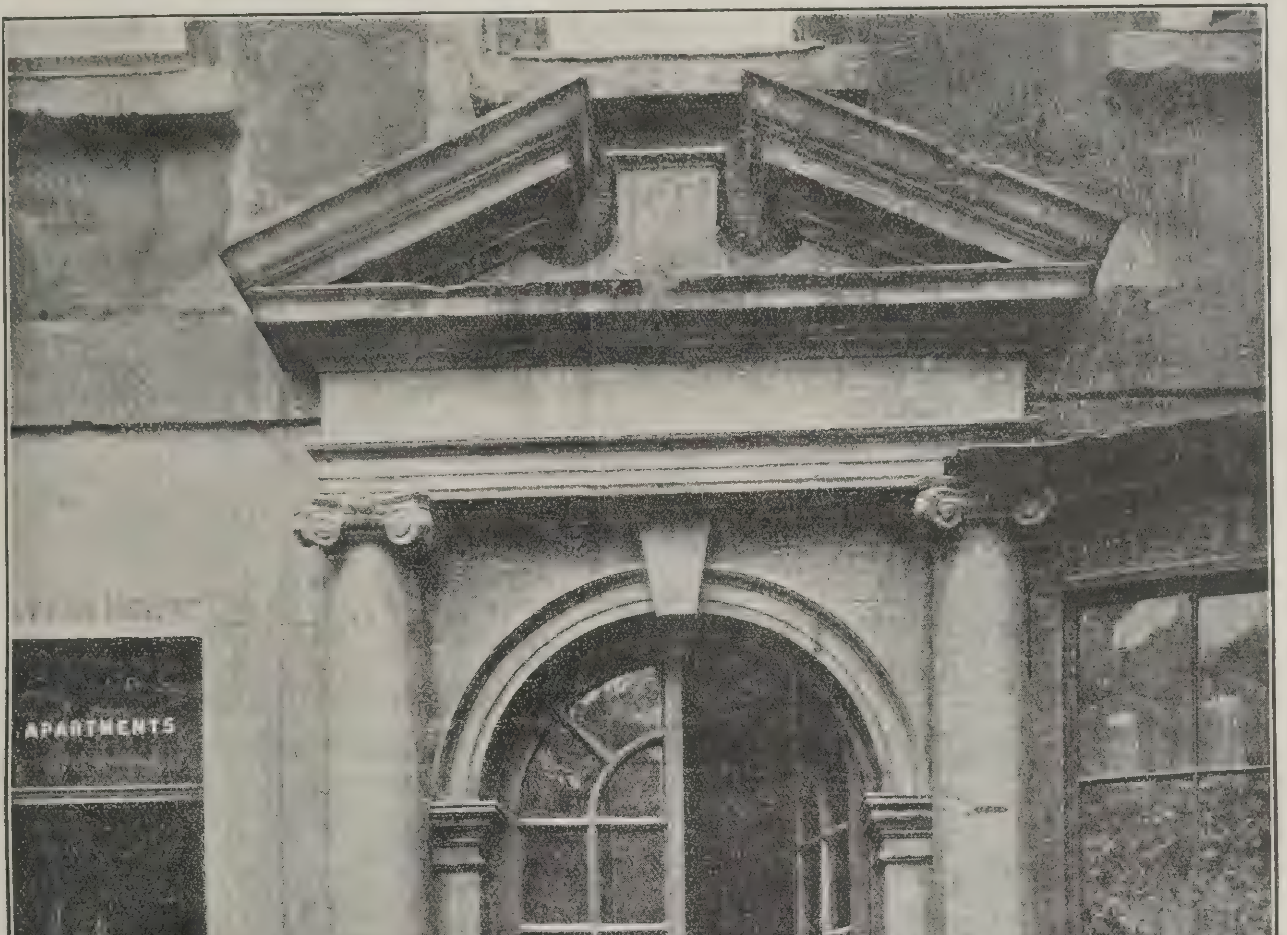
A dream that perchance is not all a dream is recounted in a very thoughtful communication which appears in another part of the present issue. The author of this communication suggests that, since the workmen's unions are more or less rapidly tending towards international federation, the employers in our great industries are themselves being impelled in self-defence to place their own organisations on a similar basis. It is recalled, indeed, in the communication under notice, that a movement for international federation of the building trades was begun a year or two ago, and it is expected by our correspondent (whose optimism is surely of the "robustious" order) that this movement will result in the establishment of an international federation covering some fourteen European countries, and of colossal membership. We note, also, that at the annual meeting of the Scottish Building Trades Federation last Wednesday, it was stated that arrangements had been made "for a monthly exchange on matters of interest between the Scottish Building Trades Federation and similar organisations in Germany, Belgium, Holland, and South Africa." Our correspondent's idealism, however, does not blind him to the serious character of the usual stumbling block. What he calls "finance" may possibly wreck the best laid scheme of federation that can be devised by the wit of man. Our correspondent does not disguise the difficulty that always arises when the great idea is translated into terms of hard cash. He complains of the feebleness and inadequacy of the "financial backing" even in the local and national institutions; and this being so, the larger conception of federation seems unlikely to develop into great issues. Another difficulty which our correspondent points out is the disparity that arises from this country being so far ahead of others with regard to conditions of labour. The other countries would take a long time to level up; and in the meanwhile, British employers could hardly be expected to sympathise very actively with foreign endeavours to resist concessions to labour such as were granted in this country from thirty to fifty years ago. It will, therefore, we apprehend, be somewhat hard to convince the organised master builders in this country that international federation would be of sufficient all-round benefit to warrant the necessary outlay. With regard to the building industry, perhaps the money would be better spent in strengthening the home defences—that is, in perfecting the organisation and intensifying the activities of the local associations and of improving the position and increasing the scope, power, and influence of the National Federation, which has yet much strenuous work to do, and to do it effectually must be assured of an adequate financial backing. International federation, nevertheless, need not always remain an unsubstantial dream; but it would seem to us that the realisation might very appropriately be preceded by a kind of Imperial federation, such as that which seems to be foreshadowed by the very friendly relations which exist between the home organisation and the master builders' organisations of Australia and South Africa, as evidenced, for example, by the hearty reception accorded to Mr. J. T. Brown, Secretary of the South African Federation, and Mr. Dey, Secretary of the Pretoria Master Builders' Association, when they visited the half-yearly meeting of the National Federation at Chester last July.

Vandalism in Cyprus.

In view of the "deplorable indifference long displayed by the British Administrators of Cyprus to its monuments of antiquity," Messrs. D. G. Hogarth, M. R. James, J. A. R. Munro, John L. Myres, and R. Elsey Smith, who have all been at various times engaged in research in the island, take the opportunity of urging upon those in high places that it is the bounden duty of British administrators, to whom care of a piece of classic ground has fallen, to display something of that solicitude for, and interest in, its priceless and irreplaceable memorials of antiquity which can be credited to the officials of other European nationalities. Now comes another report of unchecked destruction by peasants proceeding on the site of the ancient Soli. It is said that a large building, probably a temple, is being systematically quarried for building stone by the natives of Karavastasi and its neighbourhood. The site is well known, and 20 years ago was marked by an inscription of Sergius Paulus, the "deputy of the country," who listened to Barnabas and Saul (Acts xiii. 7). This stone was then serving as the threshold of a village cafe, and is now, doubtless, worn smooth or destroyed. There have never been wanting in Cyprus enlightened officials who deplored the Governmental attitude of indifference, but they have not been enough to leaven the lump and secure that general protection of monuments which the excellent Island Police could so easily afford.

The Colour of Roads.

The volumes that have been written on the "colour" of various cities appear to be spreading the gospel in that kind. At a recent meeting of Harrogate Council, Alderman Chippendale (*nomen clarum et venerabile*) moved that Mountsorrel granite be substituted for whinstone on other than the main roads. He argued that the effect of whinstone on the Harrogate roads was to make them drab and cheerless; whereas, in a health resort, to which many invalids came, it was desirable that the roads should be light-looking and pleasant to the eye, and he held that granite fulfilled that condition. Another gentleman, laying stress upon a more purely practical side of the question, said that the surfaces of the whinstone roads of the town were so hard and flinty that they pulled motor tyres to pieces—which some might regard as a virtue in whinstone, as ensuing a kind of poetic justice, or *lex talionis.* The motion in favour of granite was adopted, in spite of the increased expense implied; thereby providing an occasion of rejoicing to those who discern in the decision a minor triumph for æsthetical over merely sordid considerations. The colour of roads, indeed, is a point that, for the excellent reason adduced by Alderman Chippendale, and for some other considerations, is not too small for serious regard. It would no doubt, be highly ridiculous to advocate delicate art tints for roads and pathways, in conformity with the general tone of the buildings, but there is no doubt that one's general impression of a town is strongly affected by the colour of its roads; and "the old brown road" and "the grey and winding way" have even found a place in song and story. Bournemouth, Eastbourne, and the delectable towns of the Isle of Wight, for instance, owe much to the rich and cheerful tints of their roads; and Harrogate does well to recognise the importance of the feature.



DOORWAY OF No. 2, TERRACE WALK, BATH, 1740-48. J. WOOD, SENR., ARCHITECT.

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THE DESIGN AND CONSTRUCTION OF OPEN-AIR SCHOOLS.

BY REGINALD G. KIRKBY, A.R.I.B.A., F.S.I.

The system of open-air education for debilitated children may be supposed to have passed through its experimental stage, and to have now become firmly established. The beneficial results attending the experiment, and the rapid growth of the movement, have no parallel in educational work of recent years. So great are the benefits to be derived from daily attendance at open-air day schools for a short period of three to six months that any expansion of the system should be on the lines of duplicating such schools, rather than in providing schools of a residential type. The children usually remain at school for the whole day, which necessitates some provision for the supply of meals, and this should be taken into account in the planning of an open-air school.

These schools are usually closed for the winter months, thereby simplifying their planning and construction. So good, however, were the results which attended the keeping open of the Bradford open-air school at Thackley during the winter of 1909-10, that the desirability of extending their usefulness to the whole of the year is clearly shown.

The medical aspect of the work should be of first importance, and the building should be designed somewhat in the nature of a hospital. At the same time, the desirability of carrying on such work of a special educational character as is possible in an open-air school should not be lost sight of. Therefore, a building to meet all the requirements of an open-air school should in reality be both a hospital and a school combined.

Whilst the local conditions of a particular district may call for some slight modifications in the construction of a building, yet the principles of planning should be generally maintained, and the following requirements should be met:—(a) daily rest and sleep; (b) provision for teaching in class rooms in wet weather, as well as teaching in the open air; (c) physical exercise; (d) bathing; (e) meals; (f) accommodation for medical inspection; and (g) the usual offices, which should be specially constructed to meet the requirements of an open-air school.

Site.

The school children are usually collected in batches at some central spot in the town, and thence conveyed (under the supervision of the teacher) to the site. This makes it desirable that the school be placed within easy reach of the town, and near a railway, or a tramway. Otherwise the mode of transit would have to be by means of some special conveyance, which might add to the cost of working the school. If the town be a manufacturing one, the site should be as far removed from the smoke belt as possible; and in all cases the school should be on the windward side of the prevailing winds, so that it does not receive the used up polluted air which has passed over the town. A southern open aspect is essential, in order to obtain as much sunshine as possible.

The schools should be provided with protection on the northern half of the compass, and also be protected from the prevailing winds. This protection might be obtained by placing the building in proximity to a clump of trees, or a wood, to which the children could have access for nature study, etc. Suitable land should be available for the laying out of gardens, and for purposes of outdoor drill and play.

Water supply, drainage, and lighting should also have careful consideration, and where found possible connection might be made to the existing town's supply.

Buildings.

The prescribed daily rest in the open air will necessitate the provision of deck chairs, specially constructed so as to allow of the children lying in a much more recumbent position than is possible in ordinary deck chairs. During the warm, dry days, the children could wrap themselves in rugs and lie on the ground, but this would not, of course, be possible in wet weather.

For rainy days some necessary protection overhead during resting time will be required; and for this purpose large open resting sheds should be provided. These might consist of a roof open to the apex, supported on tiers, to allow the free circulation of air. It would be an advantage to have the back and one side closed in, to give some protection against rain and strong cross winds.

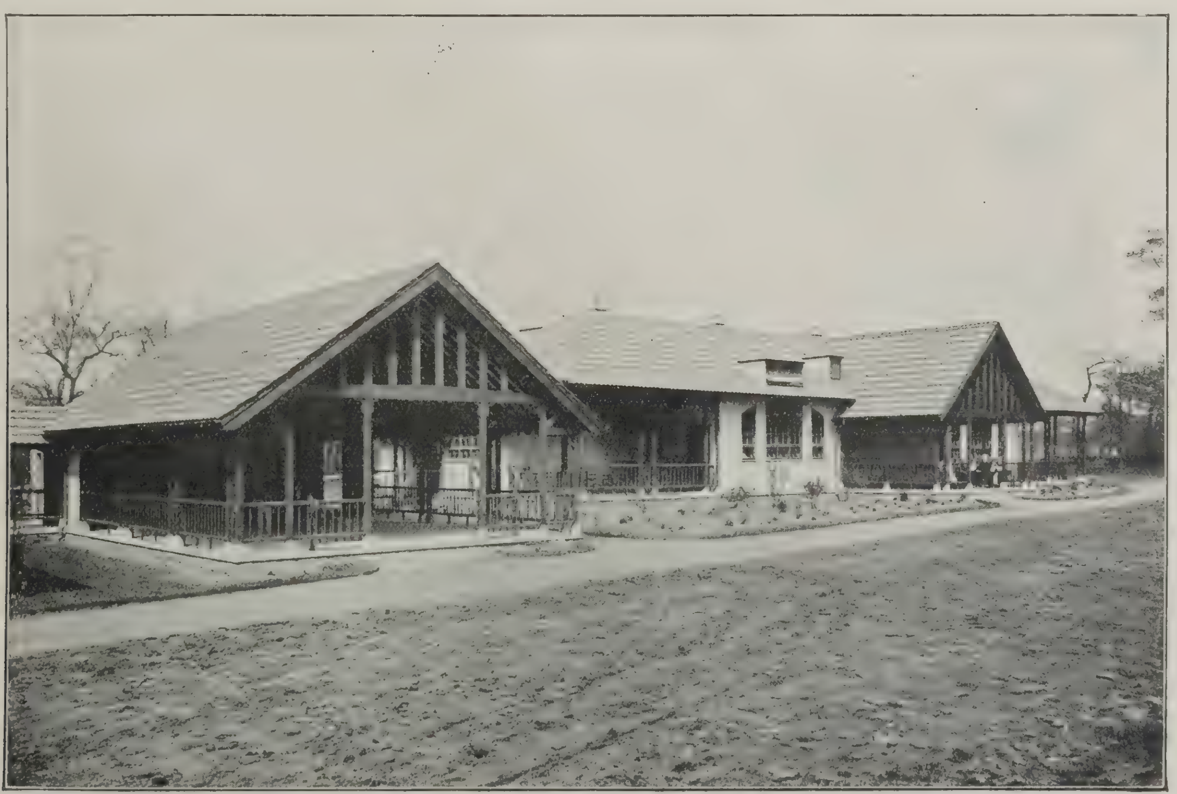
The open-air school erected at Thackley for the Bradford Education Committee has the resting shed enclosed on the northern side, and provided on the western side with revolving shutters, which can be lowered to shelter the shed from the prevailing rains from this quarter.

Physical exercise in dry weather would naturally be conducted in the open air, but on rainy days, and particularly in winter time, the resting sheds would adequately meet this requirement.

Class Rooms.

The planning of the class rooms for formal academic instruction calls for special consideration, as it is essential from the nature of the school that this should be given practically in the open air, although in class rooms. At the same time, it is necessary to provide sufficient class room accommodation to house all the children at one time.

At Thackley the class rooms are arranged in two blocks, each consisting of three class rooms, for boys and girls respectively. The floor area is on a basis of 20ft. per child, instead of the usual 10ft. required for elementary schools. Adjoining, and opening out of each class room, is a teaching verandah, to which the teacher may take the children out for instruction even on rainy days, providing, of course, the weather is not too cold. The veran-



OPEN-AIR SCHOOL, THACKLEY, BRADFORD: EAST WING (RESTING SHED AND CLASS ROOMS).
REGINALD G. KIRKBY, A.R.I.B.A., F.S.I., LATE CITY ARCHITECT, BRADFORD

dahs are protected from the north and westerly prevailing winds and rains. Another method of obtaining this result is shown in the accompanying plans of a new cripple and deaf school about to be erected at Bradford, in which the principles of the open-air school are to be adopted. Each class room opens on to a verandah on the south side, the verandah being sufficiently wide to prevent the rain from reaching the scholars while at lessons in the class room. Casement doors opening outwards are provided for the full length of the room. The verandah is fitted with a glass roof so as not to obstruct the light in the class rooms, and opening windows are placed above the verandah roof.

The class rooms should be provided with ample ventilation hoppers and tipplers, to allow the room to be frequently scoured with fresh air. To ensure this, the means of access from one class to another at the rear of the class room might also be in the form of a verandah, with a low roof. Ventilating hoppers could then be made to open directly on to the verandah, with tippler ventilators placed above, opening directly into the open air above the verandah roof. In an exposed site, the verandah, even if closed as a fresh-air corridor, would still leave the direct cross ventilation into the open air above the corridor roof.

Baths.

It is necessary to provide sufficient bathing accommodation to allow of each child being bathed at least once a week. A bathroom to accommodate up to 20 at one time would appear to be sufficient for a school of from 100 to 150 children. Shower baths appear to be the best, as they allow the water to run away from each child, and so reduce the risk of contagion from any disease. Troughs might be provided in which small children could paddle, as the effect of the shower might cause the very little ones to dislike the bath. The showers should be just above the children's heads, with a separate ring spray for each child. Each section of three or four showers should be under separate control, and all fitted with a regulating thermometer valve, so that water can be supplied at any desired temperature. The walls should be lined with white tiles, or brick; the room will be well lighted and ventilated, and everywhere the idea of cleanliness should prevail.

A system of drill could be adopted in the bath, whereby all the children would soak the head at one time, and then the arms, etc., the showers coming into play between the soaping drills. This might be arranged in rows of 4 to 6 over a trough, with the floor raised between the trough, to enable the teacher to inspect the children without standing in the water.

A slipper bath will be found necessary, in which to wash some of the children who on arrival at the school are found to be too dirty to go under the showers with the other children.

Separate dressing compartments should be provided, so that the children do not dress all in one room, a practice which is particularly objectionable to older girls who require more privacy. The divisions should not be higher than the shoulders of the average child, to enable the teacher to look into its compartment, and so easily supervise the dressing and undressing. A curtain at the front will provide all that is necessary in the way of a screen.

Meals.

The accommodation necessary to provide for the daily meals should be centrally placed in the buildings, so as easily to serve all departments, and should include dining room, large kitchen, store rooms, larder, etc. The kitchen should provide sufficient accommodation to enable the three daily meals to be prepared and cooked, and should be provided with a large scullery, as in addition to the ordinary work of preparing the meals, the children will assist in turn in the preparation and cooking of the food, and also in washing up the dishes, etc.

The dining room should be capable of seating all the children at one time, with ample space for passing between the tables, so as to enable the children to be taught to lay the tables, and provide for those who take part in serving at the table.

The dining room and its adjuncts should comprise a separate block, as it is not desirable that the smell of cooking should reach the class rooms, etc.

It is necessary that the cloak rooms and lavatories should be well lighted and ventilated, as if these precautions are not taken the atmosphere of these rooms is likely to become very foul.

Each child should be provided with a separate towel, hung in a separate recess, thereby preventing the towels from touching each other. This is more necessary in an open-air school, as a towel common to a number of children is likely to be a means of spreading disease.

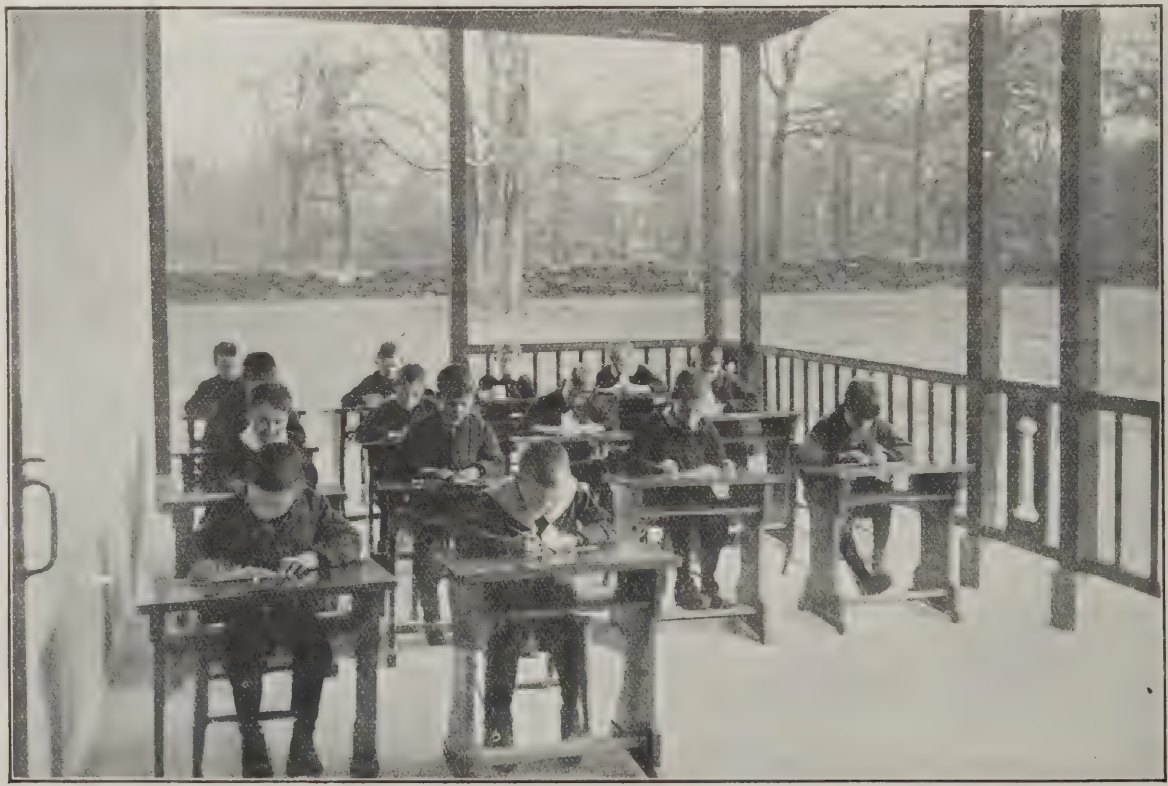
While gardening should provide some lessons of manual instruction, it may be deemed necessary to include a room fitted with benches, etc., for the teaching of woodwork and the like.

A room, or rooms, might also be included for the teaching of housewifery and needlework. These, with the rooms for manual instruction, might form a separate block.

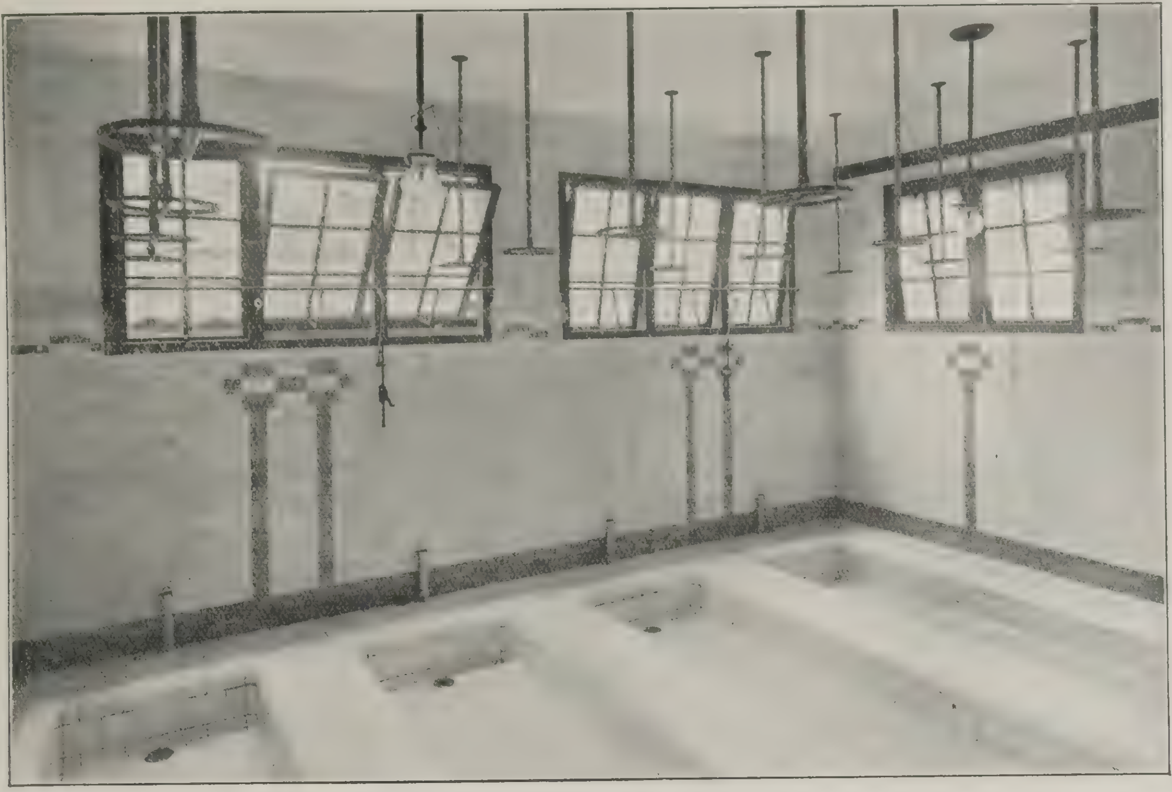
In addition to the necessary teacher's room, a room for the nurse and medical inspection is desirable if the school be some distance from the town. This room to be fitted with a sink and lavatory, and also with ample cupboard accommodation. Such a room would facilitate medical inspection, which necessarily forms an important part of the work of such a school.

Construction.

The buildings which have been specially erected for the use of the open air schools have hitherto been more or less of a temporary character, consisting chiefly of wood framing, covered with boarding or sheet-iron. Now that the principles of



OPEN-AIR SCHOOL, THACKLEY, BRADFORD: A CLASS ON THE VERANDAH. REGINALD E. KIRKBY, A.R.I.B.A., F.S.I., LATE CITY ARCHITECT, BRADFORD.



OPEN-AIR SCHOOL, THACKLEY, BRADFORD: THE BATH-ROOM. REGINALD G. KIRKBY, A.R.I.B.A., F.S.I., LATE CITY ARCHITECT, BRADFORD.

open-air schools have been firmly established, a more permanent type of construction is necessary, as it has been found that it is not really economical to erect a temporary class of building for this purpose. From the nature of the work of an open-air school, it is not essential, however, to adopt an expensive type of construction, and some form of construction is desirable which is lasting, and yet not costly to build.

At Thackley, Bradford, the walls are only three inches thick, and yet are waterproof, fire resisting, and permanent. The outside is rough coated, and the roof covered with red tiles.

The importance of isolating the various blocks of buildings in a school of this description so that a free current of air can circulate round them cannot be too greatly emphasised. It is equally important that these blocks of buildings should be connected by a paved, covered way, enabling the children to be under shelter whilst passing from one block to another.

In nearly every school specially built for the purpose of an open-air school, the various buildings are entirely isolated, with the result that children, many of whom are poorly shod and clothed, have to sit in the class rooms or resting sheds with damp feet and clothes, after, perhaps, having received their meals in a warm room.

The whole of the buildings at Thackley are connected by means of a verandah which runs in a straight line from end to end of the buildings, as this arrangement appeared to suit the site best. The buildings, however, might be grouped round a quarter circle, as is indicated on the plan of the cripple school. The site, however, will govern to some extent the disposition of the various buildings.

General Observations.

The remarkable physical improvement which is noticeable in children attending open-air schools suggests the consideration that some of the principles governing the planning of open-air schools might with advantage be extended to other school buildings, and it would appear as if these principles are destined to have a very important influence on the design of future school buildings.

In a new elementary school at Thornbury, which is being erected for the Bradford Education Committee, the principles of an open-air school are adopted.

All the class rooms open on to a verandah facing south, the lower portion of the walls being so constructed that by means of folding doors practically the whole of one side of the class rooms may be thrown open. The folding doors are fitted with special folding hoppers, to close up when the doors are open, and to regulate the flow of air into the class room when the doors are closed during inclement weather.

These principles are being adopted in a new cripple and deaf school to be erected for the Bradford Education Committee.

In view of the overwhelming evidence that exists to-day in favour of a more rational type of school planning, it is surprising that the authorities are still permitting school buildings to be erected on the old central hall plan.

The main points of this article were given in the form of a paper read at the Royal Sanitary Institute Congress at Brighton, in conjunction with two other papers on school subjects, respectively by Mr. W. H. Webb and Mr. Edward Willis, reported on pages 303 *and* 304 *of this issue, together with the discussion on all three papers.*

SCHOOL AND COLLEGE BUILDING.

It was the Education Act of 1870 which inaugurated the new era in school building in this country. Before then, as "A School Architect" writes in the "Times," the requirements had been simple, and had been met by haphazard arrangements. From that time, however, all the conditions of school life were scientifically studied, and the new requirements imposed new conditions of design, which it was not always easy to turn to satisfactory architectural account. But the problems involved were at least stimulating; and, in many cases, especially in the buildings designed for the School Board for London, they led to an adaptation of a fairly elastic phase of foreign Renaissance architecture which proved not wholly unsatisfactory.

As the first impulse towards the modern development of educational architecture was due to the requirements of elementary schools, the "Times" writer observes, these requirements may be held to have influenced those of higher-grade secondary schools, colleges for women, training colleges, modern universities, and the new buildings erected to meet modern demands at Oxford and Cambridge. The principal line of cleavage between elementary schools and places of higher education is fixed by the consideration whether or not the building is residential; and residential accommodation may be in a variety of forms. In secondary schools the usual arrangement is the provision of large dormitories with day-rooms, and a few studies. In what are generally termed public schools, these dormitories may be subdivided into cubicles, as at Charterhouse, to afford comparative privacy for the individual; or, again, as at Eton and Harrow, each boy may be allotted a room which is bed-room and sitting-room in one; while, as at Rugby, the number of private studies may be increased so as to provide accommodation for all. Obviously the combination in one scheme of residential with purely educational accommodation involves complexity in arrangement and design: the former naturally assumes a more domestic, the latter a more academic character; and, if a chapel is needed, the ecclesiastical note cannot be excluded.

The writer suggests that the rules fixed by the Board of Education are somewhat Procrustean. It is an anomaly that such rules should admit of no exceptions—that the same proportion of window-space should be demanded whether the outlook is in a narrow street or on to unbroken space, whether the aspect is north or south. The result in many cases is externally the undue diminution of wall-space valuable for architectural effect, and internally an excess of light which is almost intolerable.

The writer, noting the developments of modern collegiate architecture, points out that building by successive instalments seldom allows of comprehensive treatment and composition. In conclusion, he contends that educational buildings, if they are to conform to modern requirements, call for a new departure in character and style. That style which is least bound by rigid precedent is most elastic and adaptable, and is most capable of the harmonious expression of varied requirements, should eventually prevail. To this we should like to add our own opinion, repeatedly expressed before, that the monotonous repetition of a few pronounced types of school in London is æsthetically undesirable, and that therefore the perpetuation of the system by which they have been produced is very regrettable. Variety and individuality in the elevations might be more satisfactorily attained if the designing were thrown open to competition.

BRITISH BUILDERS AND INTERNATIONAL FEDERATIONS.

(*Communicated.*)

In an article on the Labour Socialists' Congress at Copenhagen, in the "Daily Chronicle," Mr. Ramsay Macdonald, M.P., offers some observations which demand the serious attention of all employers of labour, as they seem to foreshadow important industrial developments. After indicating that the leaders of every Socialist and Labour Parliamentary group in the world were present at the congress, and marking the great advance of Parliamentary methods as compared with revolutionary methods, the latter being found useless when it comes to actual work, Mr. Macdonald says:—"In factory inspection, child labour, hours of work, and in political grasp of the meaning and development of systems of State insurance, State inspection, and trade-union action, the British Labour party is half a generation ahead of the Continental Socialist movement." And again: "Thus, congress after congress since the formation of our Labour Party has shown the steady advance of our party in the esteem of other nations. It is being studied more and more as the model for Continental organisation in working-class Parliamentary policy."

As usual, however, the international weakness is due to lack of readiness on the part of British unions to contribute financial help to their Continental brethren—which is not to be altogether wondered at, seeing that the latter have in many cases neglected to provide any substantial financial backing for themselves. It is now being realised, however, that finance lies at the basis of successful international action; and no doubt in due time effect will be given to that conviction. Once the international financial relations of the trades unions are put on a workable basis, they will constitute a very remarkable force of organised labour, seeing that in Europe alone they represent over 10,000,000 electors.

Considering these things, and bearing in mind the great struggles which the labour unions in the building trades in Germany, Italy, and France have been waging recently for higher wages and improved conditions, it is small wonder that building trades employers, shipping employers, and other great industrials, are tending towards international federation in self-defence.

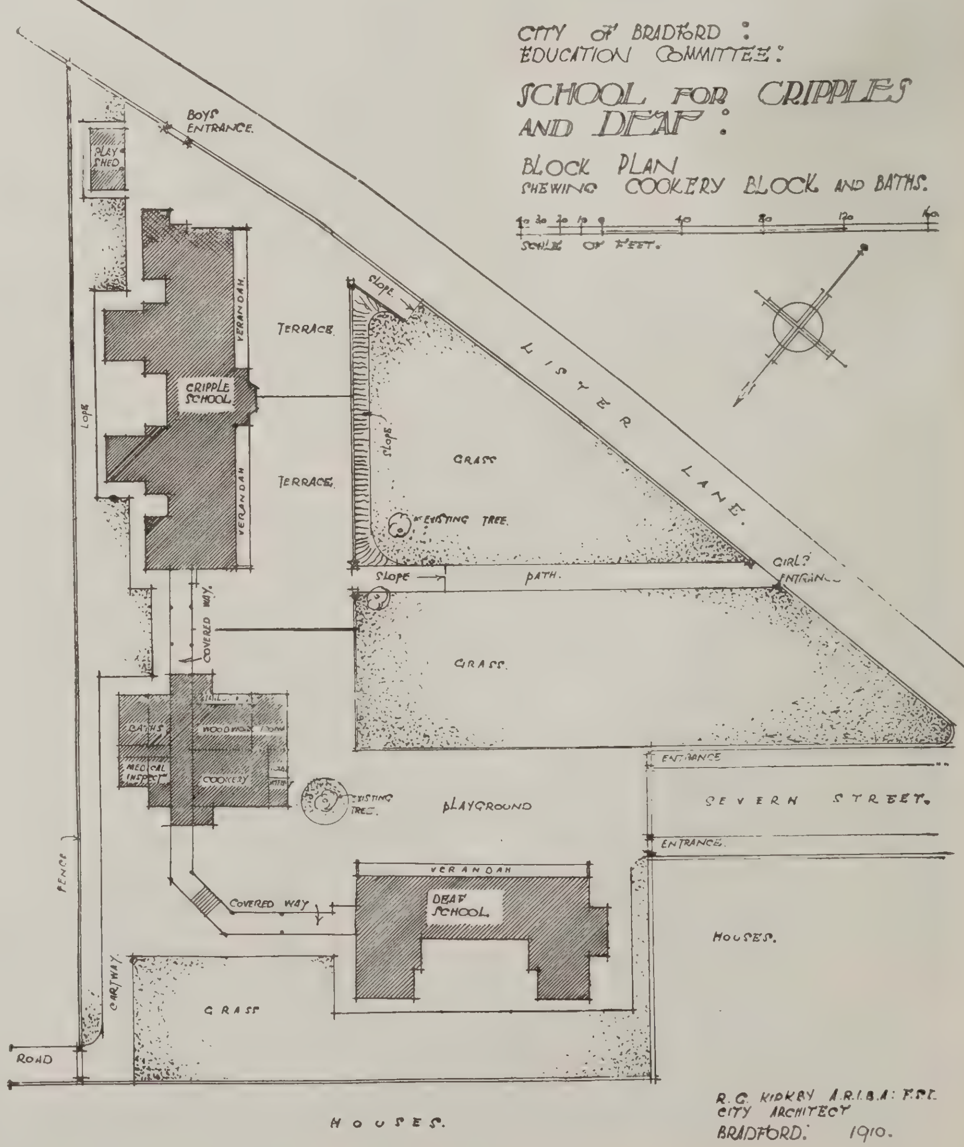
A movement for international federation of the building trades was begun a year or two ago, and it is expected that it will result in establishing an international federation covering some fourteen European nations, and representing fifty thousand to a hundred thousand contractors engaged in building and public works.

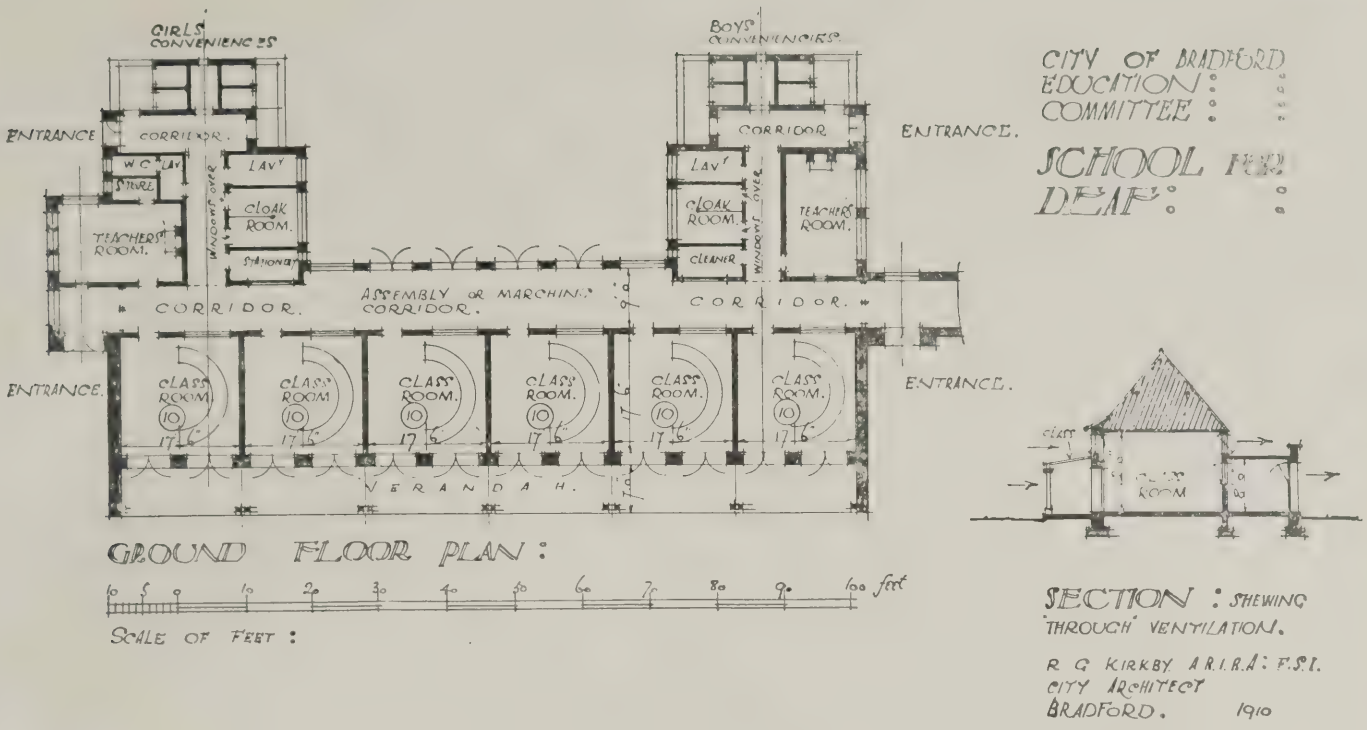
There is also some danger here that finance will prove a stumbling-block. The various employers' federations in the respective countries are organised on a democratic and representative basis, with local autonomy, and control the expenditure of the various federations. There is much difficulty already in obtaining adequate revenue for both local and national purposes, let alone for international purposes. The national and international bodies are too remote from the individual contractor to inspire him with enthusiasm or to enlist his financial support. Many local contractors rarely attend meetings of the local organisation to which they belong, and do not take any interest in regional or national and international federations, and, in fact, only a representative few can take an active part in their work.

Another feature which may affect the views of British federations is the great difference which exists in the relations subsisting between the employers and workmen's organisations here as compared with those in France, Germany, and Italy. Many of the concessions as to wages and hours of labour which workmen are asking for in those countries have been granted here long ago. Conciliation as a method of settling differences has become the rule here, while it is the exception elsewhere. The mutual relations are friendly here and unfriendly there. It might therefore be difficult for employers in this country to accord sympathy and active support to employers of countries where the conditions differed greatly from those in use here. Indeed, it may well seem to employers here that it would be correct to say that British employers accord conditions of labour quite half a generation ahead of what is usually accorded on the Continent, and that it is for the latter to approximate to the British standard.

These are some of the difficulties which lie in the way of international action on the part of both employers and workmen; and attention is here called to them, not with a view of deprecating such action, but in order that the difficulties may be clearly appreciated and adequately met.

It would seem that international federation should be based on special contributions for international purposes, levied on each individual member on a common basis, so that the revenue would be contributed in equal shares by every member of the International Federation. Representation should be so democratic that every member would feel that the highest offices in the federation are open to him;





and representatives should be chosen by voting taken in every local association so as to maintain local interest in the larger body. The revenue raised for the International Federation should be sufficient to enable it to issue printed information on a wide enough scale to maintain interest in its work.

The relations with labour, with the architects, with public bodies, and with the Legislature, should be the subject of careful and continuous study by such a federation, with the object of approximating the conditions of each country to those regarded as on the whole the best for all concerned—the common good to be aimed at rather than any individual or sectional advantage.

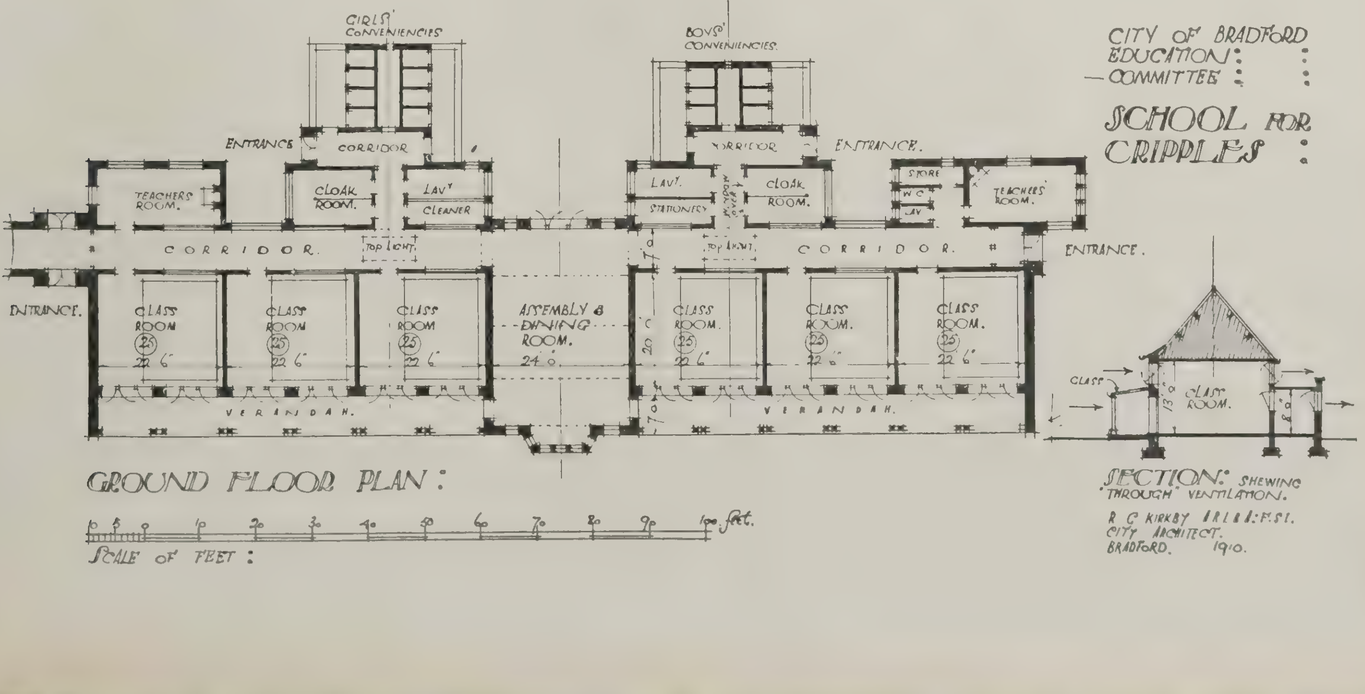
Acting on the lines of mutual fair play, equitable treatment as between employers, workmen, architects, public bodies, and the Legislature, international federations are capable of doing a humane work of great value, promoting peaceful methods, fostering mutual respect, and developing international amity, to the welfare of each and all.

THE NEW IRISH FORM OF CONTRACT.

For some time past negotiations have been proceeding between the Royal Institute of Architects of Ireland and the Dublin Builders' Association, in regard to the adoption of improved conditions of contract. These negotiations have now resulted in the issue under the sanction of the R.I.A.I., in agreement with the Dublin M.B.A., of a form of contract, based on the corresponding form issued by the R.I.B.A., in agreement with the Institute of Builders and the National Federation of Building Trades Employers, most of the clauses being identical in both forms. Passing one or two minor changes, it may be noted that the important points of difference are the following :—Clause 13 of the English form requires the surveyor to furnish a copy of his measurement and valuation of the variations to the contractor. In the Irish form he is to do the like to the employer. The importance of this change will appear when we come to clause 30.

The English form provides that when the works are practically complete, the contractor is entitled, under the certificate to be issued by the architect, to receive payment of part of the retention money. The Irish form provides that in issuing such certificate the architect shall mark it, "Works practically complete," and that the maintenance period shall run from the date of the certificate so marked.

Clause 30 of the English form provides that no certificate of the architect shall of itself be considered conclusive evidence as to the sufficiency of any work or materials to which it relates, so as to relieve the contractor of his responsibilities under the contract. The corresponding clause in the Irish form requires the architect to issue the last certificate but one, called in the document the penultimate certificate, within days after the receipt by the employer and the contractor of the surveyor's statement of extras and omissions. This provides for the prompt passing of the accounts by the employer, the contractor, and the architect, and is important in view of the great complaints as



to delays in settling accounts, to which frequent reference has been made in this journal. This certificate is to be final and binding on all parties, but if notice of arbitration is given by either party within days in respect of the said accounts, or if a notice of arbitration under clause 30 has been previously given, then the architect is to withhold his penultimate certificate until the arbitrator's award is given, and then issue it in accordance therewith.

When the maintenance period is complete (defects having, of course, been made good), the final certificate is to be issued, and to be conclusive evidence of the completion of the contract. It will be evident now why the surveyor is required by clause 13 to send a copy of the accounts to the employer as well as to the contractor, the object being to enable the former to give notice of arbitration if necessary.

The whole object and effect of the changes is to provide definite terms for fixing the completion of the contract, rendering and passing of accounts, raising and dealing with objections to the accounts, if any, and prompt payment to the contractor of the final amounts due.

These provisions may be commended to the consideration of the parties to the English form of contract as a probable remedy for grievances of which serious complaint has been made. The architects of the Royal Institute of Ireland and the Dublin Master Builders' Association are to be congratulated on the way in which they have carried out their labours.

WORKERS' VIEWS ON HOUSING.

Large numbers of workmen having assembled at Sheffield to attend the Trades Union Congress, the Workmen's National Housing and Town Planning Council took the opportunity of inviting them to a conference at the Sheffield Town Hall, over which Mr. John Wilson, M.P., presided.

Mr. Marsland (Manchester), the general secretary of the Operative Cotton Spinners, proposed a resolution calling the attention of local authorities entrusted with the administration of the Act to the pressing and immediate need for fulfilling the new duties placed upon them. Some workshops, he said, were a great deal more sanitary than some of the houses in which the workers lived.

Mr. Fred Knee (London), of the Workmen's National Housing Council, seconded.

The resolution was carried unanimously.

Mr. T. C. Horsfall, of Manchester, then moved a resolution urging all local authorities to appoint town planning committees, and to prepare town plans. The physical condition of the people, he declared, was far lower than that of other nations, partly owing to lack of light, to foul air, and the drunkenness encouraged by the condition of our towns, and partly owing to the failure of our Government to supply any physical training to take the place of that which the people of most other countries receive in the army and at school in preparation for the army. He dwelt on the necessity for good lighting, for the limitation of the number of houses per acre, and for limitation of the width of streets. It was because in Continental towns streets had been made so very wide at terrible expense, and therefore houses had had to be made high and deep enough to contain a great many tenants, and consequently had had to be solidly built, that land in all towns except those in Belgium was very much dearer than in our towns, and rents so much higher that there was serious overcrowding, not only in workmen's dwellings, but also in those of the majority of members of the middle classes. In German towns, for instance, land was from three to ten times as dear as in towns of corresponding size in this country. While there were 32,000 persons to a square kilometre in Berlin, there were only 15,000 in London. Mr. Horsfall then mentioned certain types of Berlin workmen's dwellings and courts which were of the back-to-back type and placed one tier over another to a height of five storeys. And these, he said, were the houses which a number of English working men had been admiring lately, whereas the Germans would give their ears to have our dwellings in place of theirs. But they could not help themselves, being in the hands of land speculators. "Don't," he appealed, "let us go in for monstrosities of the Berlin type." As for house inspection, he quoted the example of Essex, saying that there the inspector had come to be looked upon as a friend. The only way, he declared, of getting our houses into proper order is to make it the duty of inspectors to inspect every house.

Mr. Tom Shaw, of Sheffield, seconded. The Sheffield Corporation wanted to build cheap houses, he said, but they could not build cheap houses possessing all the advantages that Mr. Horsfall had pleaded for. They would never get the Housing and Town Planning Act put into force until they sent men to the Council who were in sympathy with housing reform. "If you put into a council a majority of men who are lawyers, financing jobbing land speculators, financing men who build these modern slums, whose only desire is to make money and not to construct good houses," declared Mr. Shaw; "if you put that class of men to administer this Act, then you might as well put the Act into the waste-paper basket."

Mr. J. Holmes, of Doncaster, in supporting the motion, declared that "The whole problem of housing lies in the question of the land."

Mr. Quibell (Scunthorpe) pleaded for more sympathy for the jerry builder. The high price paid for land, he said, compelled the builder when constructing a new house to take off £5 here and £5 there.

The resolution was carried.

COMPETITIONS.

Municipal Buildings, Karachi.

Mr. S. Wittet, a consulting architect to the Government of India, the assessor in the above competition, has awarded first place to the design of Mr. James Cummings Wynne, of 9, Woodburn Terrace, Edinburgh, who gains the first premium of £500. The design of Messrs. Groll and Treacher, London, was placed second. Mr. Wynne's design is for a stone building, three storeys in height, with domed bays at each end, the main façade extending to just over 300 feet. A clock tower, 140ft. high, rises in the centre of the elevation. The Municipality have accepted the design, which will be erected under the supervision of their engineer.

Telegraph Union Monument.

The result of the competition for a monument commemorative of the International Union of Telegraphs, to be erected at Berne, has had a disappointing result. The jury have been unable to adopt any of the designs submitted, and the premiums offered have been withheld. A fresh competition is to be held, and this will close on June 15, 1911.

Acton School Competition.

The sub-committee appointed by the local education authority to deal with this competition has had a meeting to consider the assessor's award, and to recommend which plan shall be adopted for the erection of the building. The report will be submitted to the Education Committee at a meeting to be held to-morrow, Thursday, September 22nd. The competition will then be advised as to the awards.

LIST OF COMPETITIONS OPEN.

Oct. 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C.

Oct. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

Oct. 1. BRIGHTON. The Governors of the Brighton, Hove, and Sussex Grammar School invite architects who have erected grammar schools, higher grade or secondary schools, or schools of a similar character during the last fifteen years, to send their names and particulars of such buildings to A. F. Graves, Clerk to the Governors, 9, North Street, Quadrant, Brighton. A selection will be made from those who respond to this invitation, and a limited competition under motto will be instituted, with a professional adviser to assist the Governors in their ultimate choice. The number of competitors selected will probably not exceed seven, and it is the intention of the Governors to employ the author of the approved design to erect the school.

OCTOBER 31, ETC. ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

Nov. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK. Open only to architects practising in Dublin. Premiums £100 (to be merged), £30, and £20. Conditions on application to the Registrar.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

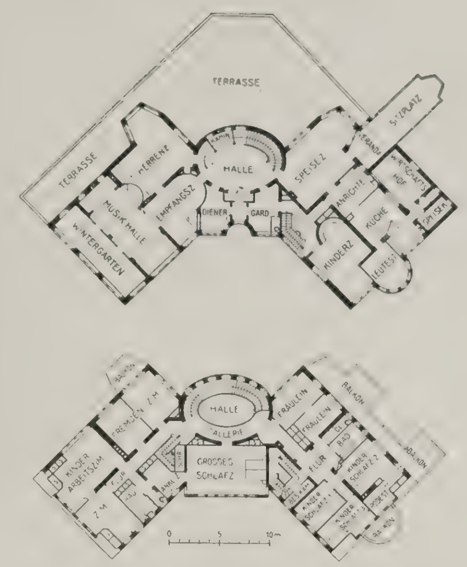
Dec. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Competitive designs are invited from architects for rebuilding the above property, for which the following premiums are offered for three selected designs:—1st £100, 2nd £50, 3rd £25. A plan of the site and particulars can be obtained from J. Elmes Beale, owner, Bournemouth, on payment of a deposit of one guinea, which will be refunded upon receipt of a bona-fide design.

MAGAZINES & REVIEWS.

The "Century" contains an appreciation of the art of Mr. W. Orpen, in the usual style of sneers at the Royal Academy and the upholding of the New English Art Club as the goal for all true artists. This kind of thing seems now to be a matter of course with all American writers who touch on the subject of English painting, and is hardly worth commenting on seriously. Reproductions of some of Whistler's early drawings when a cadet at West Point form the illustrations to a few remarks; the sketches are mostly studies of figures in uniform, and one illustration for "Pickwick"; they are not of special interest except for the fact that they are so utterly different from anything that we are now accustomed to connect with the name of Whistler. "Shakspeare and Blackfriars," by Dr. Wallace, of Nebraska University, contains some investigations into the history of the theatres of Shakspeare's day, with some curious plans and views reproduced from old engravings, including a view of the interior of the old Swan Theatre, with the covered auditorium round it, and the platform stage under the open air in the centre. Mr. Cole's wood-engraving after Corot's fine picture called "The Bathers" (from the two small figures introduced), which forms the frontispiece, is a perfect masterpiece of the wood-engraver's art.

In the "Antiquary," Mr. Coltman Clephan commences a series of articles on the keramic and plastic arts of the ancient Greeks, illustrated from objects in the author's collection. This promises to be a valuable essay on the subject.

The "Berliner-Architekturwelt" is occupied with the illustration of some dwelling-houses by Herr Muthesius, one of which, the "Haus Freudenberg," is worth attention, both for its unusual plan and the treatment and decoration of the interiors, of which numerous photographs are given. Externally, the house has too much of the contrived picturesque—a kind of rural cottage on a large scale, with an immense expanse of high roof, but much of the interior work is very good.



"HAUS 'FREUDENBERG," [NIKOLASSEE, BERLIN. HERR MUTHESIUS. ARCHITECT.

(From the "Berliner Architekturwelt.")

The "Fortnightly Review" has what is, on the whole, a very laudatory article on the Garden City at Letchworth, the only unfavourable criticism being just where we should have put it, viz., on the style and planning of the smaller houses. It is admitted that these have "a pleasing, old-world appearance," which seems to be regarded as praise, though why houses for occupation to-day should be the better for having an old-world appearance is not very obvious. But the writer has common sense enough to see that the rooms in these houses are often of eccentric shapes, their windows too small (that, of course, is part of the "old-world appearance"), and the stairs and landings "inconvenient and oddly shaped." It was, says the author (Mr. W. C. Bremner), a mistake to provide such houses for the working classes; the condition of the workers should be studied. "Their furniture is usually large and unwieldy, probably because bought cheap"; and "the squarer the room the better will be the results for general comfort and order." It is pointed out that the landings and the bedrooms were very small, and the rooms nearly filled up with very large beds, and the ceilings usually low—eight to eight-and-a-half feet. All this, though Mr. Bremner does not seem to see it, is the result of the struggle to gain the praise of providing cottages at a cheap rate; an influence which also brought about the flimsy construction of many of these cottages, another point which the author does not seem to see. But he evidently does recognise that a struggle after what is supposed to be the picturesque in small cottages does not lead to the most convenient planning or the best building; and to find a writer in a general magazine admitting that, is something gained.

An article in "Munsey's Magazine" on "The Passing of the Chestnut Tree" gives particulars of the timber disaster in the United States, through the wholesale destruction of the chestnut trees from the ravages of a fungoid bacillus. The plague started in New England States, and is spreading all over the Continent, and no cure has yet been found, although many thousands of dollars have been expended on remedies. It is feared that the bacillus after destroying the chestnuts may acclimatise itself to some other variety of timber, and thus work world-wide destruction.

"HAUS FREUDENBERG" NIKOLASSEE, BERLIN: GENERAL VIEW. HERR MUTHESIUS. ARCHITECT.

(From the "Berliner Architekturwelt.")

THE HOUSES OF THE PICTS.

Mr. Alex Sutherland, in a paper read at the Sheffield meeting of the Bristol Association, describing the excavation of the Broch of Cogle at Watten, Caithness, said Dr. Anstruther Davidson of Los Angeles, in August, 1905, resolved to test the possibility of this Cogle mound containing anything of a bygone age. It stood about 6ft. high and 60 yards in diameter. He made a trial cut through the middle, and from this was satisfied there was here another of those prehistoric buildings called Brochs or Picts' houses, of which Mousa, in Bressay, Shetland, might be regarded as the best preserved specimen. After excavation it was found that the only entance, about 2ft. wide, to the Cogle broch was on the west. At the Scottack, and other excavated Caithness brochs, the entrance was on the east. The thickness of the walls was 15ft., and the circle enclosed had a diameter of 30ft. There were two upright flagstones 2ft. high and 2ft. apart. The average height of the walls remaining *in situ* would be about 3ft. Probably 60ft. or 70ft. had fallen and helped to form the mound. Vegetation had grown and decayed and buried the stupendous structure for ages. Who were the broch builders, and when did they live? are interesting questions. Dr. Davidson identified five successive layers of ashes and pavement, and the charred remains of wood indicated the fuel. The most important of the neolithic remains were the stone pestles found in the lowest *stratum* of ashes. These, over 20, were in only a few instances pestle shaped. They were made of hard-grained, basaltic-like stone, and were originally of oval or oblong shape. By constant use in pounding the edges were levelled, and a few of them were quite circular and bevelled all round. Two stones with shallow mortars were found, and also some saddle querns with the usual manu or hand-grinding stone. Numerous stone pebbles, probably used for sling stones, were found. Almost all the bones were broken to extract the marrow. None showed evidence of fire, and the condition of the bones would show that they were very imperfectly cooked. Parts of tusks of boar, goat, horse, and ox could be identified, and also bat, with probably great auk. These had been sent to Professor Bryce, Glasgow University, for further investigation.

NEWS IN BRIEF.

Broome Park, near Canterbury, of which it is stated that Lord Kitchener contemplates taking possession, stands in a nobly timbered park of 400 acres. The foundations were laid in April, 1635, and "it was up by the middle of November following, but although the maine house was builded, reared, and tiled by the time aforesaid, yet the inwork such as sealing and boarding was not done till the end of the year 1636, and it was September following in the year 1637 before the joiners had made any great progress in wainscotting the rooms, and it was St. Mich. 1638 before they and the painters had finished the work and made the house ready for Sir Basil Dixwell to come into it." The house was given over in 1778 to James Wyatt, the architect, for enlargement and improvements, which latter are questionable. There are many beautiful pictures in the fine house.

* * *

M. Ernest Gérard, the architect of the new Palace of French Arts and Industries on the vacant site in the Strand, is now in London completing his arrangements for commencing the work, and will spend a large portion of the next two years in superintending the creation of his scheme. The erection of the buildings will be pushed on rapidly, and arrangements are being made for the official opening early in 1913.

* * *

The statue of Lord Kelvin which is to be erected in Belfast, his birthplace, is being executed by Mr. Albert Bruce-Joy, and is far advanced towards completion. The figure stands ten feet high, and the sculptor has represented Lord Kelvin in the prime of life and intellectual power. He holds in his right hand a design of a gyroscope he invented, and by the side of the effigy is a model of the Kelvin compass. The statue is to be cast in bronze, and will be placed on a pedestal twelve or thirteen feet high. Mr. Bruce-Joy has completed the bust of King Edward in bronze for the Chelsea Hospital, which will be unveiled shortly.

* * *

In a paper read before the British Association last week, Mr. George Clinch suggested the establishment of regular and systematic oversight of great engineering works which involve excavation and removal of the soil. The value of the spade in archæological investigations, he said, was never more appreciated than it is today; yet, in spite of activity in various directions, many fields of research remained entirely unoccupied or only partly worked. Whilst Roman sites were being explored in considerable numbers in England, Wales, and Scotland, the remains of pre-Roman times were with one or two exceptions, comparatively neglected. It was remarkable, he thought, that so little attention was given to the sites of prehistoric huts and other dwellings. A hint of what might be expected by further excavation of these sites was afforded by the recent accidental discovery of gold torcs of the Bronze Age under the floors of ancient hut dwellings at Bexley, Kent. The wholesale destruction of antiquities now going on as a result of coast-erosion, railway and other great engineering works was a most serious matter. There was pressing need for supervision of all these great works, in order that the antiquities might be rescued and the circumstances of their discovery placed on permanent record. He advocated the immediate establishment, as far as possible, of a regular system of thorough oversight wherever and whenever excavations were being made in the soil; and he suggested that the matter be brought to the notice of the Government in order to enlist its sympathy and support.

* * *

The granite obelisk which has been erected in Forfar Parish Churchyard by public subscription to perpetuate the memory of George Don, the well-known Scottish botanist, has been unveiled by Mr. George Claridge Druce, M.A., F.L.S., J.P., Oxford.

* * *

A sculptored bust of an early bishop has been discovered in the heart of the Cheviots. It is beautifully cut in Sicilian marble, which has been rendered almost chalk by age, and the finder, Mr. John Wood, Spittal, suggests that it may represent Paulinus, the great apostle of Christianity to Northumbria.

* * *

A message from New York states that Mr. Oscar Hammerstein has announced his intention to begin and complete within a year the erection of an opera house seating 3,000 on a site in Kingsway, on which he has secured an option from the London County Council. Mr. Hammerstein will leave this month to supervise the erection of the building. The exact situation of the site in Kingsway is not yet made public.

* * *

The Mayor of Southampton presided over a recent meeting of the committee formed to erect a memorial on the spot whence the Mayflower sailed for America in 1620. Special interest in the memorial was shown in communications to Professor Hearnshaw, LL.D. (the hon. secretary), from the descendants of the Pilgrim Fathers on both sides of the Atlantic. The Winslow family wish to erect a special panel in memory of their ancestor. Mr. George W. Alden sent particulars of a gathering of 800 descendants of John Alden, of Southampton, who appears in Longfellow's "The Courtship of Miles Standish." It is hoped that a memorial will be erected next year.

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An accident recently occurred in the excavation work for the sewage pumping station at Southend. When completed, the station will consist of a chamber 100ft. square sunk into the ground to a depth of nearly 60ft., and enclosed by concrete walls 5½ft. in thickness. A trial bore, originally made on the site by the Corporation, revealed a bed of wet sand at a depth of 35ft. from the surface. When excavating for the concrete walls, the contractors found this bed of sand to be 17ft. thick at one side, and extra precautions in the way of timber shoring were adopted. Unfortunately, severe rainstorms flooded the workings, and the sand began to run, causing the sinking of the central mass of earth and the collapse of the timbering. The accident happened on a Sunday, otherwise loss of life would probably have resulted. The pumping station includes a pump well 80ft. deep, with screening chamber, and in addition the contract comprises the laying of the main sewer and effluent outfall for a distance of nearly 1,300ft., and at a depth of 75ft. from the surface. The necessary tunnel, 9ft. by 6ft., was driven simultaneously at each end, the shafts having a double timber lining with puddled clay between the linings. The tunnel is driven through clay and supported by roof props and cross timbers, and the main sewer, 33in. in diameter, occupies the bottom of the tunnel and is flat topped to take the main outfall 39in. in diameter. Both pipes are built of silicated concrete, and the sewer has a fall of 1 in 1,400 towards the pumping station, whilst the outfall is level.

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Mr. Horace Farquharson, F.R.I.B.A., architect, has removed from 41, Montpelier Square, Knightsbridge, S.W., to 14, North Audley Street, Grosvenor Square, W. Telephone, 6043 Gerrard.

* * *

The Mayor of Lincoln laid last Wednesday the commemoration stone at the pumping station at Elkesley, Notts., in connection with the provision of a new water supply for the city.

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The death is announced of Professor William Harmon Niles, a well-known American geologist, at the age of seventy-two. Professor Niles had been Professor and Head of the Geological Department of Wellesley College since 1888, and Professor of Geology and Geography in the Massachusetts Institute of Technology from 1871 to 1902. He was a member of a number of scientific societies in the United States of America.

* * *

A new church is to be provided for the parish of Sulhamstead-Banister, Berkshire, under exceptionally interesting circumstances. Sulhamstead House, long the residence of the Thoyts family, is about to pass into the occupation of a fresh owner, and the former have decided that the time has come for them to carry out a long-cherished desire, for which they have laid aside certain sums of money during the last forty years, and to build a church to replace the existing one, dedicated to St. Michael. It will be the gift of Colonel Thoyts and his brothers to the parish, and is intended as a memorial to their father, who was really the originator of the scheme.

* * *

Plans have been submitted to Sculcoates Rural Council for a garden village in the Anlaby Road, near the Hull Golf course. Colonel Wellsted, the surveyor, said the site was known as Locky's estate, and the promoters were the City Land Syndicate. It was, he said, a gigantic affair. The proposed sanitary arrangements, however, did not meet the board's approval. It was decided to refer them back.

* * *

Referring to the note on the reparation of the roof of Glasgow Cathedral in our issue for Sept. 7, Mr. P. Macgregor Chalmers, I.A., writes to say that the work is not under his superintendence, but under that of Mr. W. T. Oldrieve, architect to the Office of Works for Scotland

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The Institute of American Architects has decided to offer yearly two medals and four honourable mentions for the best façades for apartment houses built year by year in the Manhattan and Bronx districts. The jury, which is to consist of nine members, will, in making their awards, take into special consideration simplicity of character, happy proportions, the artistic employment of inexpensive materials, suitability of style to site, and convenient disposition of safety staircases, water supply tanks, etc.

* * *

In Archer Street, a narrow thoroughfare in Soho, there still stands, within a stone's throw of Piccadilly, an old farmhouse. Many a year has passed since the cattle lowed outside its windows, but it once faced a fair prospect of meadow land, and no doubt did a thriving dairy business. Here were lands granted to Henry Jermyn in 1672, known as Kemp's Field, Bunche's

Close, and Coleman Hedge Field, the whole being Soho Fields. But the house must have been old then for Archer Street, which it faces to-day, was already built. This old building is probably coming down very shortly. It is not generally suspected that there are in London eighteen other farmhouses, and that they are still in business. Of course they are not within a stone's throw of Piccadilly Circus, as is the doyen in Archer Street. These eighteen have a total annual value of £728, and are widely distributed over the metropolitan area. Two are in Greenwich, five in Lewisham, nine in Woolwich, one so near as Hammersmith, and one in Wimbledon. Incidentally 266 acres of London are under corn and 170 grow fruit.

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The Schiff Home of Recovery, Cobham, is being supplied with Shorland's patent Manchester grates by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

* * *

With the completion of the tour just ended, the Garden Cities and Town Planning Association has during the past twelve months been responsible for bringing to this country parties of Continental housing reformers numbering about 350 people. The greater part of these have come from Germany. A large proportion of the visitors have been architects, most of them occupying official positions under their towns or Governments. Almost every housing scheme of importance in the country has been inspected with the greatest thoroughness. The testimony of the visitors has been uniformly that in the matter of housing they have everything to learn from the English system of cottage-building, while their admiration for the Garden City principle knew no bounds. The nationalities represented in the last parties included Germans, Austrians, Italians, Hungarians, Poles, Russians, Swiss, and others, and a party of Poles is being organised for a tour next year. The Association has also arranged for a visit of members to some of the chief Continental cities at Easter next year.

* * *

At a meeting of the Brighton Town Council, Alderman James Colbourne, chairman of the Finance Committee, stated that houses were letting most satisfactorily. It is stated that during the last six years Lord Rendel has invested £250,000 in property in Kemp Town, and that of the houses which he has modernised nearly all are occupied.

* * *

The House of Lords is in the hands of the decorators and builders. The solid brass outer doors of the House of Lords have been refurbished. The crowns surmounting the two figures over the gates will also be regilded; while in the vestibule new gilding will be laid on the delicate traceries. Several important structural alterations are being made with a view to the extension and improvement of the accommodation in the Upper House. Seating accommodation for secretaries and Ministers in charge of Bills, for instance, is being provided in a corner near the benches occupied by the Bishops, and on the right of the throne. Increased facilities are also being provided in the catering department, and the kitchen is being modernised and greatly enlarged. The sanitation is being thoroughly overhauled and modernised.

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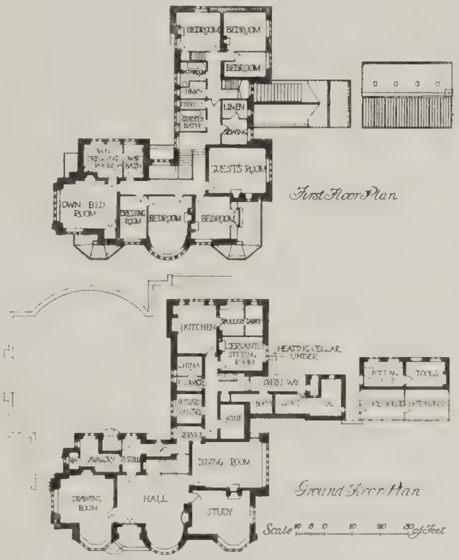
On and after September 24th the offices of the Institute of Builders, of the Builders' Benevolent Institution, and of the National Federation of Building Trade Employers of Great Britain and Ireland will be moved from Bedford Street, Strand, to Koh-i-noor House, Kingsway, London, W.C. On Wednesday, October 5th, at 4 p.m., 1910, Mr. Moritz Kahn will read a paper before the Institute of Builders on "American Methods as applied to Reinforced Concrete Contracting."

CRAGWOOD, WINDERMERE.

Cragwood is built on what is perhaps the finest site on the shores of Windermere, a peninsula jutting out boldly from the easterly side of the lake about two miles from the Ambleside end. It is built of local stone quarried on the site, and roofed with local green slate. The stone for dressings was obtained from the Cullingford quarry (Yorks.). Internally, the house has American oak floors in the principal rooms, and the hall panelling and staircase are of Austrian oak. Specially modelled ceilings have been fixed in the hall and drawing room. The general contractor was Mr. A. Jackson, Ambleside; plasterwork, Mr. Hindshaw, Manchester; carving, Messrs. Earp, Hobbs and Miller; heating, Messrs. G. N. Haden and Sons; leadlights and casements, Messrs. Humphries, Jackson, and Ambler, Manchester; sanitary goods, Messrs. S. Gratrix, Jun., and Bro.



"CRAGWOOD," WINDERMERE.
F. B. DUNKERLEY, F.R.I.B.A., ARCHITECT.

Mr. W. L. Mason, F.R.I.B.A., acted as superintending architect throughout the progress of the works.

CORRESPONDENCE.

The Town Planning Conference and Municipal and District Councils.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Much of the actual work of preparing the Town-Planning Scheme provided for under the new Act, will fall within the scope, not of the great Corporations, but of the Borough and Urban District Councils. It is, therefore, of the first importance that these authorities should avail themselves of the singular advantages offered by the Conference, which will be held in London from 10-15 October, for the study not only of the history of the subject, but also of the examples which will be presented of the architectural methods adopted in other countries as well as in our own.

The Local Government Board will, I am informed, be prepared to sanction such reasonable expenditure out of the rates subject to Government audit, as may be entailed by the attendance of representatives at this Conference, provided that not more than three members of an authority attend officially, one of whom should be the architect or surveyor.

The Royal Institute of British Architects has not hesitated to incur very heavy expenditure in the fulfilment of what it considers to be a public duty, by organising the Conference and bringing together the great collection of drawings and models which will be exhibited at the Royal Academy. It must necessarily be very long before the circumstances can recur which have rendered it possible to make the present arrangements, and the Royal Institute asks that all those who are responsible for the administration of the Town Planning Act of 1909 will support it in the effort which it is making for the public good, and send their applications for membership of the Conference to me without delay.

JOHN W. SIMPSON, F.R.I.B.A.,
Secretary-General,
The Royal Institute of British Architects' Town Planning Conference.

Lighting of London.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL

SIR,—A most misleading impression has recently been created by certain paragraphs appearing in the Press under the above heading. The impression given was that London, instead of continuing an electrically lighted city, as at present, was about to revert to gas. I need hardly say that nothing is further from the truth. The case, however, presents an interesting example of how easily an erroneous impression can be set afloat. The facts are as follows:—

One of the 29 London authorities, influenced by conditions which were purely local, decided to alter a few of their numerous electric lamps to gas lighting. The number of the lamps involved is quite small compared with the total number of lamps in the borough in question, and is altogether negligible in comparison with the total electric lighting of London. The whole case, in fact, is simply a local matter, confined to one authority only, and is quite undeserving of this wide publicity, were it not for these incorrect rumours which have given rise to so much misunderstanding.

For corroboration of the facts, reference need only be made to the official statistics of the London County Council, where it will be seen that the use of electric street lighting has more than doubled in half a dozen years, and that only 10 out of the 29 London authorities are wholly without electric street lighting.

As to the relative cost of electricity versus gas for street lighting, I need only mention that in St. Marylebone the saving effected last year was £1,500 in respect of a portion of their area only, and that this has encouraged them to convert the whole of the remaining gas lamps to electric light, which will bring the saving up to £2,600 per annum.

Further, the Boroughs of Hampstead and Shoreditch already extensively electrically lighted, are extending electric lamps practically throughout the whole of their areas.

H. B. RENWICK,
Chairman of the Electric Supply Publicity Committee.

THE ROYAL SANITARY CONGRESS.

UNCONTROLLED BUILDING.

In the course of his presidential address to the section devoted to sanitary science and preventive medicine, Professor E. W. Hope (Medical Officer of Health of the City of Liverpool) said it was only within comparatively recent years that the appreciation of the evils wrought by insanitary dwellings had been forcible enough to sweep away the vested interests in their maintenance, or to remove the apathy and indifference of those who suffered directly or indirectly from them, and even now there were many educated people who altogether failed to grasp the extent of the mischief they had wrought, or the necessity for wholesome dwellings for the people. Legislation initiated say about the middle of the last century, framed with a view to ameliorate the condition of the dwellings of the labouring classes, was cumbersome, costly, and difficult of application. The Housing and Town Planning Act, young as it was, had already borne valuable fruit in many parts of the country, and there are already conspicuous examples of cities which had been encouraged by it to go forward with greater energy in ensuring that the growth of the cities shall be properly controlled, and that they should be wholesome and pleasant to live in. But it was not only the suburb whose growth required to be directed, but the central parts of cities needed attention even still more. It must be recollected that whole populations could not altogether be displaced from one part of the city to another, some at least must be rehoused practically upon the original spots after reconstruction had taken place, and this was an exceedingly difficult and very costly process, and the value of legislation which was designed to lessen the difficulties of this task was immense. The Liverpool Corporation (Streets and Buildings) Act, 1908, had also rendered extremely valuable local service on these lines. One interesting fact, and a fact which might be recorded as the practical outcome of education in this particular direction, was the willingness evinced by many great landowners to meet their neighbouring municipalities in a liberal spirit and to co-operate in the formation of wide roads, good thoroughfares, and so forth on extremely liberal terms. The enlightened policy of the Marquis of Salisbury and other landowners might be cited as an illustration of this.

ILLUMINATION

Mr. John Darch contributed a paper on practical illumination, in which he said that the necessity for establishing rational modes of lighting had for years been strongly impressed by advanced thinkers, but it was only in 1908 that a combined effort was made in England, in which ophthalmologists, physicists, architects, and engineers joined hands to further this desirable object. The author proceeded to show that the principles governing the practice of lighting should be in strict conformity with the hygienic requirements of the eye. He suggested (1) the lamps or other sources of light should be so arranged that they are not visible from the more frequented or ordinary points of view; (2) the illumination should be sufficient to cause the objects to appeal at once to the eye, but should be free from glare; (3) for general illumination the light should have a preponderating downward direction, freely flooding ceilings and walls, uniformly distributed and fully diffused; (4) special work at desks, benches, etc., should have special lighting, adjustable in position and power, with opaque shades; (5) the colour of the light should be as pure and white as possible. Monochromatic light should, as a rule, be avoided. The stages of theatres were about the only places that were always well illuminated; the scenery and the lighting were each the complement of the other, with the most natural and agreeable results. If architecture had any power to charm, that power could only take effect when it was subjected to suitable lighting. It was curious that this truism was so completely overlooked, as one might see in any public building, sacred or secular. The architects of ancient Rome well knew that it was upon the lights and shadows that their superb art depended. With regard to the disputed question of direct v. indirect lighting: always prefer direct lighting in so far as it would accord with the rules he had laid down. Indirect lighting should only be used where specially suitable or inevitable; and for the rest, an arrangement of limited obscuration of lights which combined the advantages of the other two. The lighting of the average church had perhaps more than any other class of building transgressed the most elementary principles of good lighting. To see anything at all, the worshippers had to peer through a forest of low placed lights, or, at least, to enduce the glare of a couple of pulpit lights; and yet in many of the leading churches there was not enough light to read by. One would suppose that the beautiful decorations of a church were placed there to be seen, but in nearly every case, at least at night, the upper two-thirds are lost in gloom, and the lower third consisted of a few dazzling points of light that obscured all behind them. A chancel might be effectively lit by means of lights behind the chancel arch or other projections: one might instance the fine effect thus produced in the Guards' Chapel, St. James's Park. Such lighting was restful and soothing, and much more conducive to worship than the mystic gloom (always accompanied by the irritating points of light) which several architects had recently defended on religious grounds.

MOISTURE ON INTERNAL WALLS.

Before the Architectural and Engineering Section, Mr. H. D. Searles-Wood, F.R.I.B.A., described the Knapen process for the drying of buildings. He pointed out that the dampness encountered ordinarily in a building was due to the building materials originally employed; to capillary action; to humidity of condensation; to humidity due to infiltration. The different ways hitherto adopted to overcome humidity had only resulted in keeping the damp inside the walls. Thus waterproof cratings, bituminous slabs, bitume paint, covering materials, layers of metals, etc., were used to preserve the interior of the walls from external injurious influences. The systems adopted so far, however, could only mitigate for a time the damage which dampness might occasion in the building. Mr Knapen based his system on the difference existing between the mean hygrometric state of the atmosphere surrounding the building and the hygrometric degree of the materials used in the building. To utilise the hygrometric difference between the interior walls and the external air, the mass of the walls to half of their thickness was put into permanent communication with the external surfaces and the surrounding air by providing a series of small inclined apertures. As materials and circumstances differed, every application had to be treated according to its own special conditions, and so as to the dimensions, number, and the inclination of the apertures. The system allowed of the introduction of a quantity of air to the internal parts of the materials, such air entering the apparatus at the temperature and at the mean hygrometric state of the exterior. Therefore, when coming to the new medium the quantity of air tended to modify its dampness by becoming saturated with the excess of humidity, and it became cooler or warmer according to the seasons and the kind of materials. The quantity of air which had filled the apparatus after being conveyed through the apparatus to the interior of the damp wall would have its density modified by contact, and the equilibrium was then broken, and the air compelled to move and to leave the apparatus. As the syphons were placed with a calculated angle of inclination, the circulation of the air would be automatically and permanently maintained until there would be no hygrometric difference between the exterior of a wall and the materials inside of it.

Mr. Cooper (Wimbledon) said there could be no doubt as to the desirability of getting the walls of a building as dry as possible. The great trouble which the Council of the Royal Sanitary Institute had had was to get statistics of condensation on walls constructed of different materials, and it was a great pity that public authorities having control of public buildings did not take records on such an important point. It would be comparatively easy for some of these authorities who had buildings faced with different plasters and paint and enamels to make some investigations even if it were only to note the days on which there was condensation on the walls. There was a form of construction used in Cumberland and Westmorland which seemed to be for the purpose of reducing moisture in the walls, which perhaps someone from those districts might describe.

Mr. Munce, M.I.C.E. (Belfast), considered that a great deal depended on the ventilation of the houses, whether they were damp or not. He did not think the system described would be any good in this country. In Ireland they had tried battening the walls inside, which made a very comfortable warm house.

Mr. A. J. Price (Lythen) agreed with the last speaker as to dampness being largely caused by want of ventilation. In his district they had nothing but hollow walls. If they put glazed or hard vitrified bricks on the inner part of a building they would get condensation, but if they used a soft brick there was no condensation.

Mr. E. T. Hall, F.R.I.B.A., said the Knapen system was creating a good deal of interest on the Continent. The scientific argument was exceedingly sound, but the difficulties of applying the system to brick construction were greater than in the case of a wall of rubble stone. The hollow wall was a good system of construction, and gave satisfactory results, for moisture driven through the outer screen travelled down the cavity to the proper drains provided. It had been said that if they opened the windows they would get satisfactory results, but that was doubtful. In the case of a sanatorium, for instance, where every window was always open, they found water condensing on the walls for the simple reason that the temperature of the room was the same as the temperature of the outer air, and if they had a cold night, followed by a change which produced a moist atmosphere, the walls were at once affected. As architects, they liked to have hard bricks for their walls because they were great weight carriers, but where it was possible he did not know but what softer bricks were better, for they absorbed the moisture. He had recently been called in to examine a public building where all the ceilings were painted, and they had been troubled with very considerable condensation on them. Under his advice they were removing the paint and substituting distemper. He strongly deprecated the battening of walls, which simply meant hiding the moisture, and was a most insanitary thing, and a very fruitful source of dry rot. Dry rot was greatly on the increase, and the Agricultural Department of the Government had recently issued a circular drawing attention to its prevalence, and stating that it was sometimes imported in the midst of what looked like a quite sound lot of timber. It was not discovered until the house was built, and some circumstance in the house caused it to disclose itself. He was engaged at the present time in a case where a teak staircase had been so affected as to be reduced to powder. He hoped, therefore, no one would suggest battening walls to keep away damp.

Mr. Max Clarke, F.R.I.B.A., said he had been struck with the fact that in Westmorland all the walls seemed to be built with the courses of stone sloping from the inside to the outside. He thought that a considerable amount of the condensation of moisture in the inside of buildings nowadays was due to the hardness of the plaster used. Owing to the strikes of plasterers and the difficulty of getting ordinary plastering done, some architects had very largely adopted hard plastering, and the result was condensation due to the changes in the atmosphere. A few months ago he examined a number of houses in St. Albans, and found that in every house where hard plaster was used there was condensation, whilst where ordinary plaster was used this did not occur. It did not seem to him that the Knapen system would be a very sanitary one, as the tubes would get stopped up with dust and so on. On board ship the difficulty was got over by covering the paint with powdered cork.

Mr. Searles-Wood said the system had been applied to brick buildings, but he had not seen them. It was also applied to telegraph poles, and it was stated that their life thereby had been increased by 50 per cent.

THREE PAPERS ON SCHOOL BUILDING.

Three papers were then read on school planning and building by Mr. W. H. Webb, Lic.R.I.B.A. (Wimbledon Borough Council), Mr. R. G. Kirkby, A.R.I.B.A., F.S.I. (late City Architect, Bradford), and Mr. Edward Willis, Assoc.M.Inst.C.E., F.S.I. (Engineer and Surveyor, Chiswick U.D. Council). That by Mr. Kirkby was concerned with open-air schools, the points of which are given in the illustrated article on page 295. Extracts from the papers by Mr. Webb and Mr. Willis follow this, together with the discussion on all three papers.

Large Public Elementary Schools in Town Districts, by William H. Webb, Lic.R.I.B.A.

Speaking generally, the principal differences between English public elementary schools and those of America and the various northern European countries are these: (1) the ground floors for the infants' departments in this country are usually placed at or about the general ground level of the site, whereas those in the countries mentioned are invariably situated at various heights above the adjoining ground level, with a lower ground floor below variously utilised for heating chambers, manual training rooms, play rooms, gymnasia, douche baths, cloak rooms, conveniences, storage apartments, and other purposes; (2) the difference in shape of classrooms, and (3) more ample spacing in classrooms (except in the case of some German schools) than is considered necessary in English schools.

Accommodation.

Some of the more advanced education authorities, in addition to well-planned classrooms, generally require provision or accommodation for some of the following:—(1) Medical inspection and waiting room; (2) douche or spray baths and dressing room; (3) manual training room for boys; (4) workroom for girls for the cutting out of garments, etc.; (5) cookery and domestic economy room for girls; (6) room of sufficient size for the instruction by the ordinary teachers in educational handwork, supplemental to manual training, for the continuous and progressive instruction of both boys and girls between the ages of 7 and 11; (7) art and music rooms; and (8) suitable plots in the school playground for the cultivation of specimens for nature study.

Classrooms.

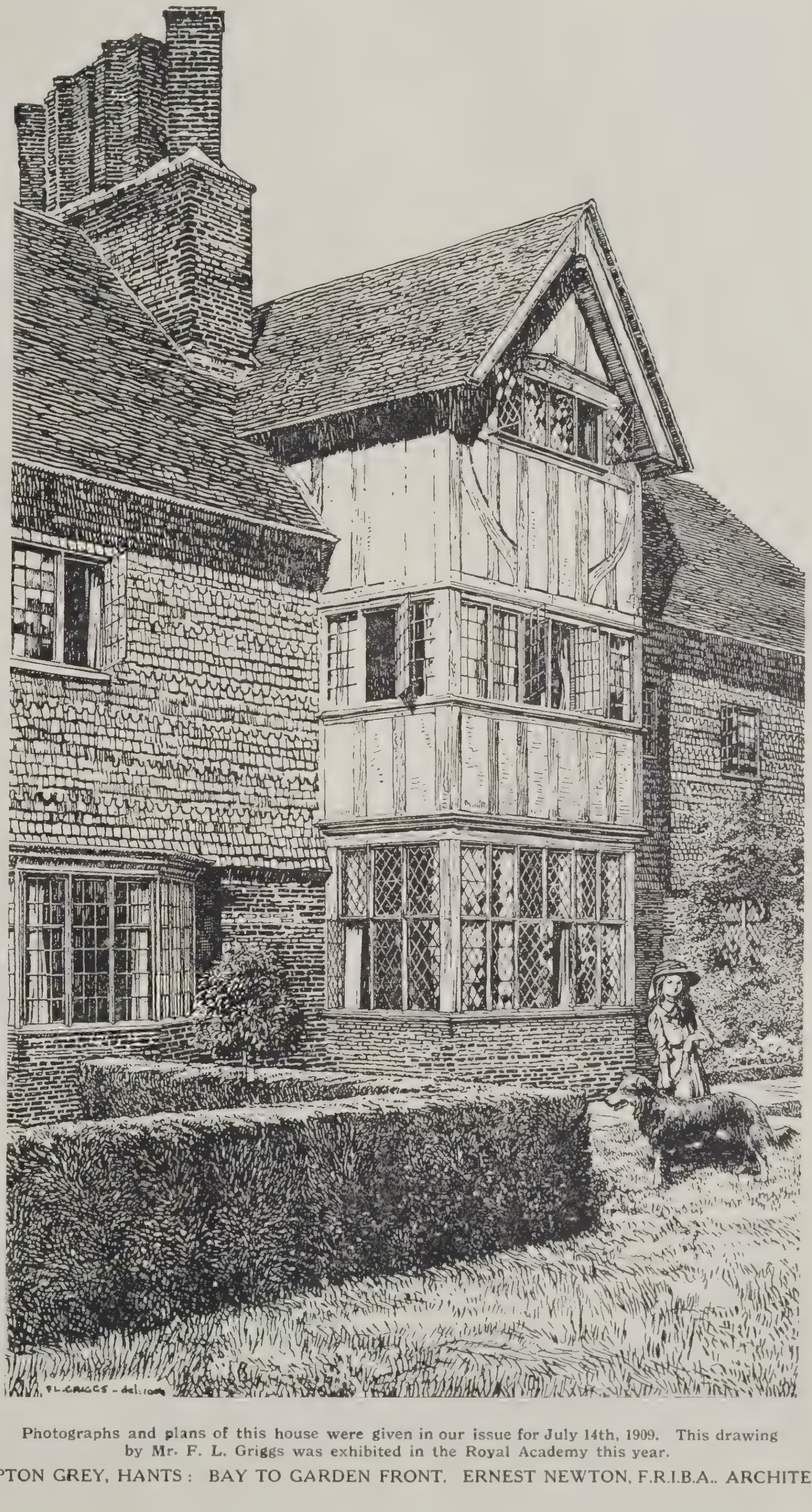
The Board of Education circular No. 709, par. 6, states that the present maximum number of 60 scholars per room will be subject to further reduction in future codes. For economical planning, therefore, 50 should be taken as a maximum, with grades of classrooms for numbers ranging from 30 to 50.

In English schools, classrooms generally, in the case of rows of dual desks five in depth, are in shape approximately square, and in the case of rows four in depth, the narrower side is placed to the external or window wall. This arrangement may be attributed to two reasons: (1) the grouping of as many rooms as possible around the three sides of the central or assembly hall for purposes of supervision; and (2) to a supposed economy in cost of construction. The more general use of the 40, or even less number, classroom in this type of school will thus render the questions of lighting and ventilation more difficult of satisfactory solution than before. In this respect the shape of the English classroom differs from that of the classroom in other countries.

The longer rectangular shape of classroom is due to a far wider study of hygienic conditions and advantages than the subject has hitherto received in this country. The important gains are: (1) increased direct lighting, (2) increased natural ventilation by external windows, and (3) the nearer proximity of the further or corridor side of the room to the direct rays of the sun.

Of mechanical ventilation the "Plenum" system imported from America is perhaps the best known, but the climatic differences between the two countries do not warrant a system so costly in installation and maintenance being adopted in English schools. The method of natural ventilation by external windows, fireplaces, and extract flues is apparently the best for school purposes. Windows fitted with properly designed hoppers, centre swing or double hung sashes and opening casements would amply provide the required quantity of fresh air if properly controlled, and no system of ventilation would be successful without the control and co-operation of the teacher. To facilitate the adjustment of windows the most simply controlled gearing is preferable to cords.

Dr. Cohn, of Breslau, as the result of his researches made in 1866, states that in class-



Photographs and plans of this house were given in our issue for July 14th, 1909. This drawing by Mr. F. L. Griggs was exhibited in the Royal Academy this year.

UPTON GREY, HANTS: BAY TO GARDEN FRONT. ERNEST NEWTON, F.R.I.B.A., ARCHITECT

Table of comparison showing the regulations or allowances in force or customary in the countries mentioned as regards accommodation, sizes, proportions, and other particulars in Public Elementary Schools (accompanying Mr. Webb's paper).

	AMERICA	BELGIUM	DENM'K	ENGLAND	FRANCE	GERMANY	NORW'Y	SWEDEN	SWITZ'RL'ND
1. *Class Rooms.*									
(*a*) Number of scholars	30–50	30–40	35–37	40–60	40–50	70–80	35–60	60	40–60
(*b*) Floor area per scholar, in feet super.	18	10.76	13.77	9–10	13–16	6½–8	11–15	15–16	15–16
(*c* Cube contents per scholar,	216	159	141	140	177	79.4	159–176	183	180–187
in feet cube	216	159	141	140	177	79.4	159–176	183	180–187
(*d*) Length of room	30′ 0″-36′ 0″	32′ 0″	33′ 0″	Varies	29′ 6″	31′ 9″	29′ 6″	29′ 2″	29′ 6″-31′ 1″
(*e*) Width of room	24′ 0″-27′ 0″	21′ 0″	24′ 6″	24′ 8″	19′ 8″	21′ 8″	21′ 3″	—	21′ 7″
(*f*) Height of room	13′ 0″	14′ 8″	9′ 7″	11′ 0″-14′ 0″	11′ 5″-14′ 8″	9′ 9″-12′ 5″	—	11′ 5″-13′ 7″	11′ 10
2. *Seatings and spacings in class rooms.*									
(*a*) Length of seat per scholar..	Single desks.	1′ 8″-2′ 0″	—	1′ 6″-1′ 8″	1′ 8″-1′ 10″	1′ 11½″	2′ 0″	—	2′ 0″-2′ 2″
(*b*) Width of desk		1′ 4″-2′ 8″	—	1′ 10″-2′ 4″	1′ 10″-2′ 8″	2′ 2″	2′ 10″	—	2′ 4″-3′ 2″
(*c*) Spacings between desks	1′ 8″-2′0″	1′ 2″-1′ 8″	1′ 6″	1′ 4″	1′ 8″-2′ 0″	1′ 8″	2′ 0″	1′ 8″-3′ 0″	1′ 11″
(*d*) Gangway by window wall ..	3′ 0″-4′ 0″	2′ 7″	2′ 8″	1′ 4″	2′ 0″-2′ 6″	1′ 4″	2′ 8″	2′ 11″	2′ 4″-3′ 3″
(*e*) Gangway by corridor wall ..	3′ 6″-5′ 0″	2′ 5″-2′ 7″	2′ 0″	1′ 4″	2′ 0″-2′ 6″	2′ 0″-2′ 8″	2′ 8″	2′ 11″	2′ 8″-3′ 11″
(*f*) Space at rear of class	3′ 0″-4′ 0″	4′ 3″-6′ 7″	1′ 0″	1′ 4″	2′0″-2′ 11″	1′ 0″	2′ 0″	1′ 8″-2′ 11″	2′ 0″-2′ 11″
(*g*) Space facing scholars	8′ 0″	4′ 8″-6′ 7″	5′ 11″	Varies	6′ 7″	5′ 7″	6′ 7″	5′ 11″-6′ 10″	6′ 7″-8′ 3″
3. *Corridors*. Width of	8′ 0″-15′ 0″	7′ 0″	5′ 1″	8′ 0″-12′ 0″	6′ 7″	6′ 7″-8′ 3″	7′ 11″	7′ 0″	9′ 10″-16′ 5″

rooms lighted under the best conditions 1.8 per cent. of myopia was discovered as against 15 per cent. in badly or inefficiently lighted rooms. The almost general unilateral left hand and supplementary indirect right hand lighting in classrooms in this country, and the quantity of direct window light area per scholar usually provided, leaves little to be desired in this respect. The introduction of cross ventilation by bilateral windows for direct lighting, as mentioned in the case of the Derbyshire and Staffordshire schools, however, produces another evil, in that one side of an object is more strongly lighted than the other according to the relative distances at which it is placed from the opposite windows, with the result that the shadows are more or less accentuated, and the appearance of the object may be constantly changing.

The usual method of constructing the cloak-rooms between mezzanine floors is one that cannot be too strongly condemned, and it can only be on the grounds of economy in the primary cost of construction that such planning can be defended.

These rooms should be well lighted and ventilated on one or more sides, and so constructed as to secure the benefits of as much sunlight as the circumstances of the site will allow. They should also be efficiently heated for the drying of clothing and boots.

Statistics of children examined in Bradford in 1906 and 1908 show a large proportion described as "somewhat dirty, dirty, or very dirty." In Sheffield of 4,140 children examined in 1908, 36 per cent. had verminous heads, and 12 per cent. dirty bodies, and in London, of 92,185 children examined in 1908, 18 per cent. had verminous heads, and of another 23,849, 23 per cent. were so described.

It is not to be wondered at that parents, being aware of these facts, do not care to send their children to such schools, and endeavour by any means to send them to "private schools," and in the interests of these children, who would otherwise attend the public elementary schools, improvement in cloak-room accommodation is eminently desirable.

The cloak-room spaces in American schools are mostly situated in the corridors adjacent to the classrooms, and in close proximity to the ventilating and heating shafts. In many instances they are placed between the classrooms, and are accessible from the classrooms as well as from the corridors; and not infrequently portions of a sub-ground floor are utilised for the purpose. In all cases separate cloak-rooms are provided for each classroom.

In French schools cloak-rooms are accommodated in covered playgrounds, corridors, and sometimes between the classrooms, as in America. In Germany, Switzerland, and other countries the corridors sometimes serve as hanging places for garments; but in some of the larger and better schools an arrangement similar to the English cloak-room is adopted, with the exception that the cloak-rooms are in the nature of recesses formed in the corridor, and with open wire partitions separating them from the corridors.

Teachers' rooms required by the Board of Education both for head teachers and assistant teachers are generally planned as mezzanine floors between the cloak or other rooms on the main floors. Economy in the first cost of building is no doubt the reason for this objectionable method. The rooms are usually insufficiently lighted, low in height, and are most depressing apartments to occupy. It will be found on examination that these rooms, more especially those between the ground and first, and between the second and top floors, are not in compliance with the requirements of the London Building Act, or the Local Government Board's Model By-laws as to habitable rooms and windows.

In England the Board of Education require that the water closets and urinals for scholars should be placed outside the school buildings. In France, also, this system exists, as well as that of placing them adjacent to or inside the building. In America, Germany, and other European countries, they are invariably designed as an integral part of the school building, but with this difference, that in America they are mostly found in the sub-ground or ground floors. A frequent plan in modern German schools is to arrange them alongside detached assembly halls or gymnasia (on the ground floor only) approached by short covered ways. Those in other European countries are more frequently arranged off the corridors, staircases, etc., and adjacent to the classrooms of the floors they are intended to serve.

There are many advantages in the last method of placing the conveniences, amongst which may be noted (1) the supervision necessary for their perfect sanitary condition is more easily effected by the head teacher and staff; (2) the fittings and appliances are prevented from damage by frost and theft; (3) the possible saving in initial cost of construction and upkeep; (4) the facility of access by the scholars and the consequent saving of school time; (5) the gain in unobstructed playground area; (6) the prevention of nuisance to occupants of adjoining premises; and (7) the greater facility of supervision by teachers for the encouragement of cleanly habits in the younger scholars.

Amongst the disadvantages of placing the offices inside the building is, of course, the difficulty of preventing unpleasant odours pervading the corridors and classrooms.

There should be no reason why a properly constructed, lighted, ventilated, and furnished convenience, so placed as to be under the constant supervision of those in charge of the scholars, should be any more detrimental to health than those usually provided in English schools, which are generally dirty, the apparatus frequently out of order, and at such distances from the school building as to necessitate, in winter months, a scholar, fresh from the warm or over-heated room, crossing the playground in inclement weather, frequently without his or her outer garments.

The provision of suitable and convenient rooms for the school medical officer for the periodical inspection of children, with the necessary waiting room and lavatory accommodation, is an additional item of the modern requirements in school buildings.

On the Conversion and Equipment of Schools to be used as Special Subject Centres. By Edward Willis, Assoc. M.Inst.C.E., F.S.I., Engineer and Surveyor, Chiswick.

The first point is to arrange for combined centres so that the full grant can be obtained. The best position for a complete centre for 36 or 54 students appears to be one which is practically central or equidistant from a number of girls' elementary schools, and then by a careful arrangement full classes can be provided and the maximum advantages obtained for both the student and local authority. The alternative of a separate building is to attach the special centre to the largest girls' school or the one most central, and provide for separate entrances and exits.

The single floor system is by far the best where land is cheap, or where expense is a secondary consideration, but where economy is a *sine qua non*, and land expensive or not available, a useful method is to adapt existing buildings to the purpose required. There appears no objection to the cookery and housewifery centres being on the first floor.

Ample natural lighting is desirable in each centre; and where possible, handicraft, laundry, and cookery rooms should be provided with roof lighting. This, of course, is not possible in two-storey buildings, and in such cases windows should preferably be provided in at least two external walls.

Artificial illumination should be effected by incandescent electric light attached to balance pendants over the benches, desks, and tables, with brackets near the stove and fireplaces. If gas only is procurable, two or three light pendants (according to the size of room), with ball and socket heads, give the best illumination, providing incandescent mantles and reflecting shades are used. The inverted mantles, with proper shades, reduce shadow, and if properly disposed, give an excellent diffused light.

Warming is provided by hot water pipes or radiators, but open fires have many advantages, and if properly disposed and protected can generally be utilised at a nominal cost. This applies especially in the case of cookery, laundry, and housewifery centres, as it is usual and helpful for students to have continual practice in laying, lighting, and maintaining good fires in ordinary household grates and kitcheners, and not rely entirely on cooking by gas to avoid the trouble incidental to ordinary coal-fire stoves or ranges.

The permanent equipment of a handicraft centre should provide at least 35 square feet per boy, and include all that is necessary for 20 or 40 boys, the former being the maximum number allowed in a single class under one certified instructor.

The equipment consists of timber racks, which should be horizontal, as the vertical rack is often dangerous for boys; with cupboards or lockers, which are designed with at least ten separate compartments, and usually not more than twelve, forming a division for every class wherein the drawings and work are stored each week; museum cupboards with glass fronts, where all the models are stored when not in use, and the best examples of students' work should be kept for inspection; instructor's desks and lock-up cupboards for their own private use; students' lockers in which the students have similar privileges; blackboards and drawing appliances; dual benches and tool racks; grindstone, and a complete set of tools for the centre, with usual ordinary tools for every student.

The area in the general cookery demonstration rooms must be at least 25 square feet per girl; if used for lecture rooms as well, and existing buildings are converted, a margin is advantageous. This is especially useful if galleries are formed for the desks, and the laundry work is taught in the same room. A larder or pantry with window and ventilator in an external wall, should be provided for each cookery class, and also in the housewifery centre.

A difference of opinion exists as to the position of the sinks, some teachers prefering the sink kept away from the wall so that access can be had all round both sink and teak draining board, which enables more girls to have experience in washing up at one time. Others prefer the usual position against a continuous wall, or in an angle as being more practical. The depth and quality of the sink is a matter of choice, but a deep white glazed (all over) type, with upright waste and flap, is more easily kept in a cleanly condition, or more apparent if not kept clean. A tile or cement floor underneath and around same for at least two feet is desirable in new work, but a lead safe will meet the necessities in old buildings. A similar floor is advantageous in a laundry centre, if on an upper storey, where the copper and wringer usually stand, as also underneath the washing stools.

In the case of housewifery combined with laundry and cookery, the accommodation should be, sitting-room, bedroom, kitchen, scullery, store, coal cupboard, larder, and water-closets, whilst a small bathroom is desirable. It will thus be seen, the lecture-room is entirely done away with, and the Board have recently sanctioned the omission of kitchen and scullery where the combined cookery and laundry room adjoins. The internal water-closet should be used for demonstration purposes, the children's offices being provided if possible in the playground, clear of the building.

The actual arrangements for decoration, stoves, blinds, fittings, etc., should be largely in the choice of the head teacher.

General cookery rooms should be provided with desks for class work, preferably on two or more galleries, and in this case long continuous desks can be adopted, allowing about 1ft. 6in. to each girl. A similar space must be given to every child on the central table in the cookery centre, the width of 1ft. 6in. to 2ft. being absolutely necessary. Some teachers prefer the enclosed type with cupboards, others the open tables with solid top, and just one shelf below to place the utensils upon when not in use. A good arrangement is to have a capital E form, the top and bottom tables being 6ft. long, the long side being made up of two more each 7ft. 6in. long, and the middle being a table of about 2ft. square, to carry a grilling and boiling gas stove without an oven. This gives an excellent arrangement for demonstration purposes, and if a complete gas cooking stove with an ordinary kitchener are also provided inside the E against the wall, the students have an excellent opportunity of seeing the whole of the demonstration. Two cupboards for work, books, etc., are desirable, and a large dresser with the usual drawers and lower cupboard. Hot and cold water is also useful at the sinks.

Nine washing stools will be necessary, also a proper copper, or in lieu of this latter a gas-fired copper with a cold water supply above and a draw-off tap below. An ironing stove will also be required for about twenty-seven plain and nine smoothing irons, and to the roof should be suspended by pillars a complete system of drying frames, easily raised or lowered, which would reduce the usual number of clothes horses. This is the general accommodation and equipment required in a combined centre for thirty-six girls, which will give facilities for the education of 360 students per week.

Discussion.

Dr. Nash (Wimbledon) described the papers as being in some respect epoch making. It seemed to him that a large number of schools were designed from the wrong end. They would remember a meeting at Derby of the Institute where certain ideas ran riot altogether, and it seemed to him that schools should be designed and built up from a unit which should be the classroom, for, after all, schools were built for teaching. He had in his eye a school which had been built comparatively recently as the result of open competition, which was an annoyance to everyone interested in hygiene. What they had to establish first was what was the ideal classroom, and to build up from this, and that was what seemed to be Mr. Kirkby's idea, for on looking at the Butterworth school one saw that an ideal classroom had been made the basis of the whole school. Unfortunately most local authorities would not spend money in the lavish way that Bradford did in regard to schools. Mr. Webb had drawn attention to the marked deficiency which existed as regarded cloak-rooms, and in most schools they were an abomination. He saw that Mr. Kirkby had gone in the direction of coupling the lavatories up to the school, and he saw no objection to that. His idea of a cloak-room was to have a free current of air travelling right through, and between each row of pegs there should be hot-water pipes to dry the clothes. Another important point was the position of the fireplaces, and architects did not seem to realise that teachers had to teach in the room, and very often placed the fireplaces at a point which meant that the teacher had to have his back roasted by the fire. He contended that the wall facing the children should be absolutely flat. He disapproved of the design for classrooms in Derbyshire. There they found most of the schools had glass partitions, but those who knew anything thing about a child knew they could have nothing worse than broken lights.

Mr. Osborn Smith, F.R.I.B.A., thought the experience of Dr. Nash must have been unfortunate when he spoke in such sweeping condemnation of the schools provided for elementary education in this country. At the same time he agreed that there was room for considerable improvement, especially with regard to classrooms. If Dr. Nash went into the secondary schools in London he would find cloak-room arrangements which even he would approve of. They had windows on two or more sides of the room; the stands were placed 5 or 6 feet apart, and each peg was 12 inches apart, so that the clothes hung perfectly free of each other. There was ample circulation of air, and underneath were hot-water pipes for drying the clothes. In the elementary schools in London they had been rather wedded to the wretched rooms where the ceiling could be touched, and which were only ventilated from one end. With regard to Mr. Webb's paper, he saw no reason why cloak-rooms should be 13ft. high, although they should be higher than they were now. When the Institute met at Bradford some years ago they were taken over some of the schools, and were not favourably impressed with the means of ventilating. It was delightful therefore to hear that in Bradford, the home of the plenum system of ventilating schools, they were now moving in the direction of open-air schools, and advocates of the plenum system should carefully mark that. The cost of equipment mentioned by Mr. Willis seemed high. He thought where boys were going to be taught carpentering the teacher should be a thoroughly competent carpenter, and that the boys under instruction should make many of the fittings. With regard to the plans before them, he thought the schools ought to go more in the direction indicated by Mr. Kirkby, than in the Wimbledon school, and the cost should not exceed 6d. per cubic foot. The question of cross lighting was an extremely interesting one. He would be glad to hear if doctors objected to it on account of injury to the eye by conflicting lights. He would like to know why in the Wimbledon school the internal walls were so thick, the corridors so wide, why the staircases were not wider, and why the lavatories and cloak-rooms were so high.

Mr. Carden (Brighton) said that they could not all have open air schools. The Brighton authorities had inspected the Staffordshire type of school, and had decided to adopt that for a new school, but they thought they would get more fresh air into the classrooms. One great advantage of this type of school was that it was cheap, and the cost would come out at about £15 a head.

Dr. Smith (York) considered that in the future design of schools the school medical officer ought to be consulted by the architect, for it was rather lamentable to meet in comparatively recent years some of the defects in the design of schools by architects whom they knew were disposed to consider architecture first, and the principles of sanitation as a secondary matter. He was impressed with the idea that they ought to work more and more in the direction of open-air schools. He considered the Staffordshire type of school much the best, although the central hall type overcame one difficulty in regard to cross lights. It ought not, however, to be beyond the power of architects to design a school by which the amount of light should come to one side of the pupil. He had seen the new open-air school at Bradford, and thought it was constructed comparatively cheaply. It was a delightful place, and doing splendid work.

Mr. J. Darch said he noticed that in some of the plans the arrangements of the desks was far from satisfactory with regard to saving the children's eyes. He suggested that every architect should state in his specifications that every desk should have at least so much light, whilst he would also like to see in any legal enactments quantities of light specified in standard units.

Mr. J. H. Blizard (Southampton) asked Mr. Willis to explain how the children did practical work in the cookery centre as shown in the plan.

Dr. Freemantle (Herts) remarked that the point was how to do all the things suggested without increasing the cost of building. What they wanted to get at was what other things could be omitted to allow of improvements. From the health point of view they wanted a simpler type of school without unnecessary ornament. In his case he got into communication with the architect of schools before before their plans came before the committee, because naturally when the plans were once before the Education Authority professional self respect made it difficult for the architect to support the recommendations of the medical officer.

Mr. Webb said that the height of the cloakrooms referred to would be approximately 8 or 9 feet, with a space between used as store cupboards. The width of the corridors was 10 feet, but in a good many countries the width of the corridors ranged from 8ft. to 16ft. in the case of Switzerland. These corridors were used in Switzerland and Germany as marching corridors. They had not in this country approached anything like the cost per head of elementary schools in Germany, Switzerland, and America.

Mr. Kirkby said Dr. Nash had raised the question of cross lights. Although he should probably meet with opposition, still he was of opinion that lighting on two sides of a classroom was better than lighting on one side only. If they had light on both sides of the classroom they got rid of cross light because they diffused the light. If they had light only on one side a child was working in its own shadow. The cloak-rooms in the Bradford schools were heated by utilising the fittings as hot-water pipes. The cost of the open-air school would be about £14 a head, but the Butterworth school cost £8 or £10 more. At the Butterworth school, however, they had a system of baths, and a large kitchen, etc., and the building was not as costly as it looked, for owing to the position certain extras had to be added. He had never suggested the Thackley school as an elementary school, for it was designed for a class of children who were not fit to attend an elementary school. He always consulted the medical officer with regard to his plans before submitting them to the committee. At the same time he suggested that he would have a funny kind of building if he attempted to design a school according to the ideas of everyone in that room. An architect had to receive ideas and sift them, and when he had made up his mind he must go straight ahead. Medical officers and teachers and committees were always saying the accommodation for this, that, and the other should be increased, but the cost of schools was going up all the time, and the poor architects were blamed. At the same time he would point out that four of their schools at Bradford were built for 6d. a cubic foot. Thackley school was cheaper, and worked out at somewhere about 5d. The construction might not be so solid and permanent as some of the buildings constructed of stone, yet he thought the latest ideas which had been put forward in school planning could be embodied in a plan which would meet the most exacting requirement and yet could be put up at a minimum cost.

Mr. Willis said that Mr. Osborn Smith had mentioned the very large apparent cost of equipment, and the comparatively small cost of the school. What he wished to emphasise was the economy which could be obtained by careful design. Some of the fittings in the school were being made by the students. With regard to the cookery centre which Mr. Blizard asked about, the idea of galleries was to give better facilities for the documentary part of the work as distinct from the practical side. The practical part of the work must be carried on on tables such as the children had in their own homes, and these were provided.

FEVER HOSPITALS.

Mr. Saxon Snell, F.R.I.B.A., read a paper on Fever Hospitals, in the course of which he said:—

A general hospital may be considered as an institution for obtaining the best skilled treatment and nursing at the minimum of cost. A fever hospital is more than that. It is also a house of detention for, and destruction of, infectious disease germs, though how far it succeeds in these directions appears to be a debatable matter. The number of beds required is generally determined by a ratio to the population of the district (subject to modification in the light of local conditions); but the number so obtained is for the greater part of the time absurdly too large, and in times of epidemic it may easily prove too small. Authorities have to, and do, choose the lesser evil, and so are obliged to saddle the community with buildings which are wholly or partially unused for months or even years. Fever hospitals, as generally built, are expensive erections. The cubic space per bed is double that required in a general hospital, and the area of land is even greater in proportion. A general hospital may be built within the confines of a town; a fever hospital must be isolated in open country. Yet again different institutions, or at least different ward blocks, must be provided for different diseases. Now, as to hospital buildings (with which of course I am more immediately concerned), it has been sought to reduce the cost by constructing them of light and cheap materials—generally timber framing lined with boarding and galvanised iron; and this method has been advocated also on the ground that all fever hospitals ought to be pulled down and burnt within a limited number of years. They are, however, wasteful of heat, require great expense in repair and upkeep, and it must be added that the moral courage required to scrap them periodically is often wanting. Moreover, they are necessarily crowded with dust and germ-holding corners, angles, and hidden spaces.

It has always appeared to me that excellent buildings at comparatively small cost could be obtained with steel framing filled in with light concrete construction. The walls might be formed with two thin slabs fixed so as to cover the steelwork, and with a small air-space between them which would help to keep the building wind and weather tight and reasonably warm. They would be finished inside and out with hard plaster. The floors would be formed with concrete laid between steel joists, and covered with one or other of the many patent compositions in the market, which are both impervious and cheap. The ceilings would be formed in the same manner as the walls. With such construction it is easy to obtain flat and even surfaces, unbroken by unnecessary and dust-collecting ledges and angles, which are to be avoided at all costs in fever wards. The windows would be steel casements, and the doors might with advantage be framed with steel and sheet iron. Periodically the concrete filling and surface finishings might be removed and reinstated with new material. The steel framework would require washing only. Such buildings, or, rather, the framework, could be taken down with comparative ease and at small expense for re-erection on a different site if required; and their cost, although greater than ordinary wood-framed constructions, would be far less than for permanent brick and stone buildings.

The administrative and staff quarters would be designed as permanent structures and with due regard to comfort and pleasure. Radical spirits have advocated doing away with buildings altogether for housing fever cases, and substituting tents. The great point (apart from the question of cost) seems to be that the patients lie practically in the open air.

The second point I would refer to is the liability of fever hospitals to become a source of infection to the surrounding area.

The Local Government Board, taking as always the middle line of safety, insists that in case of smallpox hospitals this contingency should be taken into account. For other infectious diseases it prescribes a zone of 40 ft. only round the ward blocks.

Dr. B. W. Richardson proposed to avoid risks of the kind by passing the vitiated air of the hospital through the heated gases of a furnace; and Dr. Burden Sanderson advocated this system. Actual experiment has, however, shown that it was difficult to ensure the destruction of the germs owing to the fact that many passed through the furnace unscathed. I cannot but think the idea is worthy of further experiment.

The third point to which I would refer is a method of reducing the number of separate blocks for different diseases and obviating the necessity of placing more than one disease in a ward. The Pasteur Hospital in Paris is a practical experiment in this direction. —Mr. Snell then gave some particulars of a complete hospital designed by himself on these lines; a system has been adopted in this country at Norwich, Walthamstow and other places.—The Metropolitan Asylums Board have also made experiments in the same direction. My building is two storeys in height (one would be better, but the site was constricted). Each ward block is divided into separate rooms (12 on each floor) on either side of the corridor which is open to the air at each end. The internal walls of these rooms (each of which is for one patient) are of plate-glass fixed in light steel frames. The glass is obscured to a height of 30 inches. In this way the patients are more easily kept under observation, and suffer the monotony of isolation in a modified degree only. Each room is separately ventilated and heated. The casement windows are relied upon at most times for bringing in a flood of fresh air, and the vitiated air is drawn off by large flues at the ceiling level. I think it would be of advantage to assist the outflows by electric fans. By these means there is no possibility of the air from one compartment being carried into another; and under these circumstances (as conclusively proved by the Pasteur Hospital), it would be possible to treat several different diseases in the same building. A balcony is carried round the building on both floors from which the patients can be seen by friends or relatives. The staircase and lift approach, as also bath rooms, ward kitchens and soil sinks, are cut off by a passage open at each end to the air. A separate exit staircase and lift, linen rooms, discharge room, etc., are placed at the other end of the building and cut off in the same way. The floors and roof would be of solid construction and fire-resisting, and of course all angles are rounded and every kind of ledge for dust avoided. The lower floor is placed several feet above the level of the ground to allow of a free circulation of air below as well as above and around the building. The various pipes for conveying heat, water, and lighting would be suspended from the ceiling of this open basement, and all should be well insulated against cold. The whole building might with advantage be constructed throughout in reinforced concrete. It should not be beyond the powers of an architect to relieve the surfaces with colour and flat ornament which would render the building sightly and indeed attractive

Discussion.

Mr. Willis (Chiswick), in moving a vote of thanks to Mr. Snell, referred to the large practice which the author had in the design of hospitals, workhouses and other public buildings.

Dr. Nash, in seconding the motion, asked what the author estimated the construction of a modern hospital was going to work out at. He supposed Mr. Snell's idea was reinforced concrete. His authority had now under consideration an extension which would cost about £12,000, and had referred the scheme back for consideration with newer constructional methods. He would like the author also to give figures with regard to cost as compared with reinforced concrete of the method used at the Frimley Sanatorium.

Mr Snell said he had not worked out the cost of temporary hospitals, but from what he knew he should think the ward blocks could be done for about 6d. a foot.

Dr. Nash asked the cost per bed.

Mr. Snell said that would of course depend on many things.

NEW BUILDINGS.

PROPOSED.

Blackburn.—The Blackburn Town Council has decided to raise certain sums of money under the Local Loans Act, including the sum of £5,400 for the purchase of property in King Street and Penny Street for improvement, £24,150 for the higher elementary school, Blakey Moor, and £15,000 (part of a loan of £60,000) for new sessions house and police court on Blakey Moor.

Brighton.—The County Borough of Brighton having applied to the Local Government Board for sanction to borrow the sum of £3,790 for the erection of working-class dwellings on lands adjoining Tillstone Street, an inquiry has been held at the Town Hall, Brighton, by Mr. Edward Leonard, P.A., S.I. (Local Government Board Inspector). The Council also applied for consent to the appropriation of the money for the purposes of Part III. of the Housing of Working Classes Act, 1890. The scheme met with considerable opposition.

Burnham (Somerset).—The sea front improvement scheme was discussed at a recent meeting of the Urban Council, when it was stated that the result of the postcard poll showed a large majority in favour of the adoption of the full scheme. The Clerk said that the best plan was to accept the tenders provisionally, and then to acquire power to borrow the money required. The Surveyor reported that under correction the previous lowest tender, namely, that of Messrs. Morgan and Co., of Newport, had been increased to £4,427 16s. 6d., making that of Messrs. G. L. Morgan, of Pontypridd, at £4,144, lowest. It was decided that this tender for widening the Parade be provisionally accepted, and also that those of Mr. W. J. Pople for the substructure and other work at £1,002 10s., and that of Messrs. Macfarlane and Co., of Glasgow, at £1,351 3s. for the pavilion, be similarly accepted. Subsequently it was agreed to apply for a loan of £6,900.

Carluke (Scotland).—Plans have been approved for the erection of the new manual instruction room at Law School. They provide for a building having a room for the teaching of household management in front, and a manual instruction room is situated at the rear. The total cost will be about £850.

Kidderminster.—The Baths Committee of the Kidderminster Corporation have been considering the question of erecting new public baths for the borough. The existing baths have been in use for about half a century, and are both dilapidated and antiquated. The committee propose to bring the question before the Town Council at their next meeting.

Peebles.—It is announced that Mr. Andrew Carnegie has placed £10,000 in the hands of the Master of Elibank and Sir Henry Ballantyne for remodelling, extending, and improving the Chambers Institute, Peebles.

Perth.—The School Board are dealing with the problem of co-ordinating the educational system of the city. The necessity of so doing arose from the transference to their control of Sharp's Institution and the demand of the Education Department for the erection of a new Academy. The Board has decided to amalgamate the two schools (1) by adapting the buildings of Sharp's Institution to serve as a preparatory school, and (2) by erecting a new school on the site of the present Academy building to be used as a secondary school. The estimated cost of the scheme is £20,000.

Suffolk.—The recent circular from the Road Board inviting applications from county councils for grants for road improvements have been considered by both the East and West Suffolk Councils. When preparing the estimates for the coming year, the bad condition of the roads was the subject of very careful consideration by the East Suffolk County Council, who appointed a sub-committee to inspect and report. According to this body nothing short of reconstruction would have any lasting effect, the main roads between Stonham and Ipswich and from the latter to the Essex boundary at Stratford St. Mary being specified as requiring immediate attention. The cost of reconstructing these roads is estimated at £30,000, and the Council have decided to apply for a grant of £16,000.

In West Suffolk a conference has been held between a special committee of the county council and representatives of the various highway authorities. The improvements mentioned by the highway authorities include widening, modification of dangerous corners, tar-painting and the repair or construction of bridges.

IN PROGRESS AND COMPLETED.

Bootle.—The girls' new secondary school has been opened by Sir Benjamin S. Johnson. The building, which occupies a site between the Corporation baths and the Technical School in Balliol Road, provides accommodation for 200 girls, and includes, besides the classrooms and the large hall, a laboratory, lecture-room and art-room. Mr. Hastwell Grayson, M.A., was the architect, Mr. T. Spencer (Aintree) the builder, and Messrs. Killick and Cochrane the heating contractors.

Coventry.—The Town Council has approved the following plans:—Additions to Radford Schools, Radford Road; two houses, Humber Avenue; alterations and additions, Little Park Street; eight houses, Gulson Road; grand stand, Highfield Road; drainage, Coniston Road; three houses, North Street, Stoke; alterations and additions to Warwick Road Sunday Schools; additions to lodging house, 150, Spon Street; 12 houses, Mickleton Road; bacon curing premises, Garden Row, Smithford Street; two houses, Stoney Stanton Road; 10 houses, Heath Road; house and shop, Albany Road; two houses, Broadway; house, Stepney Road; factory, etc., Northey Road; boiler house, Sandy Lane; 26 houses, Stanway Road; alterations, 617, Stoney Stanton Road; two houses, Earlsdon Lane; boiler house and chimney stack, Radford Fields (off Sandy Lane); house and shop, Mayfield Road; two houses, Stanway Road; seven houses, Caldecote Road; eleven houses, Humber Avenue; two houses, St. Michaels Road; eight houses, Dean Street; two houses, Silverton Road; six houses, and house and shop, Swan Lane; additions to Garage, Drapers' Fields; four houses, Lythall's Lane; two houses Lythall's Lane; five houses, Lythall's Lane; two houses, Spencer Avenue.

Crewe.—Many important buildings are in course of erection at Crewe, among them being the Railway Orphanage off Victoria Avenue; the Cheshire Training College just outside the borough boundary; the Bedford Street Schools, the Ursuline Convent off Nantwich Road, the Lyceum Theatre in Heath Street, and the new Counties Bank in Market Street. New schools in Hightown and Derby Street are also about to be erected, and further new sewerage extensions are to be carried out.

Edinburgh.—A commencement has now been made with the construction of the new military station at Redford, near Edinburgh. The station is to include large Cavalry and Infantry barracks, and the buildings are to be proceeded with as soon as the ground has been levelled, a task on which about 100 men are now employed. The foundations for the soldiers' quarters will be laid in the course of the present month. The whole of the area acquired from the Heriot Trustees has now been handed over to the contractors.

Falkirk.—A large extension to the Falkirk High School has been formally opened by the chairman of the Burgh School Board. The extension consists of an entirely separate two-storey building situated at the corner of Rennie and Griffiths Streets, on what was formerly the lawn tennis court in connection with the High School. Messrs. A. and W. Black, Falkirk, were the architects, and the building has involved an estimated expenditure of £6,600.

Leicester.—Foundation stones have been laid of a new Primitive Methodist Church, which is in course of erection on the Humberstone Road, at a cost of £1,500. The building is designed in the Gothic style, and will be 56ft. long by 36ft. wide.

Little Staughton (Beds.).—Ten years ago the church of All Saints, Little Staughton, was struck by lightning, which destroyed the greater part of the octagonal spire and caused, in addition, much damage to the roof and interior of the church. As the interior was already in great need of restoration, it was decided to restore this at once, and the spire was left in a truncated condition, surmounted by an oaken cap for protection against the weather. The work of rebuilding the spire is now in progress, the contractors being Messrs. George Wrycroft and Sons, of St. Neots, and the architect, Mr. W. B. Stonebridge, Ely Diocesan architect.

London, E.C.—The Cordwainers' Company have rebuilt their premises in Cannon Street for the third time. The last hall was demolished little more than a year ago, and was built about 130 years since, from the designs of Sylvanus Hall. The new hall is designed in the English Renaissance style, and has a frontage to the street of about 60ft. It has an entrance hall of Aberdeen granite, with a shallow concrete dome. This hall gives access to a staircase of oak. Mr. H. Chatfeild Clark, F.R.I.B.A., the company's surveyor, was the architect.

London, S.E.—The Mayor of Deptford, Mr. Edward G. H. Berryman, has laid the foundation-stone of the first of three libraries which are to be built in the borough at the cost of Mr. Andrew Carnegie. This building, in the New Cross Road, is estimated to cost £4,500. Mr. Carnegie has promised to provide for the building of another at the same cost, and also of a central library, a site for which has been secured in Lewisham High Road at an estimated cost of £12,000.

Newcastle-on-Tyne.—The ancient church of St. Andrew has been in the hands of workmen for some months past, during which period a further advance has been made towards its complete restoration. The plaster which had for centuries hidden and disfigured the walls of the nave, aisles, chancel and north transept has been entirely removed, and the ancient walls, which were found in excellent preservation, have been carefully re-pointed. The work has been carried out under the superintendence of Messrs. Fenwicke and Watson, architects, Newcastle, by Mr. T. Lumsden, contractor, Newcastle and Jarrow, at a cost of about £350. This makes a total of £6,100 expended on the restoration to date.

Owlerton (Sheffield).—The foundation-stone has been laid of the new Methodist Church in Penistone Road, Owlerton. The buildings have been designed in the Norman style by Mr. Teather, of Messrs. Gibbs, Flockton and Teather, architects, Sheffield. The tenders of Messrs. Thomas Wilkinson and Sons, and others, have been accepted, amounting to £3,816 7s.

Redditch.—An inquiry has been held at Redditch by Mr. Edgar Dudley, on behalf of the Local Government Board, respecting an application by the Urban District Council for sanction to borrow £1,200 for the purchase of property for the widening of Alcester Street.

Romford (Essex).—The Urban District Council has approved the following plans:—Additions to the Convent, 24, Western Road; 10 houses in Balgores Lane; two houses in Heath Park Road; house in North Street.

Shrewsbury.—The work in connection with the building of the bridge stretching from the Castle Fields to the Cherry Orchard side of the River Severn at Shrewsbury is practically completed, and workmen are at present engaged in painting the structure. The new promenade from the English Bridge is to be illuminated by means of electric light in future, and the necessary standards are now being put up. The work of rebuilding the river wall and the improvement to the footpath is also well forward; and in spite of the many difficulties which have confronted the contractors the building of the weir is fast approaching completion. Some damage was done in the early stages by the excessive rush of water at high flood, but the scheme is now so far forward that the erection will be able to withstand the greatest strain that might be put upon it.

Stoke.—The decoration of the new Council Chamber, which forms part of the extensions being made to the Stoke Town Hall, is now in progress, the fittings, which are being supplied by Messrs. Jones, Moss and Co., of Newcastle, costing approximately £1,500.

Thornhill Lees (Dewsbury).—The Dewsbury Town Council has approved the following plans:—House and stable in Staithes Road; five houses and shops in Lees Hall Road; new back street off Ingham Lane; new back street in Thornhill Lees (position not specified); six houses in Ingham Lane.

PLANNING COWSHEDS.

An American agricultural journal has taken a consensus of opinion on the best way of building stalls in the cowsheds—to face the cows inward or the other way. Both methods have their advocates.

The following are some of the chief advantages and objections to each method, which may be considered when deciding which system will best fit in with individual conditions and general plan. With the feeding alley in the centre the advantages are:—

1. Greater convenience and rapidity of feeding, since liberal width for passage of feed trucks or carriers can be given without undue increase in construction cost.

2. There is much better natural light on the business end of the cow, and a liberal amount is required during nearly all the work here, such as cleaning the udders and cows, milking, weighing, and recording the milk, etc.

3. There is less interference with direct sunlight over the interior, as the vertical obstructions (stanchions or ties) are nearer the centre. It allows the walls to be used for supporting milk scales and milk-record sheets.

4. There is less confusion, with attendant crowding, butting, and loss of milk, among the cows when the doors are at end of wing, and much less when they can be located at centre of side.

5. The high-level feeding passage, which allows instantaneous return of all feed thrown out with a broom, can also be more conveniently constructed with this system.

The objections to this method are:—

1. The principal one is that there is at times (when cows are "loose" from rank grass or other causes) some splashing of the lower wall with manure, unless the walk behind can be made extra wide. As, however, concrete, or cement plaster on lathing is now almost invariably used at least for five feet up, an occasional cleaning with hose and brush, and once or twice a year cement wash or paint, will keep the cowshed up to inspection.

2. Another disadvantage is that in some climates the best ventilation is to introduce the fresh air through the side windows, and exhaust the hot and foul air through a central top exhaust. Now the fresh air should always be coming to the cows' heads, but in this case it has to pass over the opposite line of cows before reaching the cow. One can, however, be so liberal with openings that this trouble is not very material.

With cows facing outward, the advantages are:—

1. The chief advantage of this system is one that only applies to a breeding herd, especially one from which sales are made. By having the business ends of two rows of cows together, and on a platform raised some four or five inches, the cows and their udders show off to more advantages, and it is easier to make comparisons of the different animals.

2. If an overhead manure trolley or track is not used, and the manure is removed with a cart, this can travel between the two gutters, and be filled directly.

3. Where artificial light must be used for one of the milkings, or often both in winter, much better and cheaper results can be had here from drop lights between the cows.

4. As given above, for warm climate barns, the ventilation is a simpler and better problem.

The objections are:—

1. It is often hard to provide room cheaply for the passing on of the feed trucks or carriers from one line to the other, so as to make the operation as continous as possible. It is bad business to have to return idle along a row of cows that have to be fed before another one can be commenced.

2. Where the ceiling has to be cheaply supported, which means posts instead of trusses, there is generally trouble in spacing these posts. This system will not allow them to be placed against mangers as a part of the stanching or tie construction, as in this case this would leave two-thirds of the span unsupported, and just where most of the weight would be, each side the centre. This is one of the most serious objections to this method. When working out the details of a dairy plant it is well to keep in mind that the first and most important object to be secured is the rapid and easy milking of the cows, and the getting of this milk to the cooler or separator the first moment possible. This is a vital point where skilled labour is used. Feeding and cow comforts, with cost of construction, come next for consideration, and, lastly, the disposal of the manure, where no skilled labour is called for. If there must be any departure from the wished-for ideal method, let it be here rather than with the other operations.

FEDERATION NEWS.

Scottish Building Trades Federation.

The sixteenth annual meeting of the Scottish Building Trades Federation was held in the Building Trades Exchange, Edinburgh, on September 9, when delegates attended from the principal centres of Scotland, and Mr. Hector MacVinish, Inverness, presided.

The executive report on the past year was submitted by the secretary, Mr. James Cameron, solicitor, Edinburgh. The report stated that another lean year in the building trade throughout Scotland had to be recorded, but there was a glimmer of hope of improvement in the near future, as several of the principal centres reported that trade was on the upward trend. Trade was, however, reported to be dull in Aberdeen, Paisley, Kilmarnock, Dundee, Airdrie, Coatbridge, Inverness, and Hawick. Edinburgh showed signs of improvement, while the brick-building trade in Glasgow was better than it had been for some time past. Plumbing, masonry, and joinery still continued dull. The financial report showed the finances to be in a satisfactory state. In some centres it had been reported that difficulty was experienced in getting apprentices, masons particularly, but it was thought that with an improvement in trade the necessary supply of apprentices would be forthcoming.

The secretary was appointed to attend the next international conference of secretaries to be held in Manchester on October 19, and arrangements were also come to for a monthly exchange on matters of interest between the Scottish Building Trades Federation, and the Building Federations of Germany, Belgium, Holland, and South Africa. The following office-bearers were elected for the ensuing year:—President, Mr. David Wilson, J.P., Edinburgh; vice-president, Mr. James Farquharson, Aberdeen; secretary and treasurer, Mr. Cameron.

Nottingham.

The association's summer excursion took place on August 26th, when a party of about thirty left Nottingham by railway at 8.13 a.m., and arrived at Grimsby Docks about 11 o'clock. On arrival, most of the members made a tour of inspection of the Grimsby Docks, but this was brought to a sudden end by a heavy rain-storm, but by the time luncheon was over at the Royal Hotel, the weather had cleared, and the remainder of the day was beautifully fine. Immingham, which is only about six miles from Grimsby by river, is twelve miles distant by road, and it seems doubtful whether a more tortuous road than the one over which the party were driven to Immingham could be found elsewhere in England.

At Immingham the contractors, Messrs. Price, Wills, and Reeves, of London, had made excellent arrangements for the convenience of the visitors, who were received by Mr. E. and Mr. R. Holliday, sons of the gentleman who has the responsibility of directing the whole undertaking. Seated in a couple of large trucks, fitted with cushioned seats and drawn by one of the contractors' handy locomotives, the party glided from one point to another, the Messrs. Holliday explaining all the different points of interest. After travelling along the coal sidings for some distance, the party returned by a different route to the power station, which will contain very powerful and up-to-date plant. The next move was to the site of the docks proper, where the work of excavating and pile driving was in full swing. Having first viewed the operations from above, the visitors were conducted to the bottom for a detailed inspection of the operations, including the great lock gates, upon which a pneumatic riveter was then at work. By this time the afternoon was well advanced, but before ending the tour, a visit was paid to the stores and workshops. The party then drove back to Immingham, where dinner had been prepared at the Royal Hotel. After dinner the president (Mr. Jas. Wright) in a short informal speech, expressed to the management of the great works which they had just inspected their high appreciation of the kindness which had made the inspection possible, also to the gentlemen who had conducted them over the works. He also conveyed the thanks of the party to Mr. Barton, for making the arrangements for the outing, which had been such a great success.—W. J. Barton, Secretary.

Sunderland and District.

A general meeting of the Sunderland and District Building Trades Association was held in the board-room on August 30, when the president (Mr. J. Morice Wright) was in the chair.

The secretary reported that a communication had been received from the operatives' secretary of the Conciliation Board, asking for a meeting of the board for the purpose of deciding upon a boundary line between Sunderland and the Hartlepools. During the discussion which ensued, it was pointed out that it was useless making a boundary line which the association cannot control, and it was resolved "that it is not desirable in the interests of the association that any attempt should be made to extend the boundaries."

The President gave an interesting report upon the proceedings at the half-yearly meeting of the National Federation at Chester in July last, for which he was thanked.

The secretary reported that at the half-yearly meeting of the National Federation, Mr. Stephen Easten (Newcastle) raised the question of the Sunderland dressed stone rule, and asked the National Federation if they approved of the principle of such a rule. Mr. J. W. White (Sunderland) thereupon suggested that Mr. S. Easten should raise the matter at the Northern Counties Federation. Further discussion was, however, ruled out of order by the President of the National Federation.

A report was received upon the terms of settlement in connection with the St. Gabriel's Church dispute. The job has now been declared open.

The question of holding an association dinner was left over until the next meeting.

Mr. R. J. Huntley gave notice of motion that at the next meeting he would move:—"That consideration be given to the question of fixing a reasonable scale of charges for time and material work." The secretary was requested to ascertain from the local associations whether such a scale was in use among their members, and if so, to obtain a copy.—W. H. Hope, Secretary.

Tyne and Blyth District.

A meeting of the Executive Council of Tyne and Blyth District Building Trades Federation was held in the County Hotel, Newcastle-on-Tyne, on August 18th, Mr. W. T. Weir (president) in the chair.

The president explained that the meeting was called to consider the invitation to tender for work for the Gateshead Asylum, Stannington, the work being foundations and cottages. It had been announced that no tender would be considered which was not accompanied by a schedule of prices, and it is a rule of the Federation not to send in a schedule of prices along with the tender. Mr. W. Foster said that the quantities as to the cottages were complete, and in this case the tender would be sent in in the usual way.

It had been further stated that it was usual in the North for the schedule of prices to be sent in for foundation work, but that in this case the approximate amount of the works had been stated. The usual course is for a schedule of prices to be sent in for the different classes of excavation work.

Mr. S. Easten, who had seen the quantity surveyor, had explained to him that the interest of the architect was one with our own. The officials of local authorities, Mr. Easten said, often got the prices for comparison and their own use.

Mr. W. Foster contended that whether the bills of quantities were actual or approximate, made very little difference, the principle in both cases being the same. There was, he said, competition from the south, and it was possible these competitors would not act with us in the matter.

Mr. S. Easten said that the practice has been to give no schedule of prices for buildings, but that it was otherwise with foundations.

Mr. Foster said he thought the members should send in their tenders, and that a letter should be sent by the secretary.

Mr. S. Easten said that, having regard to the practice hitherto, it was not expedient to protest in the present case, but it was desirable to seek to alter the practice. He suggested that a conference should be held with the surveyors and architects to discuss the matter and arrange a settlement.

A resolution to this effect was passed, and the secretary was requested to notify the local secretaries of the terms of this resolution.

It was further resolved "that the secretary get into communication with the Northern Architectural Association and the Northern Quantities Association with a view to arranging a meeting to discuss the matter, and that the deputation from this Federation consist of Messrs. W. T. Weir, Stephen Easten, J. T. Armstrong, and A. Pringle."—W. H. Hope, Secretary.

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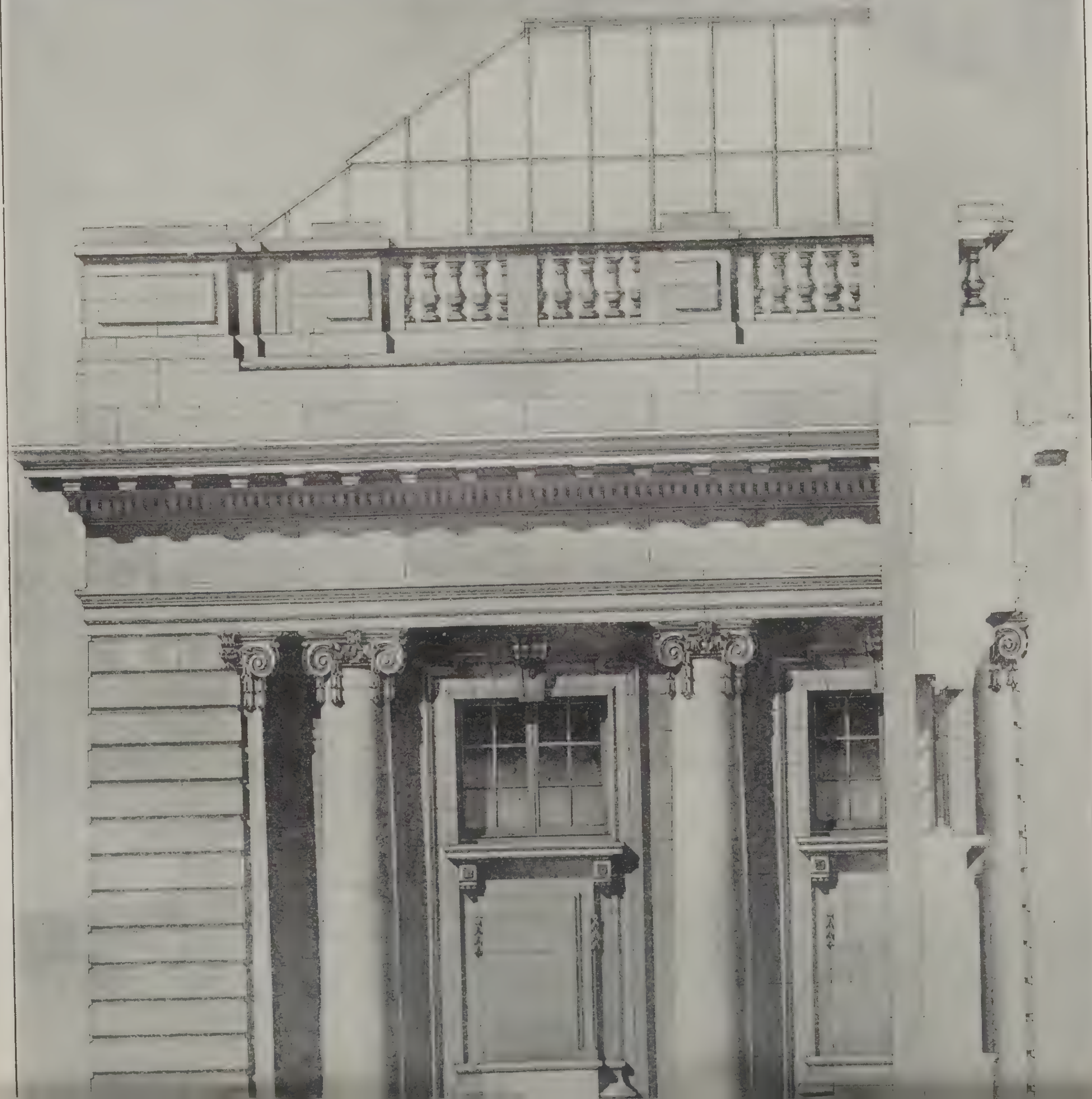

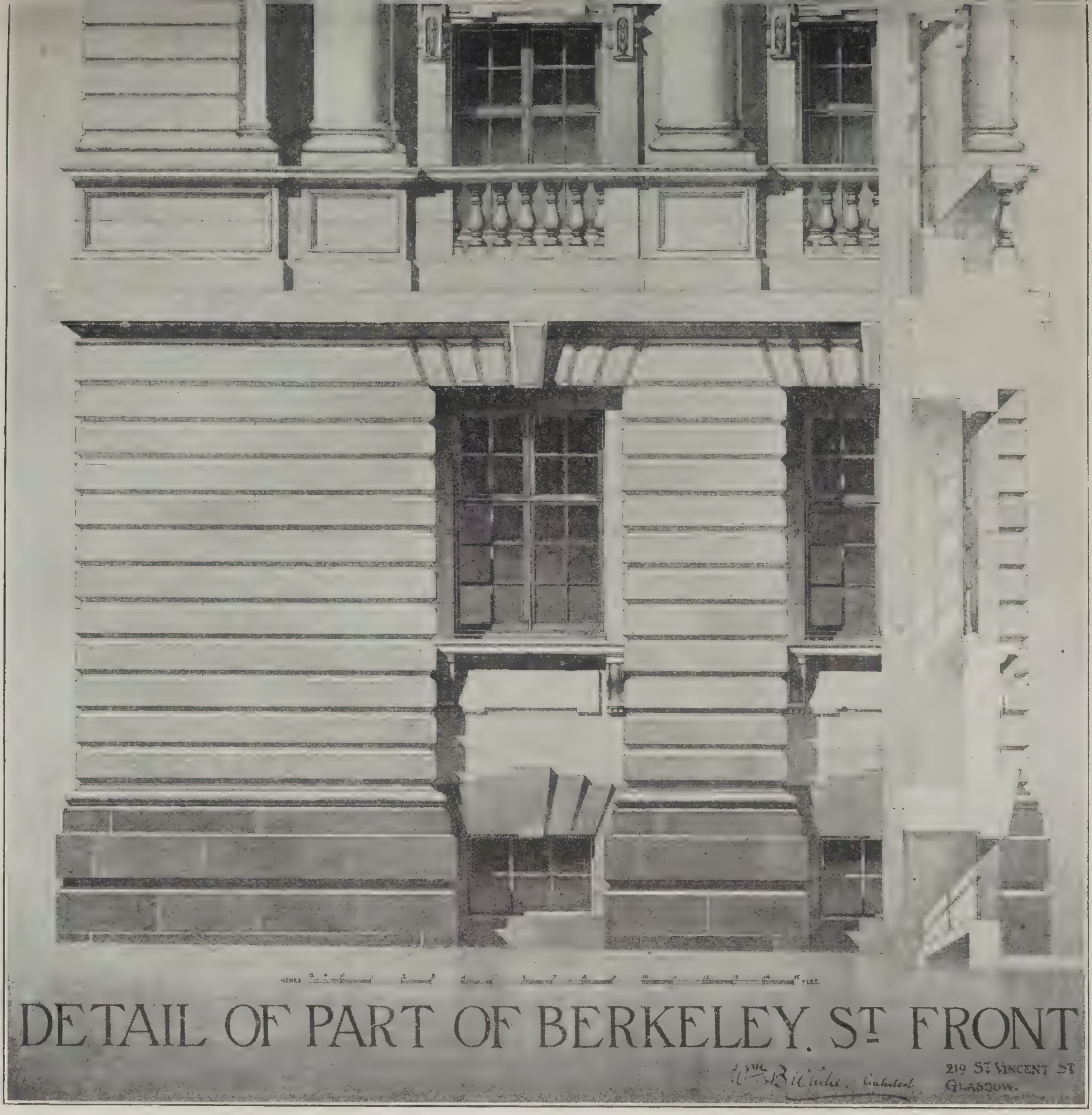

WILLIAM B, WHITIE, F.R.I.B.A., ARCHITECT.

Royal Academy Exhibition, 1910.

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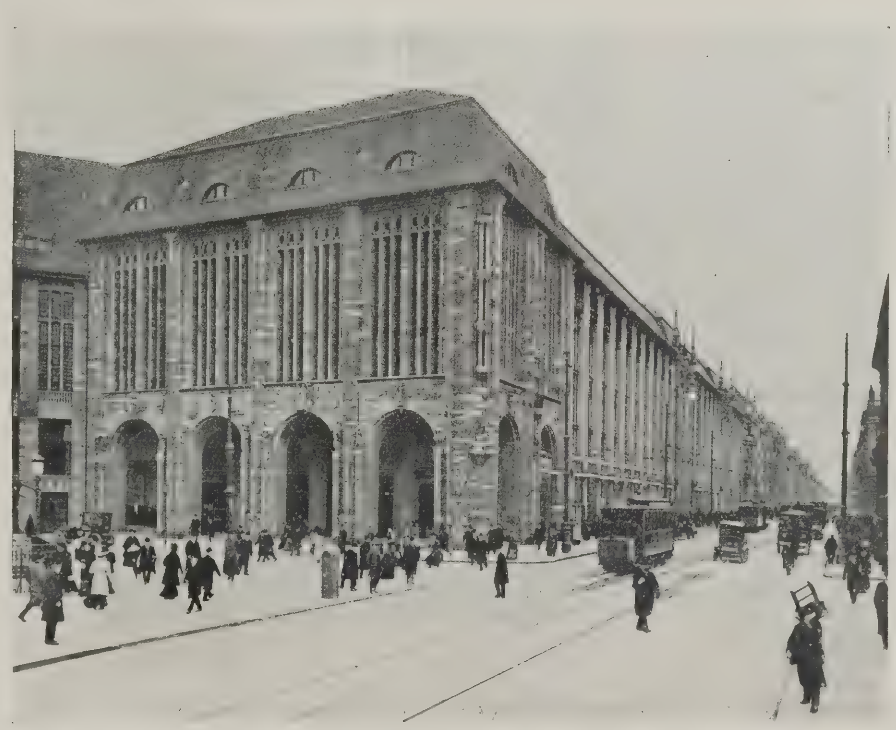
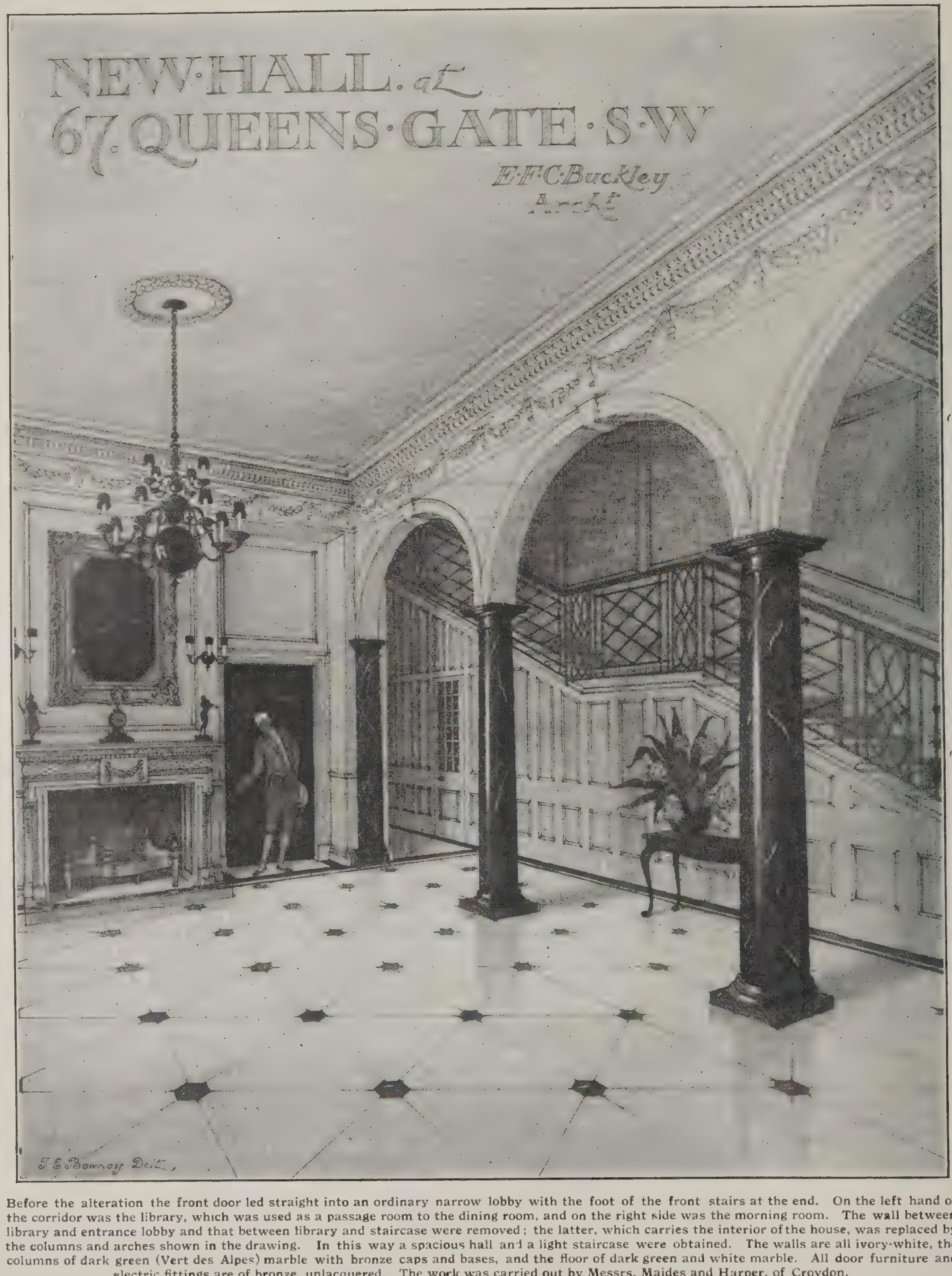


A TYPICAL SPECIMEN OF MODERN GERMAN ARCHITECTURE: THE WERTHEIM SHOP PREMISES, LEIPZIGER PLATZ AND LEIPZIGERSTRASSE, BERLIN.



Before the alteration the front door led straight into an ordinary narrow lobby with the foot of the front stairs at the end. On the left hand of the corridor was the library, which was used as a passage room to the dining room, and on the right side was the morning room. The wall between library and entrance lobby and that between library and staircase were removed; the latter, which carries the interior of the house, was replaced by the columns and arches shown in the drawing. In this way a spacious hall and a light staircase were obtained. The walls are all ivory-white, the columns of dark green (Vert des Alpes) marble with bronze caps and bases, and the floor of dark green and white marble. All door furniture and electric fittings are of bronze, unlacquered. The work was carried out by Messrs. Maides and Harper, of Croydon.

Royal Academy Exhibition, 1910.

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Note: The List of Contents will be found on Page V of the front advertisements in this and subsequent issues.

Copyright in Architecture.

WE seem to be approaching the crisis in regard to the question of establishing a legal right on the part of architects to prevent their buildings being copied or being reproduced by other persons. That is the turning-point of the matter, and that is why we head these remarks "Copyright in Architecture," rather than "Copyright in Architectural Design." The copyright in an architect's design on paper may be considered to be protected on the same footing as that of drawings or paintings generally. But the popular idea in this country appears to be that, when once a building is erected from the architect's design, it becomes public property, and anyone who takes a fancy to it may commission another architect to build him one like it, or a builder to build him an imitation of it; in either case without any reference to the original designer. A good many instances of such action are on record, and were put in as evidence by Mr. Simpson, who (with Mr. Belcher) represented the Institute of Architects before Lord Gorell's Copyright Committee of last year.

That this is a substantial grievance there can be no doubt. The essence of the grievance, on its practical side, is that an architect who has applied thought and talent to devising a building of a certain definite architectural character, and has been duly paid for his services, may see another person paid for what is, practically, making use of his brains, without any compensation to himself. A further possible (or probable) injury to him is that he may see what is called "a colourable imitation" of his own design carried out with the details spoiled, and the whole thing vulgarised. It is possible to make outsiders understand the former grievance; it seems impossible (in England) to get anyone to understand the latter one, or to recognise that it is a grievance at all. This comes out in an amusing manner in the evidence before Lord Gorell's committee, where an architect witness said that an imitation of a building from observation merely, without measurements, "would probably be a caricature," and a member of the Committee immediately answered, "It would be a caricature to you, but not to me." That is typical of the whole attitude of the English public to such a question. They cannot appreciate the small differences of detail which spoil a design; and because they cannot, they think these are of no consequence, and that architects are merely faddists. And although the Committee thanked its two architect witnesses for their evidence, and discussed their views with them, it seems obvious that they were not much in favour of the idea of copyrighting architecture, and that their minds were chiefly occupied with the difficulties and objections in the way of it; some real and some imaginary. It is significant that while eight pages of the Report of the evidence are occupied with architecture, twenty-three are occupied with the rights of makers of gramophones and other mechanical reproductions of music—a subject no doubt much more interesting to the general public.

The architects' evidence goes to show that the copyright question is of most importance in respect of average buildings of comparatively small size—dwelling-houses, schools, etc Large buildings, such as town halls, it is said, are usually specially designed for special sites, at a large cost, and the people concerned with their erection would not wish for a copy of another building. Churches, however, we may suggest, are buildings of some importance which might be reproduced by Committees in want of funds, and we believe this has been done occasionally. It is the fact, however, of reproducing being mostly confined to the smaller and less important buildings that suggests one of the difficulties in connection with the subject, viz., the narrow margin which may separate a building of purely utilitarian character from one which has a recognisable element of architectural design. Section 36 of the draft Bill which is to be brought before Parliament defines the matter thus:—

> "Architectural work of art" means any building or structure having an artistic character or design, in respect of such character or design, but not in respect of the processes or methods of its construction.

The latter distinction is introduced because this is a Bill concerned with copyright in works of art; "processes and methods," if infringements, would come under the law of patents. Now, an ordinary four-storey house-front in brick may be a mere utilitarian erection; but some modifications, which might seem trifling to the outsider, may to the architect transform it into a front of architectural character. Who is to be the judge of this? It is not, it must be understood, to be a question of architectural *merit;* both the witnesses and the Committee agreed in ruling that out, as opening a way for a kind of discussion which the chairman and members of the Committee might well regard with apprehension. What is proposed is, not that a building should claim to have artistic excellence, but that it should have artistic character, good or bad—something more than mere building. As we all know, some of the best street buildings are among the plainest, and what the quality is which makes them of architectural value is not very evident to the outsider. If the Bill became law and there were any compensation to the architect provided for in it (we will come to that directly), the ultimate decision in such a case would rest with a jury, after hearing the evidence of architects; and though the jury would probably be quite incompetent to decide the point, there is as much chance that they would give a right verdict as a wrong one; and that is a chance that one has to take in other subjects of litigation besides architectural copyright. Juries are not supposed to know anything of the merits of a case; they are supposed to weigh the value of conflicting evidence. Another question which naturally arises is, how far plan, as well as design, can be made the subject of copyright protection. It might seem that it was more easy to determine the matter in regard to plan than design, as it is possible to see at once whether one plan is the same as another. But where a plan displays nothing but ordinary convenience in the arrangement of rooms, it would come under the head of utility only, and be outside the scope of the Bill. Where, however, a plan displays some special arrangement for internal effect, it is an element of design, and ought to be protected as such.

And now let us see what the draft Bill, which it is understood is to be brought forward in next session of Parliament, provides for the protection of the architect. We have seen that an "architectural work of art" is recognised, and so far as possible defined in Section 36 of the Bill. In Section 7 we find what is facetiously entitled in the margin, "Remedies in the case of Architecture":—

> 7. (1) Where the copyright in any work is infringed by the construction of a building or other structure, the owner of the copyright shall not be entitled to obtain an injunction or interdict to restrain the construction of such other building or structure or to order its demolition when constructed.
>
> (2) Such of the other provisions of this Act as confer on the owner of the copyright in any work the same remedies against a person having in his possession for sale or dealing with a pirated copy of the work as if it were his property, or as impose summary penalties, shall not apply in any case to which this section applies.

So that this section, entitled, "Remedies in the case of Architecture," is simply a statement depriving the architect of any remedy whatsoever! It seems almost incredible; but that is how it stands. Of course it can be understood that while a pirated painting or statue may be destroyed, there might be a difficulty in applying this to a building, partly because it would involve heavy loss and inconvenience to an owner who might be entirely innocent in the matter. The only argument is, however, that it is a rather more serious matter to pull down a building than to destroy a picture or statue; the principle is the same; the man who has paid for a pirated picture or statue has to lose it. But one naturally expects this to be followed by a provision whereby the architect may demand compensation. Not a word of the sort. As far as the protection of copyright in architecture is concerned the proposed Bill is an absolute farce.

As for any argument that it is impossible to protect architecture in that manner, we have only to turn to the evidence of the French *avocat*, M. Maillard. He says, "In our opinion, when an architect has prepared the plans and designs necessary for the construction of a building he ought to have the right to forbid its reproduction by anyone whomsoever." And in answer to a question, whether there were no difficulties in carrying out this view, he replies, "We see none. . . . In a French law of March 11, 1902, it was definitely enacted that architects were to be protected under the same conditions as designers, painters, and sculptors; *this law has not provoked any criticism, and has not given rise to any litigation.*" (The italics are ours.) In the Appendix to the Report of evidence is the statement of a case in Denmark where an architect brought an action against the owners of a new building for having copied a building of his; the court admitted some extenuating circumstances, but the defendants were made to pay an indemnity of 100 crowns to the plaintiff architect, a fine of 100 crowns, and 100 crowns costs. On another page of the Appendix is a letter from a German correspondent, Herr Osterrieth, stating that by the German Act of January 9, 1907, the infringer of a work of architecture may be fined up to a sum of 1,000 marks, but that he may also be compelled to pay to the original architect a much larger sum than this by way of damages. Quite recently in the Belgian Courts, M. Acker, the architect of the Brussels Exhibition, obtained £80 damages for the copying of a building designed by him in the Avenue Louise.

Have the framers of Mr. Buxton's proposed Bill drawn it up in entire ignorance of the Copyright Committee Bluebook? If not, how is it that they have drawn up a draft ostentatiously omitting architects from all chance of compensation, whilst making a pretence of considering their case? How is it that what is possible, and is received as perfectly just and fair in France, Germany, Belgium, and Denmark, is supposed to be impossible in England? The only explanation seems to be that it is the result of the traditional ignorance of, and indifference to, art, on the part of English public men, and of the English public generally. In other countries it seems quite natural that architecture should be considered an important art, and that an architect should be protected from injury to purse and reputation by the unauthorised reproduction of his work. In England it is evidently regarded as a claim that is absurd and unreasonable. The Institute of Architects, by means of a Special Committee, are, we believe, doing their best to get more reasonable counsels accepted. It is to be hoped they may succeed.

Limited Competitions.

IF the competition system presented no other advantages, it would be almost worth preserving for the infinite variety of the complaints to which it gives rise. These are usually interesting and stimulating, and are so frequent as to be in themselves a valuable corrective to any possible tendency towards mental stagnation in the profession. A comparatively new point has been raised in connection with a competition at Brighton. In last week's issue we announced that the governors of the Brighton, Hove, and Sussex Grammar School invite architects who have erected grammar schools, higher grade or secondary schools, or schools of a similar character, during the last fifteen years, to send in their names, with particulars of their work. A correspondent asks us whether in our opinion this is an admirable method of conducting a competition. As this is one of the questions which (as the Latin Primer puts it) "expect the answer, No," we hasten to supply that answer. The reason for thus limiting a competition is not easy to understand. Certainly trouble is saved, and some guarantee of the experience of the competitors is gained. But the mere saving of trouble in such a case can hardly be regarded as sound economy; and the guarantee of experience is probably of less value than the opportunity here deliberately thrown away, of examining the designs of men who, in the strenuous endeavour to win their spurs, might conceivably excel the best efforts of their more seasoned rivals. Some of our best and most important public buildings have been designed by men who certainly had never before erected similar buildings to the London County Hall and the Liverpool Cathedral. The disparity between these works and such common buildings as grammar schools may be readily admitted; but the greater probability of obtaining the most satisfactory design in the least restricted competition holds good in each case. In confining a competition to those who have actually erected buildings "of a similar character," three considerable factors present themselves:—(1) The experienced men are apt to repeat the conditions of former success, and thus there is some chance that the new building may be rather of the nature of a replica. (2) Not only the novices are excluded, but also men of considerable experience in similar competitions — who may have produced premiated designs without having the good fortune to get their designs carried out. (3) The exclusion of novices seems to be stultificatory. If the example were generally imitated, competitions must eventually die out, the supply of experienced men becoming in time exhausted, because the conditions of competitions prevented recruiting; which is admittedly an absurd deduction, but may nevertheless serve to indicate the essential weakness of a form of competition that seems to take advantage of a system which it does not adequately promote.

Building up a Tradition.

A SYMPOSIUM on architecture that is being conducted in the "New Age" has brought many interesting replies to the series of questions upon which the discussion is based. Mr. Mervyn E. Macartney, F.S.A., F.R.I.B.A., is particularly quotable. He points out that a tradition in architecture cannot be built up in a day, but the last two or three decades have seen the beginning of one—or rather a renascence of the older Palladian tradition. And there are to-day in the practice of architecture a number of men who, given opportunities, would produce work in no way inferior to that done in the seventeenth century. It may not be tedious to enumerate some notable buildings erected within the last twenty years: Mr. John Belcher's "Chartered Accountants"; the late John Sedding's Church in Clerkenwell; Messrs. Lanchester and Rickards' building for "Bovril"; the work of the late John Brydon hidden away up and down in London; Messrs. Adam and Holden's work; Mr. Lutyens' Offices of "Country Life"; the Gaiety Theatre, Scotland Yard, and part of the quadrant in Regent Street by Mr. Norman Shaw; Mr. Beresford Pite's Assurance Offices at Euston; Selfridge's. All this work in various designs expresses nobly, beside definite geometrical ideas, the personality or temperament of their designers, not in any *outré* fashion, but through definite style, and are not inferior to any architecture achieved since the time of Wren. These buildings give a not unfavourable view of the characteristics of the Renascence, the modern style par excellence. Pseudo-mediævalism is to-day a thing of the past, except it exist still in sentimental coteries. But without it it would be impossible to point to London churches so beautiful as those of Sedding, Gilbert Scott, and Bentley—work to which in the same kind there is nothing comparable in Europe or America. He holds that little more can be done by architects themselves, until the public expresses some kind of approbation. Perhaps on the whole the best work in England to-day is Domestic, for the simple reason that the leaven of taste works slowly and has only touched the extremities. And while the mob inhabiting great cities have none, individuals here and there have knowledge in matters of art. It is customary to sneer at American culture—American architecture, at any rate, flourishes in great vigour and beauty and scholarship, and will one day lead the world. But it seems that Americans want value for money, and when they employ an architect — they want to get architecture. In London we accept all kinds of vulgar fripperies from stockbrokers turned architects.

Hurstmonceux Castle.

THAT "sweet and delectable country seat," as Evelyn called it—Hurstmonceux Castle—which, notwithstanding its vicissitudes, is still one of the three chief glories of Sussex—the other two being Battle Abbey and Pevensey Castle, or, at option, Hastings Castle, or one of the many old manor-houses or sturdy ancient churches in which the county is so rich—has, it is announced, passed into the hands of Mr. Claude Lowther, who, it is stated, has in mind the benevolent intention of ultimately presenting it to the nation. It may without question be pronounced worthy of the national regard, for although of the original fabric begun in 1440 by Sir Roger de Fienes, who fought at Agincourt, little but the shell remains—the ruined interior having been cleared away in 1777—there is enough of it standing to afford a very interesting means of studying the methods and materials of the fifteenth-century castle-builders.

The Memorial to King Edward VII.

PROPOSALS for a memorial to the late King continue to fill the air; but they are mostly not very wise ones. Lord Plymouth has championed the idea of repairing the Crystal Palace and securing its grounds in perpetuity as a memorial; but while we should certainly desire to see the Crystal Palace and its surroundings preserved as long as possible, and its usefulness and accessibility increased, one can hardly regard a necessarily perishable palace of glass and iron as a building of very monumental character; nor can we see that the Crystal Palace, as an institution, has any very direct connection with the memory of the late Sovereign. Then Sir Edmund Currie has come forward with a recommendation for the foundation of a tuberculosis hospital as a memorial. This kind of proposal always looks like an excuse for raising subscriptions for a hygienic purpose under pretence of giving it a special significance; whereas if such a hospital is urgently required it ought to be built as a matter of utility, on that ground alone, without raising any adventitious plea for subscriptions. But this idea of a hospital as a memorial is thoroughly English. In every other country a memorial to a sovereign would be a work of art of some kind, erected solely as a memorial; but English public men are possessed with the idea that if one spends money on a memorial it should take the form of something "useful"; art being, in their view, of no use, and only a waste of public money. We can only repeat our previous suggestion, that no more suitable memorial could be found than a new façade to Buckingham Palace. Such a work would be directly connected with the memory of the late King, since this was his abode when in London; and it would be a fitting adjunct to the Victoria Memorial, to which Buckingham Palace (externally) forms at present a most poor and inadequate background.

Unexplained Fires.

AN explanation of the cause of fires in old country houses, usually attributed to "a defective flue," is given by Dr. Charles Mercier, of Wimpole Street, to the "Times." He propounds the theory that old houses are, as a rule, infested with rats and mice, which require to move from floor to floor in search of food, and, particularly, water. They have no route open to them but the stairs and the chimneys. In the winter when fires are going the chimneys are not available, but in the summer free use is made of them. The rodents gain access to them from the space in the floor by means of the joints in the brickwork, in which the mortar has become perished and friable. When fires are resumed in the autumn the hole thus made becomes a receptacle for soot, and an exceptionally hot fires ignites it so that there is a smouldering mass, one end of which is in the chimney, the other in contact with a joist. The mass may smoulder for a considerable time, but sooner or later the joist bursts into flame with disastrous results. It is stated that these fires occur some weeks after the resumption of fires in the autumn. The doctor's theory is ingenious, but not altogether convincing. In the first place, we doubt if rats and mice are confined for choice of route to the stairs and the chimneys; they will easily run up both walls and pipes, and we doubt whether either would frequent sooty places, because of their fur. In the second place, the brickwork in old chimneys is frequently thicker than that provided at the present day, and in such circumstances it would not be easy to find a direct vertical joint through the flue wall by which the soot could get access to the joists. Thirdly, the old builders were fairly punctilious in their construction, and with a proper arrangement of trimmer joists there should be no woodwork in contact with the brickwork of the flues. In the case of old panelled rooms there would certainly be a certain danger from contact. At the same time, it is idle to deny that some fires result from defective flues; but we think the cause is other than that given by Dr. Mercier. For instance, the old chimneys are generally tortuous, and the operations of generations of chimney-sweeps have resulted in knocking away bricks in the flues and rendering the walling dangerously thin, or even making holes in it. Also, in making past alterations, or additions, to old houses, builders have cut into walls to find a bearings for beams or joists, without always ascertaining what existed on the other side of the wall. And a defective flue, too, is often a handy excuse for the delinquencies of two-legged inhabitants. Fires in old country houses, so far as we have observed, usually break out during the night. Carelessness with lamps, candles, and matches, is a frequent cause. One fire, attributed to a defective flue, was really caused by a servant putting red-hot cinders and ashes with other rubbish into a housemaid's box in a cupboard by the side of the kitchen range, which cupboard extended under the kitchen stairs. In other cases we suspect that male servants smoking in bedrooms, and female servants reading in bed, have had quite as much to do with country house fires as the rats and mice upon whom Dr. Mercier fixes the responsibility. But this is not to argue that these rodents are an acquisition to old country houses, or that the doctor's suggestion of acquiring a cat or two should be ignored, even if we doubt their aid "as a valuable auxiliary against such fires."

NOTES AND NEWS.

"Cleopatra's Needle."

It has been again rumoured that Cleopatra's Needle, on the Thames Embankment, is suffering so severely from its thirty-two years' exposure to the vicissitudes of the London climate that its removal is necessary if the monolith is to be prevented from wilting away. The London atmosphere, with its smoke, its acid, and its fog, is once again said to be gradually destroying the sharpness of the hieroglyphics on which the people of Heliopolis gazed more than three thousand years ago, and which had hardly lost their first freshness when the Needle was removed to the Royal city of Cleopatra a generation or so before the beginning of the Christian Era. We understand, however, that the accusation against the London climate is greatly exaggerated —that its acid is not nearly so mordant, its fog and smoke not nearly so black as they are painted, and that the obelisk which withstood the seasons of three thousand years in Egypt has not yielded to thirty years in the atmosphere of London. There is no question of its decay and of its consequent removal to the South Kensington Museum or the British Museum. Like the statue of Boadicea and other monuments on the Embankment, the Needle is under the care of the London County Council, and that authority has decided that it must be cleaned, a process which takes place at certain intervals. At the same time, while the scaffolding is erected for the cleaning, the opportunity will be taken to make a thorough examination of the four faces of the monument in order to discover if it is really suffering from our climate. If it is, there is but little doubt that modern science will be equal to the occasion. If memory serves us, Sir Erasmus Wilson, who brought the monolith to London, and who was an eminent skin specialist, treated the surface with some preservative preparation, which may or may not have proved effectual.

The Tile Pavement of Reading Abbey.

During building operations which are being carried out at Reading Gaol, a part of an ornamental tile pavement has been unearthed at a depth of about 3ft. So far as can be seen from the portions exposed, it appears to have been the floor of a passage leading from the cloisters of Reading Abbey to the infirmary. This latter building stood on the east side of the site of the present gaol. The tiles themselves are of interest, and show *in situ* the effect of decorated tile pavements. These pavements were doubtless attempts of the Normans to imitate in tile the effective and rich mosaics of the Romans. The tiles are chiefly of two patterns, and represent grotesque figures and floral designs, with border tiles. They are of red colour, with a slightly impressed pattern which was filled with a fine white clay. The whole of the surface of the tiles was originally covered with a thick yellow glaze. They date late thirteenth century or early fourteenth century. It is hoped that the Governor will present the tiles to the town museum, where they will make an interesting and important addition to its relics of Reading Abbey.

Decoration at the Palace of Westminster.

Six new historical paintings for the Houses of Parliament are now being fixed in the panels of the east corridor of the House of Commons, i.e., in the corridor leading from the central hall to the waiting hall of the House of Commons. These paintings, which have been presented by six peers, are the outcome of a suggestion by Mr. Harcourt, the First Commissioner of Works, and the scheme has generally been under the supervision of Mr. Edwin A. Abbey, R.A. The pictures are not true frescoes, but, following the method employed for the decoration of the new London Session House and the Royal Exchange, are executed by the process of marophlage, in which the painting is executed on canvas and afterwards affixed to the walls.

The subjects of the six panels are as follows:—

On the Commons side:—

I. Painted by Mr. Byam Shaw, presented by Lord Airedale: The First Visit of Queen Mary, accompanied by Princess Elizabeth, to London, as described in a well-known passage by Froude. The Queen and Princess are seen at the gate of the Lions' Tower of the Tower of London, and the Queen is in the act of raising the Duke of Norfolk from his knees.

II. Painted by Mr. E. Board, presented by Lord Wandsworth: Latimer preaching at Paul's Cross before King Edward VI.

III. Painted by Mr. F. O. Salisbury, R.B.A., presented by Lord Stanmore: The Trial of Katharine of Aragon in the Hall at Blackfriars.

On the Lords side:—

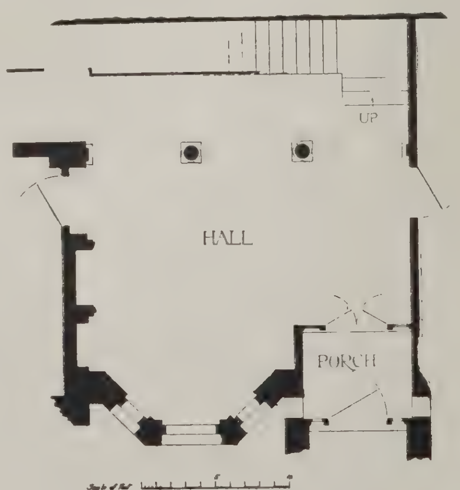
IV. Painted by Mr. H. Payn, presented by Lord Beauchamp: The Plucking of the Red and White Roses in the Temple Garden.

V. Painted by Mr. Denis Eden, R.A.I., presented by Lord Winterstoke of Blagdon: John Cabot receiving from Henry VII. the Charter for the Discovery and Conquest of Unknown Lands.

VI. Painted by Mr. F. Cadogan Cowper, A.R.A., presented by Lord Carlisle: Erasmus and Thomas More visiting the Children of Henry VII. at the Palace of Greenwich.

Professor Blomfield on the Copyright Bill.

Professor Blomfield shows a disposition to tear the Copyright Bill to shreds. As he reads the Bill, the right of veto is conferred not on the architect, but on the man who employed him, so that the architect has neither power nor remedy. Worse still, he might be compelled to seek permission to copy his own work! If this interpretation is accurate, the architect stands to lose more than he gains, and well might Professor Blomfield exclaim, "What with arbitrary limitations of this sort and the piling up on the architect of every conceivable responsibility, the pursuit of architecture will very soon be an impossibility in this country." That is, one may suppose, the pursuit of architecture properly so called—of architecture as an art. Professor Blomfield finds nothing in the Bill to prevent a practical designer from making a set of working drawings of another man's building, and reproducing items elsewhere; nor, he points out, "does the Bill make any attempt to deal with such cases of practical robbery as those in which an architect has made a design for a single building at the ordinary charge of five per cent., and the employer has used again and again the design in these plans without any further payment to the architect or any recognition of his authorship of the design." It will be remembered that, before the Bill was drafted, we laid special stress upon this point, and the failure of the Bill to deal with it would alone be sufficient to condemn the measure as useless, even if it were not as mischievous as Prof. Blomfield apprehends. He is apparently in favour of the principle, but repudiates the Bill.



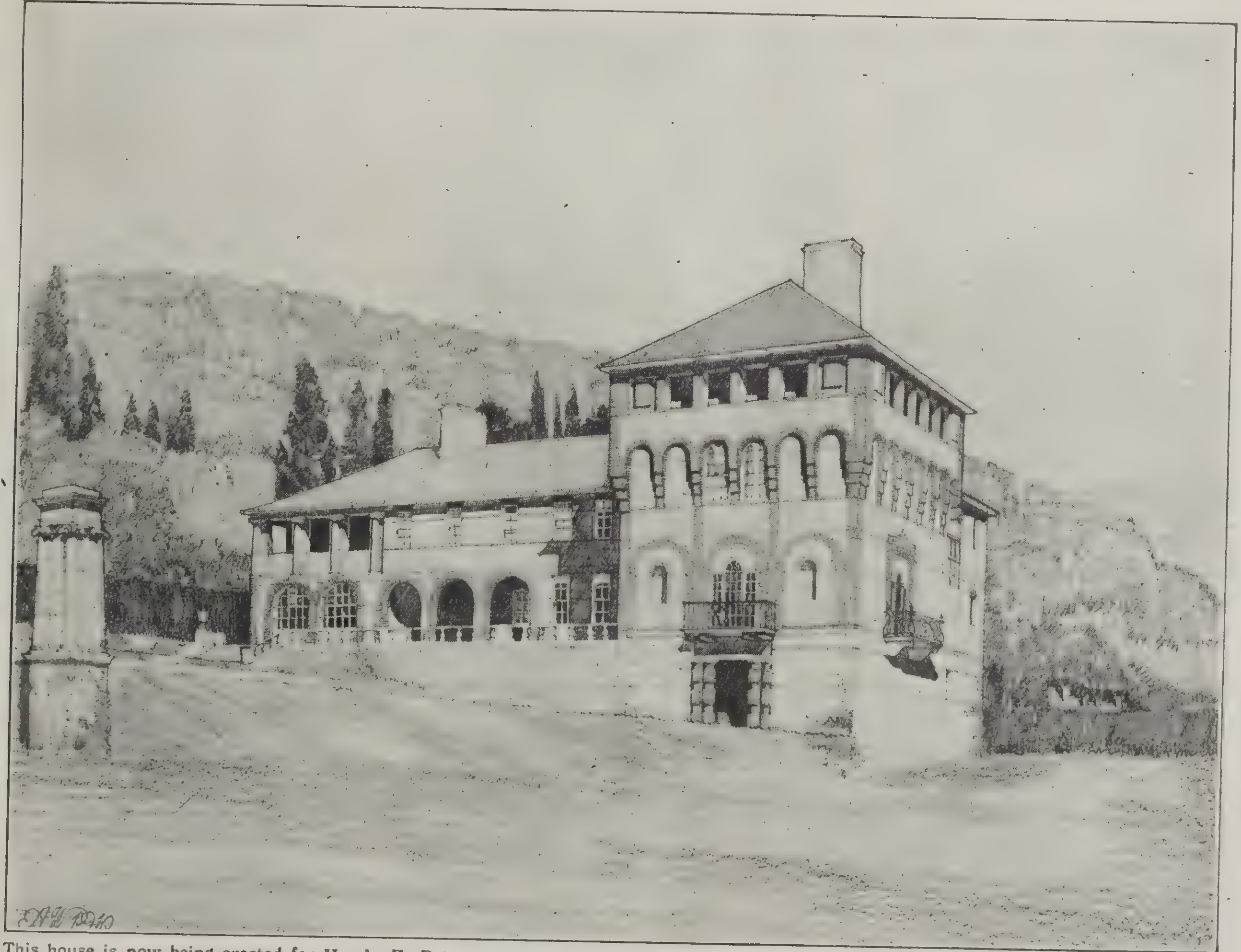
NEW HALL, 67, QUEEN'S GATE, LONDON, S.W.
E. F. C. BUCKLEY, ARCHITECT.

The Imaginative House Agent.

The wily house agent has been haled into the Palace of "Truth" by a perhaps too clever writer in that periodical, who has undertaken the invidious task of translating into plain English the "glowing particulars" written by "literary geniuses" for house agents. He gives three of these translations, this being one: "Disgusting little bijou villa to be let in a half-made suburb. Four bedrooms and three reception-rooms; the three last occupy nearly the space of one decent-sized room. Very artistic, which means that the decorations are carried out in an appalling medley of styles, including spurious Jacobean, Nouveau Art, and imitation Adams. No garden, but a cat-walk could be added if required. Within two minutes walk of Shoddy Park Station, whence there is a fitful service of trains." Very clever, but who was Adams? The writer calls this a "thoroughly honest" description, a phrase that might, in its, turn, deteriorate in translation. The other buildings with which he deals faithfully are a "Loathsome Victorian stucco atrocity in thorough ramshackle order," which has an "exposed garden, beautifully overlooked by palatial workhouse"; and a "beautiful old Cromwellian manor-house [was once]; thoroughly modernised [entirely ruined] by late owner." This is excellent fooling; and the adjective would not be justifiable unless there were some truth in the satire. One cannot altogether blame the house-agent, who, going to the opposite extreme, glorifies with his opulent imagination the houses that somehow or other he must get off his hands, nor the "Truth" humorist who finds him fair game. What is deplorable is the opportunity which inferior buildings afford to both forms of exaggeration.

The Quadriga for the Wellington Arch.

After nearly three years' work Captain Adrian Jones has completed the great bronze quadriga, or four-horsed chariot, which is to be erected on the Constitution Hill Arch at Hyde Park Corner. It is the largest group of statuary in bronze he has ever attempted. The figures have now gone to the foundry to be cast, and something like thirty tons of metal will be required for the purpose. The horses are double life size—that is to say, 32 hands high, or 10ft. 8in. from the withers to the ground. From head to ground that means nearly twenty feet. Leaning forward in the chariot is the driver. If standing, his full height would be nine feet. At the back is the figure of Peace, fourteen feet high. In her right hand she holds high a wreath of laurel, and in her left hand an olive branch. The distance from the tip of her wings to the base is thirty-one feet. First he modelled the two outside horses; secondly, the figure of Peace; next the chariot and one of the middle horses together; then the remaining horse, and lastly the driver. Some idea of the size of the models may be gathered from the sculptor's statement that there have been eight people at a time comfortably inside one of the horses, and more could have been accommodated. The Constitutional Hill Arch, otherwise known as the Wellington Arch, upon which this group will be placed, is the work of Decimus Burton, who originally intended it to bear a four-horse group. It was illustrated with the Quadriga in position, in our issue of September 30, 1908, p. 242. Among other notable contributions which Captain Jones has made to the statuary of the Metropolis are the Carabineers' monument at Chelsea, the equestrian statue of the Duke of Cambridge, opposite the War Office, and the Royal Marines' monument near the Admiralty.



This house is now being erected for Mr. A. F. Petersen, K.C., at Ewhurst in Surrey, at about 600 feet above sea level. It is designed on the lines of an Italian villa, but is constructed of local sandstone and generally of local material, and in accordance with English ideas. Quarry tiles are used for the bond courses, angles, arches, etc., and the dressed stone is confined to the loggia, porch, and grotto entrance. A small Italian terraced garden is shown, designed in harmony with the house. It is held up by retaining walls adapted to the sharp and difficult levels of the hill. Messrs. Goddard and Son, of Farnham and Dorking, are the builders, and Mr. Webber is acting as clerk of works. (*For plan see next page.*)

HURTWOOD EDGE, EWHURST, SURREY. ARTHUR T. BOLTON, F.R.I.B.A., ARCHITECT.

Royal Academy Exhibition, 1910.

FURTHER DISCOVERIES AT KNOSSOS.

Dr. Arthur J. Evans has contributed to "The Times" a lengthy account of further discoveries he has made at Knossos this season. Continuing the excavations already made in the hillside to solve the mystery of the deep vault beneath the Southern Porch of the Palace, the circumference of the vault was proved to be 95 feet, and a special staircase was discovered descending to within three feet of the floor level. From this it has been deduced that the vault was a large reservoir, the steps descending to the average water level, and from the consistent character of the filling in material, containing only pottery fragments of the first Middle Minoan period, it is considered that it formed part of an earlier palace, and was filled in to give secure foundation for this Southern Porch of a late building. No one can wonder at this conclusion, says Dr. Evans. No one, indeed, can wonder at this conclusion who has seen the products of this early civilisation revealed by recent excavations such as those of Mr. Seager at Mochlos.

Mr. Christian Doll's services have again been utilised to supervise various structural works required to ensure the stability of the excavated remains. In the course of these works some angular gypsum slabs which had been laid aside, revealed themselves as parts of steps in the grand staircase, and it has been possible to rebuild five steps of the fourth flight of the grand staircase. The great landing blocks of the fifth flight have also been set in place.

The fresco and plaster remains have been studied on the spot by Mr. Noel Heaton, and the extraordinary part played by painted decoration, both inside and outside the buildings, is now better realised. The lime plaster coating proves to have been faced by a true fresco process in brilliant colours. Close study of the costumes shown on the frescoes proves distinct divergencies from the Minoan costumes, and Dr. Evans deduces from this that the Mycæneans of the mainland represented an allied but independent element, distinguished by certain natural traits of their own from the people of contemporary Crete. The theory that the late Minoan civilisation of Crete was an importation of 'Mycænean,' or even Archæan conquerors, thus loses whatever basis it ever had."

The Little Palace is now shown to have had a considerable annexe to the west connected with the main building by a kind of bridge over a narrow intervening court. On the headland of Isopata, near the remarkably built tomb discovered last season, six other chamber tombs have been discovered, "some of which, for their size and the interest attaching to their contents and arrangement, surpass any hitherto known of this class. The chambers, two of which were about 20ft. square, were excavated in the soft rock and approached in each case by a deep passage way or *dromos*. The whole series was of earlier date than the previously excavated cemetery of Zafer Papoura—the interments in this case all belonging to the most flourishing period of the Later Palace—probably to the second half of the 15th century B.C. A beautiful array of painted vases in the best "Palace style" was thus one of their leading characteristics. The dignity of the departed was in several cases evident, and this notwithstanding the fact that most of the objects in precious metals had been removed in ancient times by tomb-robbers. The two largest tombs seen only to have contained single interments. The rank of the occupant of another chamber was clearly marked by a magnificent ceremonial mace-head of variegated stone. A bronze spear-head also found with him was over a foot and a half in length, exceeding by about a quarter the largest Minoan spear-head hitherto known—that from the 'Chieftain's Grave' at Zafer Papoura."

The most interesting discovery was that of a chamber about six metres square, which was named "The Tomb of the Double Axes." In this chamber the arrangement and relics found suggest that it was a chapel for sepulchral cult, where the protection of the Great Mother or the prehistoric Cretan cult was sought in the shades for the departed warrior. The stone benches ranged round the sides—that to the right lower, as if for children—may well have been devised for some memorial function in which the whole family partook. The interesting question arises—Was this memorial service held but once before the blocking up of the doorway of the tomb, and the filling in of the entrance passage?—or may it have been renewed at intervals of time? A circumstance observed, moreover, at the time when the tomb was opened, may be taken to supply a real indication of this. The filling in of the doorway with a thick walling of stone blocks is not in itself a difficult task. But the breaking open of such a walling is a far more tedious operation, involving the use of tools and implements. It is probable, indeed, that in such a case only so much of the upper part of the blocking would be removed as would allow an easy passage—the mere tomb-robber, indeed, contented himself with a small hole at the top. It is, therefore, certainly a suggestive circumstance that about a mètre down from the original lintel of the doorway, there was found, in the blocking itself, a bronze double axe, not of the thin ritual type found within the tomb, but of the solid make used by the Minoan workmen. A considerable probability therefore arises that the axe, a handy instrument for the purpose, had been used in removing the upper part of the wall on the occasion of some reopening of the sepulchral chamber, and had been overlooked when the upper part of the blocking was replaced. This Bronze Age implement, at any rate, has nothing to do with the iron-using tomb-robbers of the "Geometrical" Period. The "Tomb of the Double Axes" has produced more definite evidence regarding the sepulchral cult and religious ideas as to the after-world than any grave yet opened in Crete or prehistoric Greece. Some further touches are supplied by other tombs of the group, such as the clay chafing-pans that seem to have served as censers for the ritual fumigation of the chamber, and even lumps of actual incense which when burnt retains its characteristic odour after the lapse of thirty-five centuries.

FOREIGN NOTES.

Tenders have been opened in New York for a proposed system of subterranean public ways upon which about three and a quarter millions sterling will be spent.

* * *

The jury in the competition for the reconstruction of the Palais de Justice at Epinal have adopted the scheme of M. Mougenot, the chief city architect, who is to be entrusted with the execution of the work.

* * *

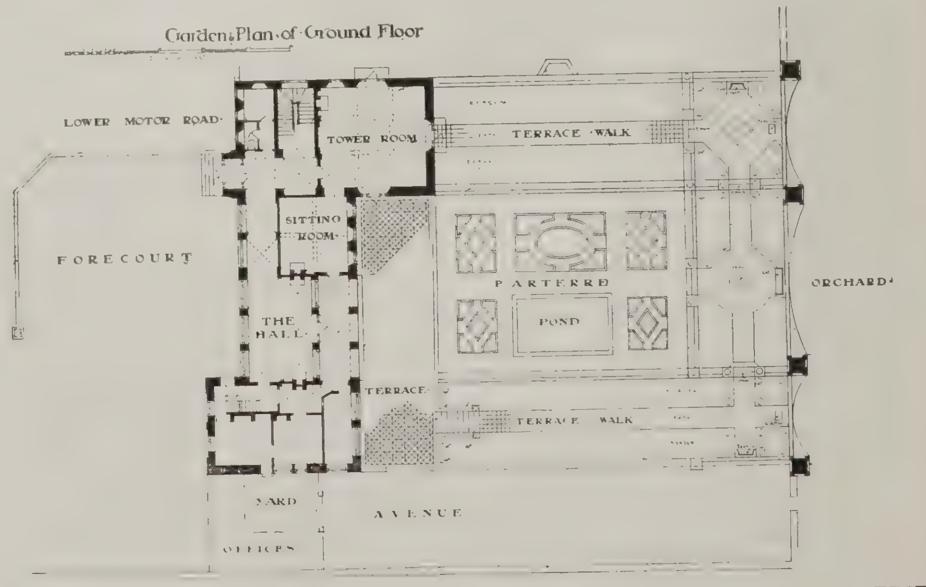
The death is announced of M. Paul Delefortrie, who was a past-president of the Société Regionale des Architectes de la Region du Nord. M. Delefortrie, who was in his sixty-eighth year, had built many châteaux and churches in the North of France. He was the son of an Amiens architect.

* * *

The elections of the offices vacated last July in the Société Centrale des Architectes have resulted as follows: President, M. Girault; vice-presidents, MM. Yvon and Etienne; principal secretary, M. G. Rozet; assistant secretary, M. Destors; editorial secretary, M. F. Bertrand; archiviste, M. Ch. Dupuy.

* * *

At the first sitting of the Literary and Artistic Congress held at Luxembourg, M. de Clermont presented a report on the legislative enactments in force in various centres for the preservation of open spaces, and of monuments. The following recommendations were adopted by the Congress: (1) To promote generally the principle of protecting open spaces and monuments; (2) to give effect to M. Roosevelt's idea of convoking at La Haye an international conference with the object of unifying legislation in this matter; (3) to invite all the national societies to form an international association; (4) to recommend legislative measures for ensuring that the extension of towns shall be in accordance with artistic and æsthetic propriety.



HURTWOOD EDGE, EWHURST SURREY. ARTHUR T. BOLTON, F.R.I.B.A., ARCHITECT.

NEWS IN BRIEF.

Acton was formerly noted for its spring water, and it now appears to be reclaiming its ancient reputation. Recently the Council made some experiments with boring for an artesian well, and the result has been that a large quantity of water has been discovered. The well is bored near the baths, and the quantity of water secured is so abundant that there is not only an adequate supply for the baths, but also sufficient to use for street watering in the neighbourhood. The water has just been analysed, and the analyst reports that it is free from sediment. There is an entire absence of any vegetable organisms, and he is of opinion that this is a good and safe drinking water, admirably suited for the purposes of public baths. It is, he adds, a moderately soft water, softer than any usually supplied to London.

* * *

A project for the convenience of motorists using the Brighton road was foreshadowed at a meeting of the Croydon Borough Council last week. That authority has made application to the new Road Board for advances towards the cost of widening certain bridges and constructing a main road from Thornton Heath pond to Purley, passing through districts in which there are few dwellings and avoiding the congested centre of Croydon by making a wide sweep. The Motor Union has submitted to the council a scheme for a more direct relief route.

* * *

More than £6,000 has been received towards the scheme for providing a fitting memorial at Windsor to King Edward VII. Subscriptions are still coming in to the Mayor of Windsor on behalf of Prince Christian, who is taking a deep personal interest in the proposal, and it is hoped that the total will exceed £10,000.

* * *

Already members of the Clearing Department have taken possession of a part of the new General Post Office, which has been erected on the site of Christ's Hospital, Newgate Street, E.C., but some time must elapse before the whole of the staff of 4,500 can migrate to the buildings from St. Martins-le-Grand. So great is the increase of postal business that it is probable when the shop leases in Newgate Street fall in the sites will be used for a further development of the new Post Office. In that case London will see a Post Office ranging from St. Sepulchre's Church to King Edward Street, and connected thence to the huge buildings of St. Martin's-le-Grand. The architect of the new buildings, Sir Henry Tanner, by the use of reinforced concrete, has provided an astonishing amount of floor space on the 4½ acres. Retaining walls of 8in. thick and floors of 3½in., a chimney shaft of incredible slenderness, have provided economies of space, so that the great sorting rooms are well ventilated and up to date in all requirements. The main public building is in King Edward Street, and, as in the postal department abutting on Newgate Street, a concession has been granted to public taste by having handsome pillared frontages of Portland stone, while the interior fittings are of handsome marbles and woods.

* * *

An official inspection of the new Glasgow Post Office Telephone Exchange took place last week. An exchange was started by the Glasgow Corporation some years ago, but in September, 1906, that service was acquired by the Government. The system then in vogue has since gone out of date, and the Post Office authorities have opened the new exchange, which is installed on the uppermost floor of the Waterloo Street Post Office, and has been fitted to accommodate twelve thousand subscribers' lines in the central district of Glasgow. With the possible exception of the London Central, it is the largest exchange in the Kingdom, and its scope of twelve thousand lines is the maximum limit to which the Post Office works in a single circuit. At present there are over seven thousand wires in operation, and there are ninety telephonists working on the switchboards in addition to a staff of ten supervisors. In all respects the exchange has been organised with a view to establishing a rapid and, as far as possible, automatic service. Every article in the contract. which has been carried out by the Peel Conner Company, is of British manufacture, with the minor exception of three or four slight wooden ladders in the distributing room which came from America. At the luncheon held on the occasion of the inspection, Mr. H. Hirst, chairman of the Peel Conner Telephone Works, said that about 50 per cent. of the total value of telephone contracts was distributed in wages, and in connection with that exchange the sum distributed to workmen exceeded thirty thousand pounds.

* * *

The future of Whitgift Hospital has been again warmly debated by the Croydon Borough Council. The Streets Improvement Committee recommended that application should be made to the Local Government Board for a provisional order containing powers to acquire some 30 properties, whereby the new frontage line would be continued to within about 70ft. of these Elizabethan almshouses. It was urged for the Committee that this was only the non-controversial portion of the old scheme, and that it did not endanger the hospital, as it reached a point where an alternative scheme of widening, by which interference with it would be avoided, could be begun at a future time. Eventually the recommendation was carried by 38 votes to 13.

* * *

At a meeting of the Lancashire County Education Committee, Mr. J. J. Cockshott stated that the Board of Education's schedules disclosed no overcrowding in the county schools, although in eighty-four out of a thousand departments there was an excess in the average attendance allowed by the Board, affecting 1,480 children. Sixty of these departments, however, could be met without providing additional school accommodation by the exclusion of children under five, and the transference of children from one school to another in the same district. In twenty-five cases it would be necessary to provide additional accommodation, and the Committee would at some future time have to replace 26,292 places cut down in the revised list at a cost of £400,000. With regard to the condemned school premises the Committee and managers had these cases well in hand, and there was every prospect of the difficulties being overcome in a satisfactory manner if the Board of Education allowed them sufficient time.

* * *

The proposal by American engineers to move the Liverpool Town Hall bodily so that certain much needed street improvements may be effected in connection with the contiguous streets is meeting with considerable approval and disapproval — approval on the part of those who desire to preserve the Town Hall, which would otherwise probably be demolished; and disapproval by others mainly on sentimental grounds. The scheme, which is based on reports by three firms of American engineers, was introduced for consideration by Mr. A. Lyl Rathbone, a City Councillor. It would involve insertion of a steel platform or cradle beneath the foundations, the removal of the building to the partially new site by screw action, the lifting by jacks, and the insertion of new foundations. The actual removal would occupy two days. Most of the steel platform would be recovered. Business within the building could proceed without interruption. As the structure was so solidly built, the engineers apprehended not the least risk, and Mr. Rathbone believes £30,000 to be an outside estimate of the cost of the work.

* * *

The National Association of Master House Painters and Decorators of England and Wales will hold their annual conference from Monday, October 3, until Friday, October 7. On Tuesday the Lord Mayor of Newcastle, Sir W. H. Stephenson, will extend a civic welcome to the visitors at the headquarters, the Exhibition Hall, and Earl Percy will open an exhibition, consisting of decorative art and manufactures arranged in the hall in connection with the convention. In the afternoon and evening of the same day meetings of a business nature will be held. The annual convention dinner will be given at the County Hotel, where Mr. John Brown, the president, will preside, on Wednesday night, and on Thursday there will be an excursion to Alnwick Castle, followed possibly by further excursions on Friday.

* * *

Jesmond Towers, Newcastle, one of the most commodious and magnificent houses in the district, with 11½ acres of grounds, was submitted for sale on September 20, but withdrawn after one bid of £20,000. It has been proposed that the Corporation should acquire the property for the purpose of a picture gallery, mansion house, and public pleasure gardens.

* * *

At a meeting of the Rotherham and District Trades and Labour Council on September 20, a speaker said that there was something wrong with the Labour Exchanges of the country, and the terrible big fight which had taken place at Sheffield had led him to think that. He was under the impression that Labour Exchanges were going to be a benefit to the working men of this country; still nearly three-parts of the Congress said they were nothing but a hindrance. In his view, that vote put such a ban upon Labour Exchanges that it would be wise for trades unionists to leave them alone. He would add that if they knew what the brassworkers knew, it would open the eyes of trades unionists to such an extent that they would have nothing to do with Labour Exchanges. Until they had a better and proper definition of what the Exchanges were for, they ought to leave them alone. Several speakers in a subsequent discussion on housing denounced the prevalence of "jerry building," and one speaker thought that there were houses in Rotherham that were a disgrace to any civilised community. It would be necessary for Rotherham under the new Act, to go in for a brand new set of by-laws, because the present by-laws were not worth much. Some of the builders were as keen as any lawyers in understanding the law. Another member said he knew of one builder who threatened to sack the first joiner who used a bit of new timber in building operations which were going on.

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Mr. Herbert Measures, iron and steel contractor and engineer, has removed his offices from 4, Exchange Parade, Southwark Street, S.E., to No. 110, Cannon Street, E.C.

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A rumour gained currency in several daily papers last week that the owner of the Adelphi Estate proposed to erect a block of flats on the vacant ground between the Adelphi Terrace and the Victoria Embankment Gardens. Because of the view from Adelphi Terrace, it was only proposed to make the block two storeys in height; but this, rising some 12 feet above the Terrace level, would obstruct the view from the ground floor windows of the Terrace, and the smoke from the flat chimneys would cause considerable annoyance to the inhabitants. Another paper has forecasted the demolition of the Terrace for an extension of the Hotel Cecil. "The Daily Graphic" has since contradicted the rumours, but without saying its authority. It is noteworthy that the original statement was very circumstantial, giving the name of the architects to the estate. A number of flats have been built on the Adelphi Estate in recent years, a whole floor of flats having been added on the tops of Nos. 1, 2, and 3, Robert Street, which houses have been made intercommunicating, and renamed Adelphi Terrace House. An additional floor has recently been added to one of the houses in the Terrace; and the building partly occupied by the Little Theatre and the Camera Club has had two floors of flats added to it. These facts may have given rise to the rumour, or may have given point to it. Particular care seems to have been exercised by the architects, in the Little Theatre building, now just completed, to preserve the amenities and general feeling of the Adelphi quarter.

* * *

At a dinner given by the Bridge House Estates Committee of the Corporation to celebrate the completion of the Blackfriars Bridge widening, Mr. Whitaker Thompson, Chairman of the L.C.C., said that although the City might once have been circumscribed within its walls, it now recognised that there was an extra-mural population with whom they must count, and with whose destinies and benefits the City was associated. He trusted there would be a mutual confidence between the Corporation and the County Council which would enable them to work together for the good of the general community. It may therefore be taken that the somewhat strained relations existing between the Corporation and the County Council over the question of St. Paul's Bridge are in the way of being settled. Mr. C. G. Algar, in recognition of five years' service as chairman of the Bridge House Estates Committee, was presented with an inkstand made of walnut, mounted with silver gilt decorative work, with shields enamelled with the City Arms, the cover being a gold model of the new and widened Blackfriars Bridge.

* * *

An interesting relic of the social life of old Glasgow—the punch-bowl of the Saracen's Head Inn—has been presented to the Glasgow Corporation by Mr. W. C. Carrick, of Eskbank. The Saracen's Head was in the latter part of the eighteenth century the chief hostelry in Glasgow. It was situated in the Gallowgate, and was built in 1755 by Robert Tennent on the site of an old kirkyard near the east or Gallowgate port of the city. Dr. Johnson, with Boswell, put up there on their return from their tour in the Hebrides. The inn was demolished in 1906. The bowl, which has a capacity of four gallons, is of delft ware, and is decorated in blue with a floral ornament inside, and it has a curious adaptation of the city arms on the bottom. On the outside is a landscape with figures.

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It has been definitely decided that the East End Jewish memorial to the late King shall take the form of a fountain to be erected on a site to be selected in consultation with the Stepney Borough Council.

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The pedestal for the memorial statue of the late Sir Henry Irving has been built on the site selected at the north side of the National Portrait Gallery, facing up Charing Cross Road. The statue, the work of Mr. Thomas Brock, R.A., is now being cast in bronze.

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Mr. Andrew Carnegie has made a conditional offer of a further gift of £3,000 for the erection of branch libraries at Hackney.

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With reference to the article by Mr. R. G. Kirkby, late City Architect, Bradford on the design and construction of open-air schools, it should be mentioned that the building at Thackley, near Bradford, was erected by the Frazzi Fireproof Construction, Ltd., on the Frazzi system. The whole contract was undertaken by the company, with the exception of the foundations, which were executed by a local contractor. The walls of the building are constructed with 3in. hollow Frazzi slabs, rough-cast externally, and pointed and left bare internally. Reinforcement of the walls is provided, where it has been considered necessary in the form of light steel stanchions, and the main roofs in the east and west wings are provided with rolled steel joist purlins, carried on the top of these stanchions, all the other roof-framing being done in wood. It is recognised in Mr. Kirkby's paper that this form of construction is permanent, and the Local Government Board has intimated that the system of building, although the walls do not comply with the ordinary by-laws, should be considered permanent, and has also intimated its willingness to grant loans on buildings, for public authorities, erected on this system.

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The Hammersmith Guardians wish to provide additional accommodation at their workhouse, and the Workhouse Committee reported to the Local Government Board that accommodation could be provided for about 84 cases by taking three large rooms now used for storing the inmates' furniture, and extending one other room over the corn mills and labour master's office. The cost was estimated at £271, and the annual saving to the guardians at £866. The Board decided to employ inmate labour in the work. The plans were made by the carpenter on the workhouse staff. The Board in reply stated that they could not regard as a satisfactory arrangement the permanent appropriation of the workhouse basement for wood-chopping purposes, and would not be prepared to sanction any curtailment of the existing workshop accommodation unless other workshops are provided. They considered that the guardians should obtain professional advice before undertaking structural alterations, and should arrange for the carrying out of such work under contract and not by inmate labour. They suggested that the guardians would find it more economical to erect an inexpensive block for the accommodation of 150 to 200 male inmates on the vacant ground on the east end of the existing male blocks. The Board have decided to refer the further consideration of the question to a special committee of the whole Board.

* * *

A memorial is now in course of erection to "Ceiriog" (John Ceiriog Hughes, 1832-1887), the poet who, perhaps more than any other, appeals to the patriotic instincts of Welshmen, and has influenced the national spirit in Wales. The memorial takes the form of a "Ceiriog Memorial" Village Institute, with library and reading room, at Glynceiriog, near Chirk, a quarry village in the heart of the Denbighshire Valley, in which the poet was born, and from which he took his name. Mr. W. Goscombe John, R.A., with characteristic patriotism, is contributing to the institution a panel containing a portrait in relief of the poet, and numerous gifts of works of art and of books for the library have been promised by various donors. The memorial will cost, when complete, about £1,000.

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The tender submitted by Messrs. Brown and Backhouse, of Liverpool, amounting to £5,019, has been accepted for the Waterloo Baptist Church and Schools, Liverpool. The architects are Messrs. George Baines and Son, 5, Clement's Inn, Strand, London, W.C.

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The Dean and Chapter of Wells Cathedral are anxious to raise, without delay, £3,000 for the repair of the central tower and for the extinction of debts incurred in the general repair of the fabric. During the last few years their expenses upon the building have been unusually heavy. Between 1898 and the present time they have laid out over £5,000 upon necessary repairs of the exterior. Of this nearly £500 was spent on the underpinning and repairing of the Chapter House. According to a careful report by the surveyor, Sir Charles Nicholson, a finial of one of the niche-pinnacles on the north-west corner of the tower fell last December. The stone, which weighed over half a hundredweight, crashed through the leadwork and boarding of the roof. It was therefore necessary to erect a scaffold and examine the condition of the masonry. The lowest portion of this central tower, which originally formed a lantern, belongs to the twelfth century. Early in the fourteenth century its height was raised by the addition of a top stage—a tall storey originally lighted by 24 long lancet windows, which were afterwards filled up with stone panelling. To relieve the flatness of the effect, two statues with canopies were added in front of each of the old angle pinnacles. It is chiefly in connection with this last operation that danger has now arisen. The late fourteenth century builders chose their stone from an inferior bed, laid many of the slabs on edge, and scarcely bonded them at all into the main body of the tower, "scribing" them against the older mouldings and making free use of iron cramps. The statues are seriously damaged; the head of one is split into three pieces. Casts have now been taken of the heads, and the broken portions are being dowelled and cemented together. As to the masonry, the most defective stones are being renewed, iron cramps removed, and bonders inserted where possible; and in general every effort is being made to secure everything safely.

The Palladium Theatre of Varieties, London, will be lighted throughout by Siemens fittings and "Tantalum" lamps, and the circuits protected by Siemens "Zed" fuses. "Stannos" wires have been specified for wiring, which, as stated before, has been sublet to Messrs. Rashleigh Phipps and Co., whilst it is intended that the theatre shall be equipped with the most up-to-date and efficient system of illumination and lighting effects.

* * *

The Board of Trade "Labour Gazette" states that employment in the brick-trade continued fair during August, and was better than a year ago. As compared with a year ago, there was an increase of 1.2 per cent. in the number employed, and of 5.2 per cent. in the amount of wages paid.

* * *

The Liverpool autumn exhibition of pictures was opened on Saturday week by the Lord Mayor of London (Sir John S. Knill), who was accompanied by Lady Knill and Miss Knill. Mr. John Lea, chairman of the Arts Sub-Committee of the Liverpool Corporation, presided, and the Lord Mayor of Liverpool (Alderman W. H. Williams) and the Lady Mayoress took part in the ceremony.

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As a memorial to eleven persons who suffered martyrdom at Coventry during the reigns of Henry VIII. and Queen Mary, a large Runic cross has been unveiled by the Mayor (Alderman W. Lee). The cross stands upon three stone tiers, and is 20ft. in height. At the foot are inscribed the names of the martyrs, who are also recorded as having suffered death for conscience' sake.

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In the notes on St. Barnabas Church, Shacklewell (Professor Reilly, architect), last week, it should have been mentioned, with reference to the Seyssel asphalte, that this work was carried out by Messrs. William Salter, Edwards and Co., Hormead Road, W.

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The death is announced of the Rev. Robert Medley Fulford, Vicar of Buckerell near Honiton. Mr. Fulford, who was 65 years of age, was trained as an architect and was for some time in the office of Mr. William White, F.S.A., London, afterwards practising in Exeter. He designed some churches and other buildings in that city and in the neighbourhood. Later he went to Australia, and entered the church in 1891, holding curacies at Ballarat, and, on his return to England, at Woodbury. Subsequently he held livings at Grenada, West Indies, Hennoch, near Bovey Tracey, and Buckerell, to which he was appointed early this year.

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Mr. David Davies, M.P., presided at a Conference held at Shrewsbury in support of the Welsh national memorial to King Edward, among those present being Lord Glanusk and Lord Kenyon. It is proposed to erect a sanatorium. and take other means to fight consumption in the Principality. The scheme is estimated to cost £300,000, and Mr. Davies has already received promises of nearly £150,000.

* * *

The Wandsworth Borough Council has had before it the scheme for enlarging Wimbledon Common, but by 30 votes to 26 refused to support the scheme or contribute to it. Alderman Hunt, L.C.C., moved that the matter should be again referred to the committee in the interests of the whole borough, but this motion was rejected.

Mr. Walter G. Ross, A.R.I.B.A., has removed from 1, West Street, Finsbury Circus, E.C., to 4, Broad Street Buildings, Liverpool Street, E.C. The telephone number (Central 5775) remains the same.

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The Birkenhead Town Council has appointed a committee to consider the future development of the town as to the laying out of new areas, the improvement of areas already built upon, the provision of a town plan, and to report to the Council; and that such committee shall consist of the members of the Road and Improvement Committee, together with Aldermen Mason and Oldham, and Messrs. Bridges, Dodds, Russell, and Tibbits. After some discussion it was decided, on the suggestion of Alderman B. Jones, that the second part of the resolution be altered, so that the new committee should consist of the Road Improvement Committee, with authority to call in other members of the Council and to obtain all necessary information. With this amendment, the motion was unanimously agreed to.

* * *

Lord Pentland, in opening the Smoke Abatement Exhibition promoted by the Glasgow Exhibition, said that the whole history of the development of Glasgow was the conquest of obstacles. He was not sure that that delightful dav was quite the best means of impressing upon people the need for the appliances exhibited, but all who knew Glasgow at other times of the year knew well that nothing could lift a greater load from the industry of the city than to purify its atmosphere, and to relieve it from the gloom which often overtook it on winter afternoons.

* * *

The Local Government Board has decided to hold, or has already held, inquiries into the following items of proposed expenditure by public bodies:—*Water supply.*—Westbury and Wherwellsdown Rural District Council, £3,250 for Steeple Ashton (September 23). *Sewerage and sewage disposal, etc.*—Sheffield City Council, no amount stated (September 23); Plympton St. Mary Rural District Council, £2,600 for Plymstock (September 21); Oldbury Urban District Council, £4,495 (September 24); Easlington Rural District Council, £4,800 (September 21); Leigh-on-Sea Urban District Council, £1,217 (September 28); Surbiton Urban District Council, £63,500 (September 29). *Street improvements, etc.*—Aldeburgh Borough Council, £2,200 (September 21); Hove Borough Council, £1,370 (including £420 for underground convenience) (September 23); Dawlish Urban District Council, £4,000 (September 23); Wrexham Borough Council, £2,800 (September 27); Leigh-on-Sea Urban District Council, £7,522 (September 28); West Bromwich Borough Council, £4,270 (September 28); Warrington Borough Council, £12,519 (September 27); Carshalton Urban District Council, £3,768 (September 27); Finchley Urban District Council, £8,337 (September 26); Chester City Council, £5,434 (September 29); Gosport and Alverstoke Urban District Council, £2,028 (September 30); Ashton-under-Lyne Borough Council, £2,300 (September 28). *Electricity undertakings.*—Walsall Borough Council, £23,225 (September 28); Leigh Borough Council, £1,500 (September 28). *Various.*—Wolverhampton Borough Council, £6,740 for extension of refuse destructor and power plant (September 23); Thornbury Rural District Council, £4,800 for market (September 23); Clevedon Urban District Council, £1,210 for shelter (September 21); Pudsey Borough Council, £7,500 for town hall (September 22); Torquay Borough Council, for gas undertaking, no amount stated (September 22); Ashton-under-Lyne Borough Council, £1,000 for disinfecting station (September 28); Leigh Borough Council, resumption of previous inquiries into town hall, fire brigade, and bridge improvement loans, £2,142, £4,837, and £115 respectively (September 28).

THE NEW Y.M.C.A. BUILDING, MANCHESTER.

A series of interesting tests recently took place at the new Manchester Y.M.C.A., which has been erected to the design of Messrs. Woodhouse, Corbett and Dean, of Manchester, at a cost of some £45,000.

The building, which is seven storeys in height, is constructed with reinforced concrete throughout, faced with faience tile. It contains some very interesting features, amongst others being a large public hall and galleries on the third floor, a gymnasium on the fifth floor, and a running track on the sixth floor (24 laps to the mile), suspended from the roof principals, between which, on the seventh floor, is situated the fives court. On the other side of the building is a swimming bath on the fifth floor, which is 58ft. 6ins. above the ground floor, 60ft. long, by 22ft. wide, and 8ft. deep. The running track is 64ft. above the pavement.

The gallery cantilever, which was tested, was loaded with pig iron over the whole area between cantilevers Nos. 97 and 99, as shown by the accompanying sketch, when the following results were obtained:—

In sixty-fourths of an inch.

Time	Load per sq. ft.	Deflection at A	Deflection at B	Difference between A & B
12.25	Empty	0.0	0.0	—
12.55	1.2 cwts.	1.9	0.3	1.6
One hour interval.				
2.5	Same load and readings.			
2.30	1.8 cwts.	2.7	0.8	1.9
2.40	2.0 cwts.	3.2	0.3	2.9
4.5	Do.	3.2	0.5	2.7
5.0	Do.	3.5	0.5	3.0 *i.e.*, 3/64 ins.
Load removed.				
8.0	Nil	1.8	0.2	1.6

The beams underneath the Bath were also tested with the following results, the bath being filled with water to the extent of 40,468 gallons of water, weighing 183 tons.

Date	Time	Depth of Water at Beam 52	Deflection of Beam 52 in sixty-fourths	Deflection of Beam 51 in sixty-fourths.
July 21,	11.30	0ft. 8ins.	0.0	0.0
July 21,	4.0	0ft. 10ins. minus	0.2	0.0
July 22,	12.0	1ft. 6ins.	0.0	0.0
July 23,	10.45	2ft. 0ins. plus	0.2	0.3
July 25,	12.0	2ft. 6ins.	0.6	0.2
July 26,	3.30	3ft. 6ins.	0.9	0.6
July 27,	1.0	4ft. 3½ins.	2.0	0.7
July 28,	2.30	5ft. 2½ins.	2.3	1.3
July 29,	1.0	6ft. 0½ins.	2.0	2.0
July 30,	12.0	6ft. 3½ins.	2.1	2.0
Aug. 2,	12.0	6ft. 4ins.	2.0	2.0
Aug. 3,	12.0	6ft. 7ins. (full)	2.1	2.0
Aug. 5,	3.0	6ft. 7ins.	2.7	2.1
Aug. 6,	3.0	6ft. 7ins.	2.7	2.2
Aug. 11,	3.0	6ft. 7ins.	2.7	2.2

It was anticipated that the beams would return to the normal, but as it was not convenient to leave the deflectometers in position until the bath was emptied, no results were ascertained.

The engineers for the building were the Trussed Concrete Steel Co., Ltd., of Caxton House, Westminster, and Kahn Trussed Bars and Kahn Bars were used throughout.

The tests were carried out under the supervision of the architects, Messrs. Woodhouse, Corbett and Dean.

COMPETITIONS.

Rothschild Road School, Acton.

The Acton Education Committee adopted on Thursday last the award of the Assessors in the above competition, which is as follows: 1st, Mr. Arthur H. Fitzgerald, 12, Shipley Road, Teignmouth; 2nd, Mr. Percy Brockbank, 14 and 15, County Chambers, Southend-on-Sea; 3rd, Mr. H. A. Cheers, Twickenham.

LIST OF COMPETITIONS OPEN.

OCT 1. ANTWERP. SCHEME FOR LAY-OUT OF SITE OF FORTIFICATIONS, ETC.—Premiums £1,000, £400, and £200. Conditions may be seen at Commercial Intelligence Branch of the Board of Trade, 73, Basinghall Street, E.C.

OCT. 1. DENBIGH PUBLIC HALL, MARKETS, MUNICIPAL BUILDINGS, ETC. The Town Council invite competitive plans and designs of a public hall, markets, municipal buildings, etc., at a cost not to exceed £10,000. Particulars (deposit £1 1s.) of J. Parry Jones, Town Clerk, Denbigh.

OCT. 1. BRIGHTON. The Governors of the Brighton, Hove, and Sussex Grammar School invite architects who have erected grammar schools, higher grade or secondary schools, or schools of a similar character during the last fifteen years, to send their names and particulars of such buildings to A. F. Graves, Clerk to the Governors, 9, North Street, Quadrant, Brighton. A selection will be made from those who respond to this invitation, and a limited competition under motto will be instituted, with a professional adviser to assist the Governors in their ultimate choice. The number of competitors selected will probably not exceed seven, and it is the intention of the Governors to employ the author of the approved design to erect the school.

OCTOBER 31, ETC., ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK. Open only to architects practising in Dublin. Premiums £100 (to be merged), £30, and £20. Conditions on application to the Registrar.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Competitive designs are invited from architects for rebuilding the above property, for which the following premiums are offered for three selected designs:—1st £100, 2nd £50, 3rd £25. A plan of the site and particulars can be obtained from J. Elmes Beale, owner, Bournemouth, on payment of a deposit of one guinea, which will be refunded upon receipt of a bona-fide design.

IMPROVEMENTS AT WATERLOO STATION, LONDON

The London and South-Western Railway Company are contemplating further improvements in the neighbourhood of Waterloo Station in connection with the enlargement scheme which is now being carried out.

The extension on the south side of the station has already been completed. Spacious new platforms have been provided and the roof area has been increased. Workmen are now busily engaged upon buildings on one side of the slope leading from the south platforms to Waterloo Road, and it is understood that the full scheme will not be completed within the next two years.

The latest idea of the company is to construct a new road which will practically surround the station. This will involve the demolition of some small property and the diversion and improvement of Mepham Street. The latter thoroughfare runs parallel with the South-Eastern Company's line for some distance from the York Road entrance, and afterwards turns round into Waterloo Road. The scheme provides for a new route that will make Mepham Street practically straight. The line of the deviated street is through the company's property on the east side of Mepham Street and Waterloo Road. They are willing to sacrifice their property to the purposes of the improvement, which will undoubtedly be in the interests of the public using the road, while it will also enhance the appearance of a not altogether salubrious locality. It will be necessary to obtain Parliamentary sanction for the scheme. The approval of the Lambeth Borough Council has been given.

CORRESPONDENCE.

"The Difficulties of Preserving Buildings."

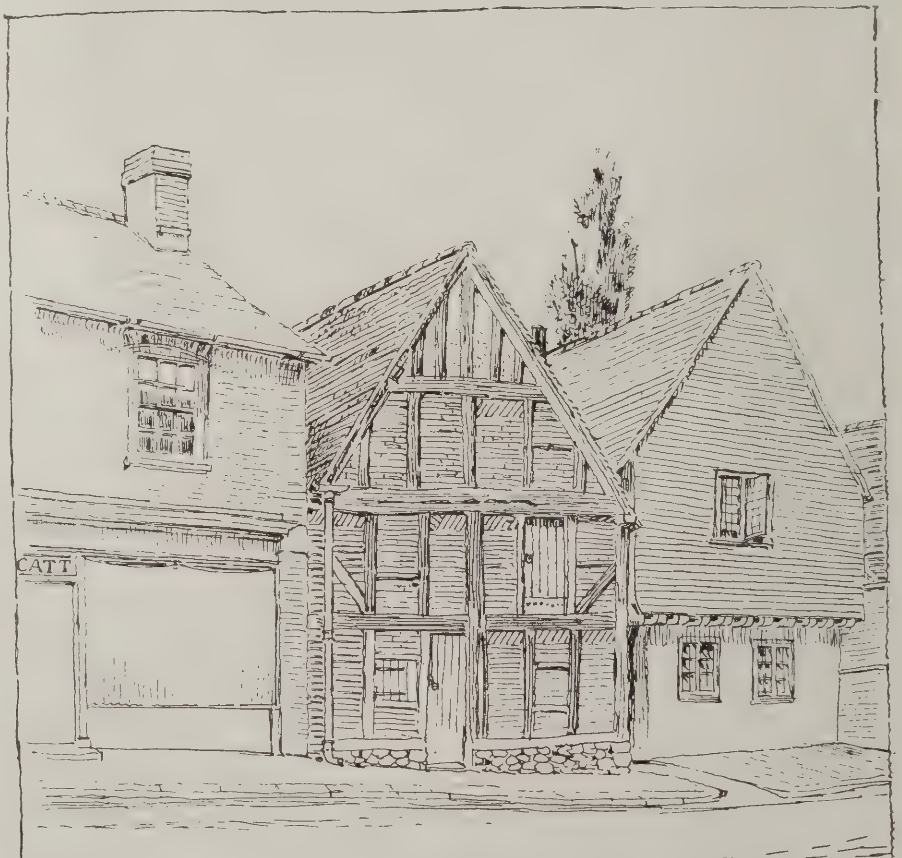
To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I send you a sketch of the old building at Limpsfield referred to in your note under the above heading. The most picturesque part of Limpsfield village will certainly be spoilt if this building is demolished, but it should surely be possible to convert it into quite a good post office without injuring it to any great extent.

There is a small yard at the back of the building, and I suggest that if the first floor of the old building were taken out so as to give sufficient height for a post office, leaving in any beams that are necessary to tie the old walls in, and leaving the loft floor intact so as to have a room in the gable, the yard might be built over in three stories, with rooms about 7ft. high, and by this means I should think sufficient accommodation could be secured. The windows in the front of the timber building would, of course, be reinstated in their old position, and as there would be four of these in addition to the door, there would be plenty of light in the public office. The rear room would be lighted from the side and roof, and possibly also from the back. At any rate, some effort should be made to deal with the matter without destroying such a characteristic piece of old timber work, and without injuring the appearance of the village street.

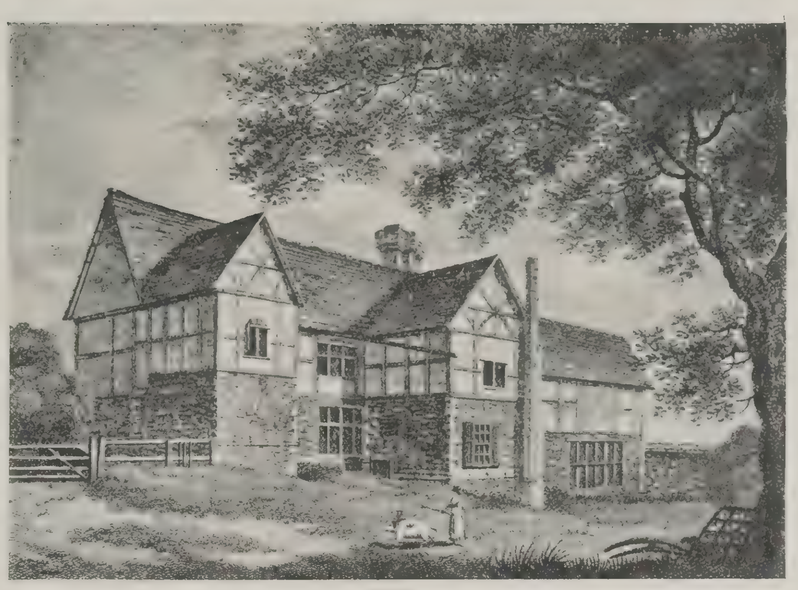
ARTHUR KEEN.

[The note referred to by Mr. Keen under the above heading appeared in our issue for September 14th, under "Notes and News."
—EDITOR.]



Threatened with demolition
In Limpsfield Village
A.K.

EXPLORATIONS AT LESNES ABBEY.

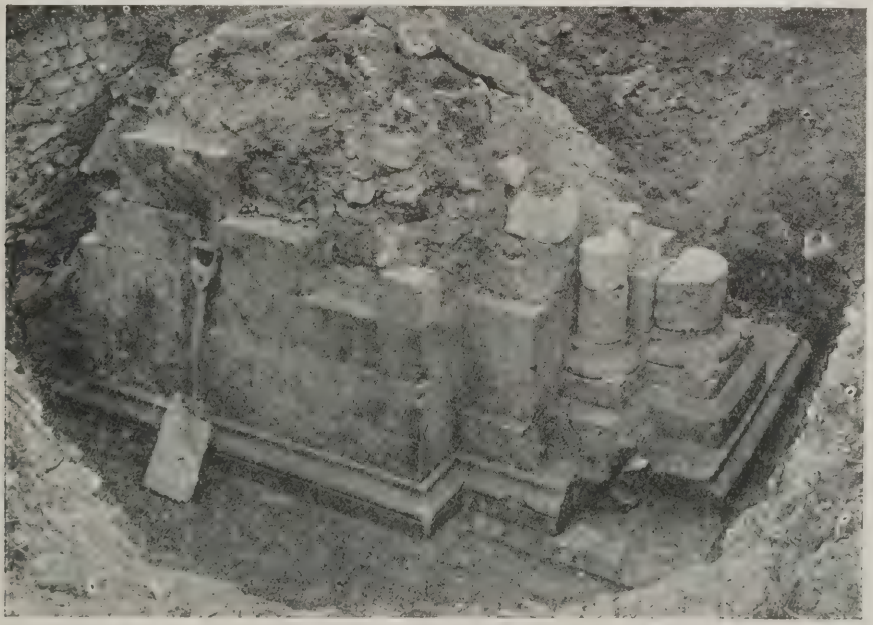


LESNES ABBEY: ABBOT'S LODGING FROM NORTH-EAST, 180'.
(From an engraving in the British Museum.)

A "Report on Explorations at Lesnes Abbey, Kent," which has just been issued by the Woolwich Antiquarian Society, is, both in subject and treatment, an unusually interesting specimen of its class. It contains about fifty well-produced illustrations, a well-written general account of the explorations, and separate descriptions of special features, as well as careful and copious historical notes on the abbey and its founder. A thorough and systematic investigation of the abbey walls and their surroundings was undertaken during 1909, and is still proceeding. It is therefore anticipated that the important discoveries that have been already made will be largely extended.

The history of the abbey may be shortly summarised. It was founded and endowed in 1178, by Richard de Luci, Lord Chief Justice of England, who, during the absence of Henry II. in France, was Regent of the Kingdom. The abbey fell into decay after the dissolution of 1524-5, when its revenues were diverted by Wolsey to his college at Oxford. Since 1633 the property has been rented by farm tenants. Until the present excavations were made, the visible remains of Lesnes Abbey were comparatively insignificant. Operations were begun in the cloister area, where portions of the arcade wall on the north and east sides were discovered, and on work being transferred to the nave of the church, this building was found to have been about 140ft. long by 65ft. 6ins. wide, with north and south aisles. The existing remains above ground comprise two bays of the north aisle wall, with a square angle buttress at the north end of the west front. The bases of two of the responds against this wall, and the base of the circular vaulting shaft in the north-west angle of the aisle, were found in position. The lines of the west front were laid bare, and portions of the two sleeper walls under the main arcades, with the flanking buttresses and the bases of both jambs of the great west door, were located. The transitional character of the work was exactly what might have been expected from the date of the house (1178).

On the site of the north transept, the western wall flanking the cloister was uncovered, and a tiled pavement was found. On the east side of this transept are three chapels of equal size, two of them revealing remains of altars. Here also a portion of tiled pavement was found; and the discovery of such pavements has been so important as to warrant a special description by Mr. Frank C. Elliston Erwood, whose excellent drawings of some of them show many designs that are admirable, as well as some that are quaint rather than artistic. Many interesting fragments of moulded stone, tracery, and vaulting ribs were brought to light, and the many fragments of glass that have been unearthed justify a special note by Mr. Harry J. Powell, who believes that the pieces may be assigned roughly to a period extending from about 1280 to the end of the fourteenth century. He thinks that possibly the collection may be of special value if it throws some fresh light on the decay of mediæval glass and the effect of decay on the transmission of light and colour. Cast into a vault in the Lady Chapel was the effigy of a cross-legged knight, richly coloured, and bearing the arms of a De Luci of Newington, Kent, 1310-20; and under the altar of the Lady Chapel is a curious crypt or chamber, roughly constructed and irregular in shape, with narrow steps leading up to the church presbytery, and probably used as a reliquary. The pamphlet in which these interesting particulars are set forth is issued at half-a-crown, and may be obtained from Squires and Son, 95 and 96, Wellington Street, Woolwich. Subscriptions in furtherance of the excellent work that is being done would be welcomed by Mr. W. T. Vincent, chairman and treasurer of the Works Committee, 189, Burrage Road, Woolwich.



The western piers of the tower were rectangular on plan, having a plain square abutment fronting the aisles, with a semicircular pier, and two side shafts supporting the North and South Tower arches. The abutments of the Nave arcades were unfortunately destroyed by the erection of a garden wall over them.

LESNES ABBEY: SOUTH-WEST PIER OF TOWER.

LESNES ABBEY: WINDOW OF PULPIT STAIRS.

THE R.I.B.A. TOWN PLANNING EXHIBITION

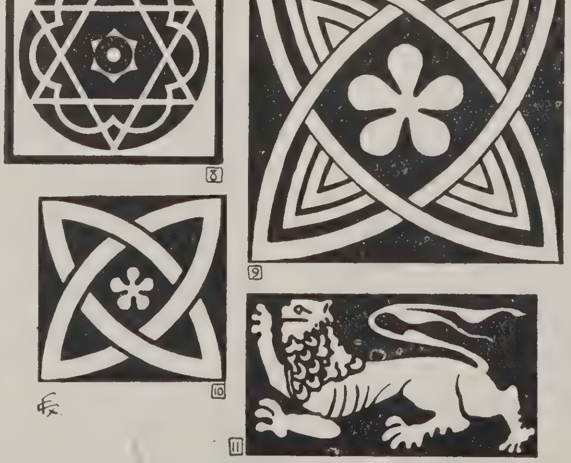
Mr. Raymond Unwin has given to the "Morning Post" some details of the exhibition he is arranging for the forthcoming R.I.B.A. Conference, which exhibition will be held in the galleries of the Royal Academy from October 10 to 22. Mr. Unwin has visited the town planning exhibitions at Berlin and Düsseldorf for the purpose of selecting material, and has obtained examples of the best town-planning work that has been done throughout the world. "We shall show a large selection of plans that have been made by the chief cities in Germany, Austria, Sweden, Denmark, Holland, and France. The Prefect of the Seine has sent us a valuable collection of plans showing the development of Paris from the time of the Revolution, the work that has been carried out by Baron Haussmann, and the work contemplated as part of the great scheme for improving the city, and towards which thirty-two millions were voted some time ago. In addition there will be a large number of models and competitive drawings showing the great care taken in many foreign cities for the improvement of squares, streets, façades, etc. We expect to have over a thousand plans and models of various sorts, and of course many beautiful drawings and perspective sketches, and all the interesting features bearing on town planning. We shall show how many Continental authorities, particularly Scandinavian, are purchasing the land around their towns and developing it, sometimes building themselves, sometimes assisting societies of public utility to build, and generally controlling land speculation and arranging the best system of development.

"The exhibition will also demonstrate how other towns are laying themselves out to foster their industries, reserving all the best sites adjacent to the railways, canals, rivers, or docks, for industrial purposes; how the municipalities—Frankfort and Mannheim, for example—are building new docks (they are building seven miles of new docks at Frankfort, five hundred miles from the sea), with a view to fostering the industries of the town; and how they are laying out areas for industrial dwellings near the manufacturing areas, so that the workmen may have habitations near their work. The exhibit from America will include Mr. Burnham's wonderful series of drawings for remodelling and extending Chicago to almost any extent, preserving the parks, and particularly the recreation grounds for children and adults in proportion to the population in the different areas."

Mr. Unwin said that the Berlin Exhibition was visited by 65,000 people, who paid a shilling each for admission. A great many more were admitted to see the exhibition plans resulting from the competition for laying out the whole of the area round Berlin for a radius of fifteen miles, "one of the greatest town planning competitions ever held. A sum of £8,000 was subscribed for prizes by the different municipalities for suggestions for dealing with serious traffic problems in various parts of Berlin, rearranging railway stations, providing additional railways, and areas for residences of all classes. The prize drawings of this exhibition will be brought to London, and they will show three or four of the best schemes for dealing with the problem, which, though smaller, is still comparable in character to the town planning of Greater London which we are about to face here. The Germans have found that the physical condition of the people is deteriorating as a result of the block system of dwellings, and they are now adopting the cottage system. The city of Ulm is foremost in this innovation. We shall show plans of the cottages of Ulm, and we expect to obtain a larger exhibit showing the workmen's colonies which have been developed at Essen.

"All the garden cities and suburbs planned in England, including Letchworth and Hampstead, will be shown at the exhibition. The subject of town planning will be treated historically. We shall show the development of town planning from the earliest times. There will be Roman, Greek, and Mediæval examples. It is interesting to note," said Mr. Unwin in conclusion, "that the District Surveyor of Marylebone will exhibit a series of drawings in the competition for the laying out of Regent's Park held over a century ago."

LESNES ABBEY: DOORWAY EAST SIDE. *(See previous page.)*



LESNES ABBEY TILES. *(See previous page.)*

FIRES AND WIRE-FUSING.

For some time past it has been customary to attribute all fires whose origin is unknown to the fusing of an electric wire. This has been offered as a complete explanation, as though the fusing of a wire were a mysterious accident without cause or reason.

"It would be much nearer the truth," said Mr. Borlase Matthews, an expert electrician, who has made a special study of this subject, and who has been interviewed by a correspondent of the "Evening News," to attribute many of these fires to the craze for cheapness.

"Drapery firms and others, when they are putting in electric light, ask for estimates. A reliable firm sends in an estimate for, say, £200, and this is received along with an offer for £160. In the majority of cases the offer of £160 is jumped at.

"The reason for the cheapness in the second offer is that it is probably made by a man absolutely without any qualification for his work. The local plumber has picked up a little knowledge of how to lay wires perhaps by living in the same house as an electrical fitter, and he straightway calls himself an electrical engineer.

"It is a wonder there are not more fires. The man's material is of the worst description, and is a constant source of danger.

"There are German firms which manufacture cheap shoddy stuff almost solely for these small men. They don't use it themselves; but they send it over here.

"The Cable Makers' Association in England charges 6d. a yard for 'flex'—the wires by which electric light in shop windows are suspended. That price ensures a standard high quality. These plumbers and carpenters sell 'flex' at 1½d. a yard—made in Germany, of course.

"The result is, that under any strain the outer covering gives way and leaves the wires bare, so that they can come in contact with any metal that lies near. Then there is risk of fire.

"The extraordinary ignorance of people in regard to 'fuses' is another fruitful source of accidents and fires.

"The fuse is a safety device. It is a piece of metal that readily melts under the undue strain of a 'short circuit' caused by the wire breaking or coming in contact with a metal.

"If the fuse is removed and something that does not heat and melt so quickly with the electric current is put in its place, the weakest part of the wire will then 'fuse'—that is, become white hot and melt. This is as likely as not to be in the wood work, and the building is set on fire.

"Yet I have seen the 'fuse' replaced by hairpins of every variety, by wire from a ginger beer bottle, and by a spanner. I have seen the 'fuse' replaced by a coil of wire wound round and round a score of times—which means that at any point of the wire throughout the whole building a fire may occur, for the 'fuse' instead of being the weakest part has been made into the strongest.

"Drapery assistants also do many foolish things. They find that the electric cord in the window is handy for suspending light goods, so they shove pins right through it. The pin joins the two wires, and a short circuit is formed, and unless the fuse is working all right there is risk of fire.

"In America the fire insurance companies allow 5 per cent. reduction to those firms which have electric light, but they do not allow these flexible wires, with hanging lamps in the windows of drapery establishments. The carelessness of the assistants in the matter of pulling them about, bending and straining them, is too great a risk."

There is a patent fuse system by which fires caused through short circuits are rendered impossible. The fuse consists of a bit of silver wire enclosed in a kind of cartridge. As soon as a short circuit is formed the silver wire melts, and the current stops. The molten metal, being enclosed, cannot drop out and set fire to the floor.

THE MITCHELL LIBRARY, GLASGOW.

(*See Centre Plate.*)

This library had its origin in a bequest by the late Mr. Stephen Mitchell, tobacco manufacturer, who, in the year 1877, bequeathed the residue of his estate, amounting to nearly seventy thousand pounds, to the Corporation of the City for the establishment of a large public library chiefly for the purpose of reference and consultation.

The library was opened in temporary premises with fifteen thousand volumes, and in 1891, when it had increased to eighty thousand volumes, it was removed to the building in Miller Street, which it at present occupies.

The development of the library has been continuous and steady, the number of volumes contained in it now being over a hundred and seventy thousand, and the present building has long been inadequate, both for the stock of books and for the accommodation of readers. The Corporation therefore decided upon the erection of the new building, which is now nearing completion, on a site adjoining St. Andrew's Halls, with frontages to North Street, Berkeley Street, and Kent Road.

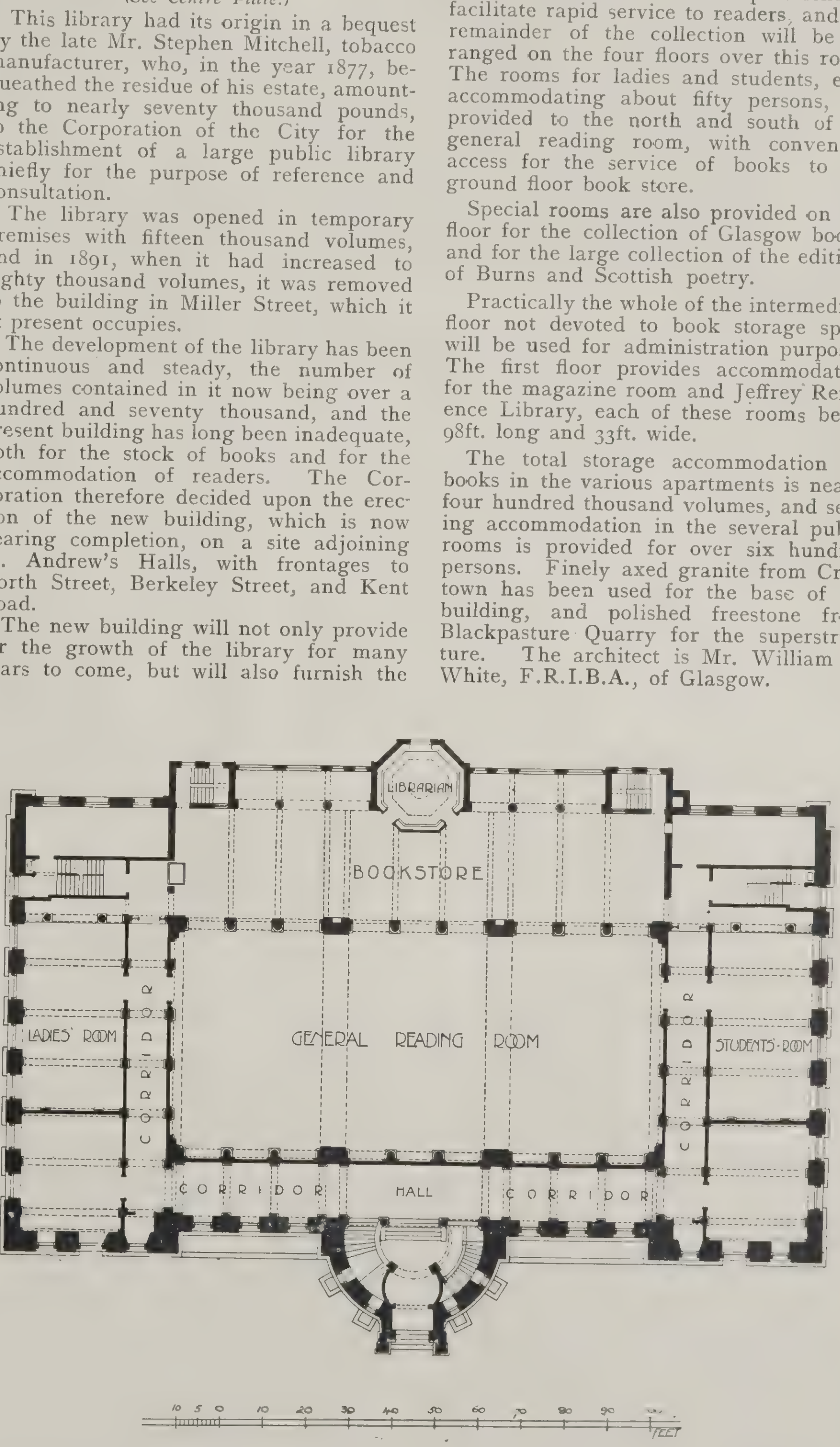
The new building will not only provide for the growth of the library for many years to come, but will also furnish the required space for the Jeffrey Collection, which was some years ago bequeathed to the Corporation on condition that it was kept apart and called The Jeffrey Reference Library.

The basement floor, extending under the entire building, is largely devoted to the storage of books, and also provides the space required for a very complete installation of the plenum system of heating and ventilation. The principal reading room, 113ft. by 52ft., occupies the centre of the building on the ground floor. It is lighted entirely from the roof, and provides accommodation for over 320 persons seated at tables. About forty thousand volumes of the most-used books in the collection will be placed in the book store to the west of this apartment to facilitate rapid service to readers, and the remainder of the collection will be arranged on the four floors over this room. The rooms for ladies and students, each accommodating about fifty persons, are provided to the north and south of the general reading room, with convenient access for the service of books to the ground floor book store.

Special rooms are also provided on this floor for the collection of Glasgow books, and for the large collection of the editions of Burns and Scottish poetry.

Practically the whole of the intermediate floor not devoted to book storage space will be used for administration purposes. The first floor provides accommodation for the magazine room and Jeffrey Reference Library, each of these rooms being 98ft. long and 33ft. wide.

The total storage accommodation for books in the various apartments is nearly four hundred thousand volumes, and seating accommodation in the several public rooms is provided for over six hundred persons. Finely axed granite from Creetown has been used for the base of the building, and polished freestone from Blackpasture Quarry for the superstructure. The architect is Mr. William B. White, F.R.I.B.A., of Glasgow.



THE MITCHELL LIBRARY, GLASGOW. WILLIAM B WHITIE, F.R.I.B.A, ARCHITECT.

FIRE-PREVENTION NOTES.

Drapery Fires. "Another Fatal Drapery Fire" is becoming a too familiar heading in the newspapers. Its latest application (up to the time of going to press) referred to a further fire at the premises of Mr. Wallace Hughes, of the Brixton Road—the third fire of a mysterious series at the same establishment, and the fourth fire that had occurred in the same district within a few weeks. The fire was observed at half-past two in the morning. Dense smoke was seen then to be coming from the windows of a front bedroom occupied by girls, who appeared at the windows, which were about 30ft. above the pavement. As the fire-engines and escapes were heard approaching, the girls were urged not to jump, but to await their arrival. Three of them leapt down, however, and of these one was killed and two were seriously injured. At the inquest it was stated that a projecting signboard played an unfortunate part in the disaster. The girl who met her death struck her head on it as she fell; and some of the witnesses thought that it had prevented the chute from being used, the chute having fallen between the stays and the sign. A fire officer, however, said that the girls, in their panic, had not put out the framework of the chute.

Fire and Panic. From what we believe to be the more practical lessons of the fire, the public mind has been largely diverted by a bitter complaint against "the living-in system." Of course, if nobody had been living on the premises, probably no one would have suffered death from the fire. This is understood to be mainly a polemical contention; but it is possible to sympathise with it so far as to insist upon the necessity of providing special means of escape from fire where young women "sleep in"; for the evidence given at the Brixton inquest confirmed the impression that young women in presence of imminent danger from fire are apt to become too completely terror-stricken to avail themselves of ordinary means. One of the witnesses said, "Miss —— begged me to hold her, to keep her from throwing herself out, but she was too strong for me, and I could not hold her." Some of the ladies—notably the one who gave this striking evidence—managed to keep their heads; but they were powerless to allay the frantic fears of the others. These terrors were no doubt greatly intensified, if not wholly created, by the knowledge of previous disasters, and by the absence of confidence in the means of escape. At a more recent fire at a drapery establishment at Chatham, too, the hysterical condition of some of the girls made their rescue difficult.

Legislative Fire Prevention. It would really seem to have become abundantly necessary to legislate specifically with respect to drapery establishments. If they were planned and constructed as we think they ought to be and could be, the danger from fire could be at the very least reduced to the level of an ordinary risk—which would be a vast improvement on present circumstances—and the means of escape could be perfected. The recognition that it was so perfected, and familiarisation with its details (which would be of the utmost simplicity), would find the critical moment, if it ever arose, deprived entirely of its paralysing influence for all but the ultra-hysterical, who would receive prompt succour from the stronger minded. The attitude of the community upon this subject is almost inexplicable. It is almost fatalistic in its apathy. Time after time, valuable lives are sacrificed, sometimes singly, and too often wholesale, to the ignorant and unreflecting belief, so widely shared, that human responsibility begins and ends with the maintenance of an efficient system of fire-brigades; and yet, apparently, the public grows no wiser in spite of the efforts that have been made to convince it that the terrible waste of life and property is almost entirely preventable. It is well to adopt every possible means of extinguishing fire; but it were infinitely better to take every precaution against outbreak. But the fire brigades are a pretty heavy charge upon the community, whilst preventive measures imply a little extra outlay from private pockets, and are therefore neglected. They must not be left to voluntary effort; they must be rigidly enforced.

Compulsory Precautions. Until this compulsory prudence is assured, architects, who are wiser in their generation than the children of light who require the construction of large drapery stores, are not free from the moral responsibility of pointing out, and as far as possible insisting upon, the adoption of all rational methods of minimising fire risks. Floors, ceilings, partitions, and even windows, may be made either fire-assisting or fire-resisting. Staircases and doors may be made and placed so as to be either so many death-traps, or the means of easy escape to safety. Goods—even the flimsy and fire-courting contents of a drapery store—may be so disposed or accommodated as to render fire almost inevitable or extremely improbable. Those who are responsible for the government of towns would be doing a work of incalculable worth and consequence if they collected a body of information upon these points, and deduced therefrom a code of regulations upon which all whose business premises are at present a perpetual menace to public safety should be strictly compelled to act.

Moral Effect of Preventive Measures. It has been suggested above that the moral effect of preventive measures is, at a crisis, of great practical value, while, on the other hand, the want of confidence may act even more disastrously than immediate contact with fire and smoke. The death and the injuries at the Brixton fire were due to panic; and it used to be commonly the case that, on an alarm (false or true) of fire in a theatre or other large assembly, the assembly grew mad with fear, and a great part of it perished miserably, and quite unnecessarily, in the frantic efforts to escape. Of recent years, such panics have been almost unknown in this country, and the few that have had to be chronicled have usually occurred in assemblies of children. And that even children are amenable to the opposite suggestion of immunity from danger is delightfully seen in their excellent behaviour during fire-drill at the Council schools; while more than once the discipline has told admirably in cases of actual school fires. The London County Council framed with uncommon wisdom and knowledge of human nature their requirement that a fire-proof curtain should be raised and lowered during every performance at a theatre. The moral effect of this regulation is doubtless of enormous value; and this, coupled with the knowledge that really practicable exits are abundant, has rendered panic almost impossible; and the criminal lunatic who used to raise a false cry of fire with the object of enjoying the ensuing panic is no longer able to indulge in a form of sport from which he (or she—for many false alarms have been given by drunken or hysterically excited women) would be the chief, and probably the only, sufferer.

Domestic Fire Protection. Lord Roberts has placed about his Ascot residence, Englemere, printed rules for the guidance of the servants. Rule No. 1 says: "The first person to discover the fire to go at once to the fire bell and ring it. The rope which pulls the bell is to be found on each floor, on the left-hand wall of the lift." The next rule instructs the visitors "to go straight to the hall on hearing the fire bell." Then Lord Roberts has arranged for what the butler shall do:—"To see that everyone in the house is warned, and to make sure that all visitors and the maids assemble in the front hall with as little delay as possible, then to report to Lord Roberts and wait for orders." "First footman, second footman, third footman," are all detailed for various duties, and even the hall boy has his place in the general scheme:—"To go straight to the electrician and warn him, and then warn the carpenter, returning as quickly as possible to the house." The electrician, the coachman, and the stableman are all catered for admirably. Then come rules for "gardeners:—To go at once to No. 3 and No. 4 hydrants at the back of the house and fix the hoses ready for use. Chauffeur:—To go to McDonald as soon as possible and help him. Carpenter:—To go direct to the top floor and assist to first footman. Maids:—To go straight into the hall."

Some Recent Fires. Since the publication of last month's "Fire-Protection Notes," the following fires (with, of course, many others that were less noteworthy) have been reported: Total destruction of a large factory at Ogle Mews, off Great Portland Street, Marylebone. The outbreak originated in the basement of premises occupied by three firms, of whom two were cabinet-makers, and the third upholsterers. The cause of the fire is not known. The flames spread with great rapidity, and the workmen engaged on the various floors had only a few seconds in which to escape. The firemen were unable to prevent the destruction of the building, and so confined their attention to limiting the outbreak, and after working for about three-quarters of an hour they got the flames under control. The damage was estimated at several thousand pounds.—Much damage was done at the premises of Messrs. W. C. Ware and Sons (Limited), English and foreign timber merchants, Lower Kennington Lane, by a fire which broke out in the saw mill, a building of considerable size at the rear of the offices. An adjoining warehouse belonging to a firm of bedding manufacturers caught alight. The fire was got well in hand in less than an hour. The cause of the outbreak is unknown.—A building used by Messrs. Sternberg, Wilson, and Co. (Limited), office furniture manufacturers, Charlotte Street, Shoreditch, was also badly damaged by fire at the same date as the two above recorded.—Damage to the amount of £10,000 or £12,000 was caused by a fire which broke out in the timber factory owned by Mr. E. M. Jewson, and situated in the Great Western Docks, Plymouth. The outbreak occurred before midnight, and lasted several hours. Hundreds of men, including Royal Marines and sailors, assisted the fire brigade in the work of extinguishing the flames. —Two fires occurred in Whitechapel. At the workshops of Messrs. J. Wontner, Smith, Gray, and Co., sanitary electrical engineers in Half Moon Passage, a narrow court, two workmen, named Albert Craven, aged about twenty, and Harry Hurrell, aged thirty-one, were burnt about the face through an explosion caused by a candle being taken near an oil tank. The explosion caused a fire, which was quickly extinguished by the fire brigade. A large four-storey building at the rear of a furniture store at 53, Whitechapel Road, was destroyed by the second outbreak.

The Brussels Phœnix. King Albert of the Belgians was very complimentary to our country when, last week, he opened the new British section of the Brussels Exhibition. He congratulated the exhibitors on the indomitable spirit which led them at once to set about reinstating the British section after the disastrous fire of August 14th. The "Times" also pays a high tribute to the admirable spirit displayed by those leading representatives of the commercial community who, it recognises, were actuated by much more generous and patriotic motives than the bare instinct of commercial gain. "When so deplorable a disaster occurs as that of August 14, the sentiments attached are not simply or chiefly those associated with the ledger or balance sheet, but those which inspire a man to uphold his country's good name, and to maintain his equanimity and enterprise under a personal check or blow." That is very pretty; and there is much more in print to the same effect; but all the same we wish that the occasion for it had never arisen; and the public apathy with respect to the means of fire protection would almost lead one to suspect that our people rely too much on their grit and too little on their common sense. It is rather sad that "the pictured phœnix which confronts the eye of every visitor to the restored exhibition is an apt emblem of this marvellous resuscitation."

SOME NOTES ON THE LAW OF EASEMENTS.

Apart from what are known as easements of light, there are certain easements with which every builder should be more or less acquainted, for he will "come up against them" sooner or later in the course of his business. There may be a public "right of way" across the site of a proposed building; or a right on the part of an adjoining owner to have access to land from a particular direction. Again, there are certain important rights in relation to the use of drains and watercourses with which a builder has to be familiar.

It is proposed to deal with some of these questions in the course of the present article. When land is let for building, the owner makes all the roads and drains with the object of opening up the land for the encouragement of building. If it is necessary to reserve rights of way over any particular plot, he will be careful to reserve them from the start. If the lessor covenants to make roads in accordance with a proposed building scheme, such a covenant may not be satisfied by merely making the roads over a certain part of the land which has been let; but the lessor may be compelled to make all the roads, if, from the construction of the covenant and the character of the proposed building schemes, it appears to have been so intended. Questions sometimes arise as to whether a right of way must be deemed to pass or be reserved (as the case may be) owing to the fact that a road or path is delineated on the plan attached to the deed. If the land, where the road is represented, is the property of the vendor, and there is an express reference to the plan in the deed of conveyance, though the way might not be otherwise referred to, it seems probable that the deed and the plan together would operate as a grant of a right of way, or that the vendor would be stopped from denying the easement. But the mere exhibition on a plan of an intended road, where there is no reference to it in the conveyance, does not bind the lessor or the vendor to make such roads. A careful lawyer will generally make proper provision for rights of way and other easements in the deed which is drawn up; but sometimes an easement is not expressly mentioned. It may be pointed out that on the grant by an owner of part of his heritage there will pass to the grantee all those continuous and apparent easements which have been and are at the time of the grant used by the owners of the whole estate for the benefit of the parcel granted. Thus, the use of a watercourse, or of a drain, or a coal shoot have been held to pass without any express words, where it was obvious that the property granted could not be commodiously used without them. Nevertheless, with regard to rights of way, a mere right of way does not pass without express words; as where, for instance, "A" has a right to walk across "B's" field, there being no defined pathway. In that case, unless the right of way is expressly mentioned, it is not reserved merely on the sale of the field. But the right to use a particular formed pathway will pass without express mention. An exception to this rule arises where the way is a "way of necessity," as where, for instance, a man acquires a piece of land which is cut off from the highway by other property of the vendor. In that case he has a "way of necessity" to reach the highway.

On the contrary, where a purchaser of land has notice that the adjoining land is to be laid out in building in a manner which will make a right of way over the purchased land necessary to the vendor, such right of way is reserved to the vendor by implication; as a way of necessity.

With regard to rights of way generally, it may be of interest to consider how they may be acquired.

Continuous enjoyment without interruption for twenty years confers a prescriptive right. Consequently, if a man wishes to prevent a right of way being claimed over his land, he must take care to stop it up every now and then. Thus, the owner of a park who allows the public to use it will generally have the gates closed on one day in the year. Again, the fact that a person is using the way under a licence is sufficient to permit his acquiring a title by prescription. Where a licence or permission to use a way across a yard was given by parol more than forty years before action brought, and where such licence was not gratuitous, but subject to the payment of a small annual sum at the end of each year, it was held that the proper inference to be drawn from the annual payment was that it was a payment for a licence for the use of the way during the preceding year, and that such payment was sufficient to negative an enjoyment of the way by the plaintiff and her predecessors as of right for the full period.

Questions often arise, too, as to the extent to which a particular right of way may be used. Where there is an express grant of a right of way to a particular place, the grant is not to be implied by restriction of access to the land for purposes for which access was required at the date of the grant; but a right of way appurtenant to one piece of land cannot be used for access to another piece of land not part and parcel of it. Where the right has been acquired by prescription (i.e., by user during an uninterrupted period of time), the extent of it must be decided by the accustomed user. So if a way is used for foot passengers only, it cannot be extended so as to be used for vehicular traffic. A person having a right to an easement may, as a general rule, use it in such manner as is necessary for its commodious enjoyment. But the immemorial user of a right of way for all purposes for which a road was wanted in the then condition of the property does not establish a right of way for all purposes in an altered condition of the property, where that would impose a greater burden on the servient tenement.

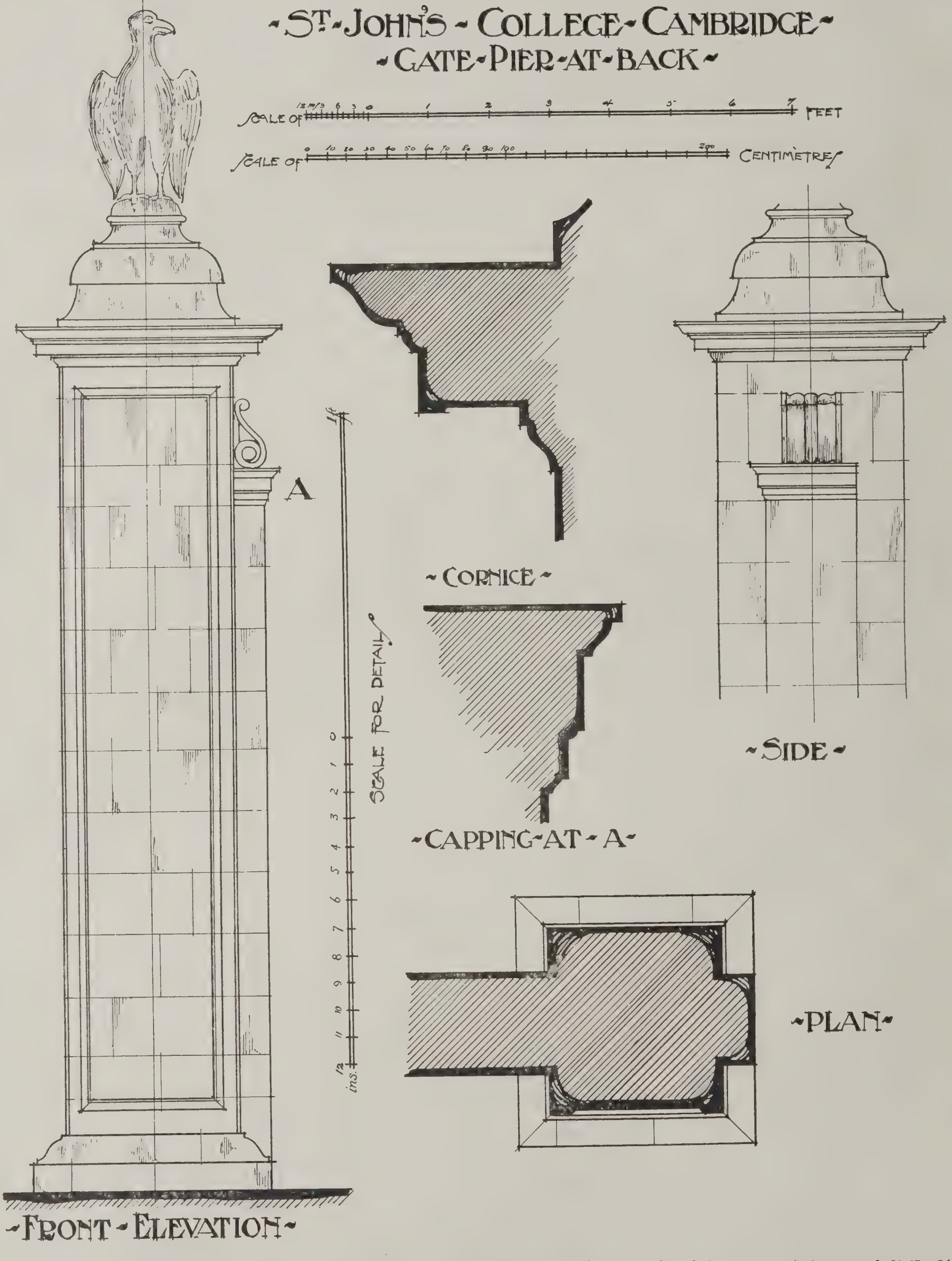
So where a road to a farm has been immemorially used, not only for ordinary agricultural purposes, but, in certain instances, for carrying building materials to enlarge the farmhouse and rebuild a cottage on the farm, and for carting away sand dug out of the farm, such user does not establish a right of way for carting materials for building a number of new houses on the land.

Where, owing to the negligence of a landowner, the public have been allowed to acquire a right of way, it is obvious that building operations may be seriously interfered with. In such a case it may be necessary to make application at quarter sessions for leave to stop up the way; a condition usually imposed being that some other route equally commodious shall be provided for the use of the public.

It is not allowable, however for a dominant owner to make a fraudulent use of the servient tenement. So that he cannot, in order to get the benefit of the right of way for carrying building materials to ground adjoining the dominant tenement, on which he is building a number of cottages, carry them first to the land to which the right of way was appurtenant, and, having deposited them there, subsequently move them to the land on which he is building.

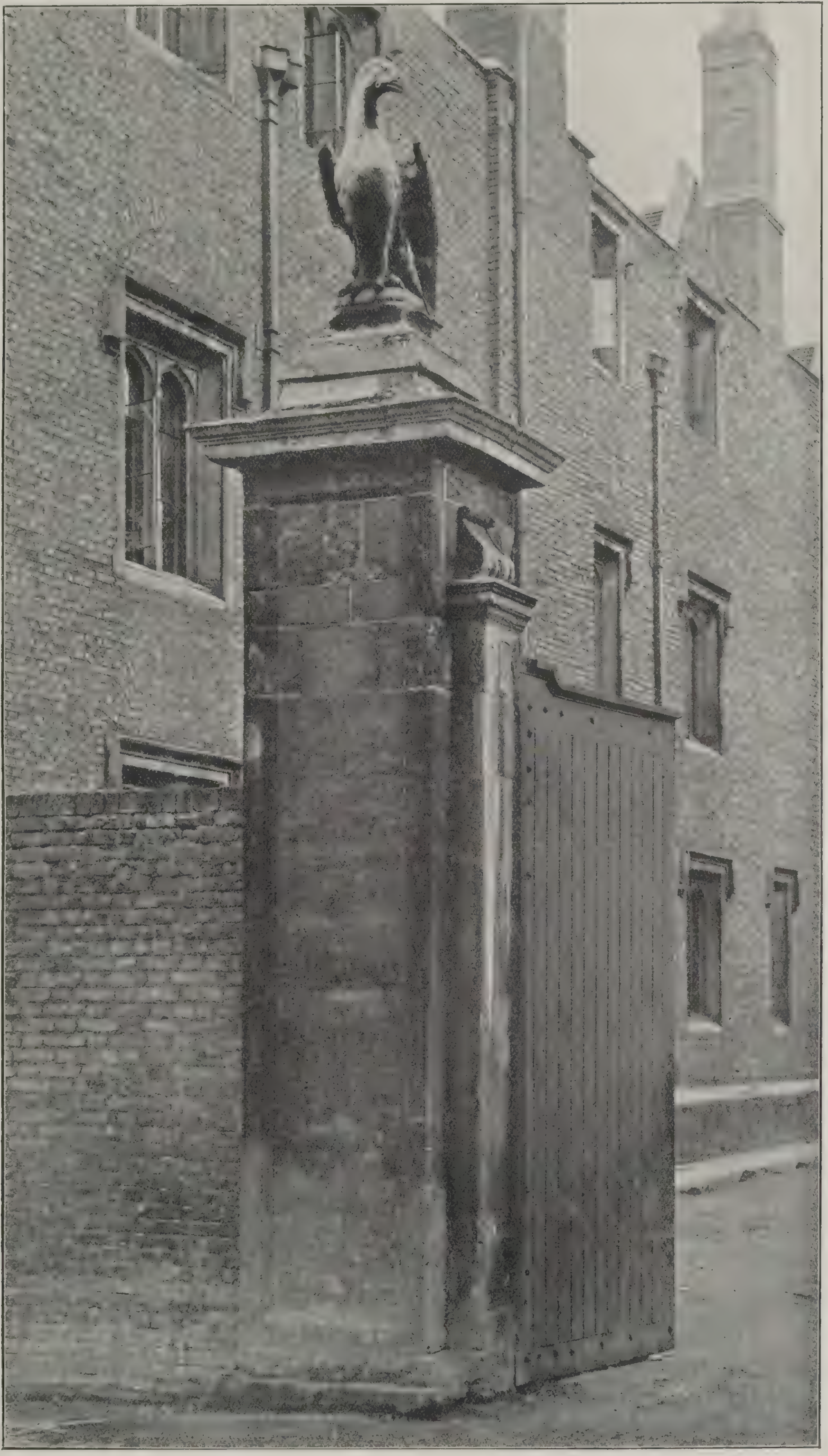
It remains to consider one or two points in relation to the discharge of water from the roofs of houses. In these days, when this kind of drainage is properly provided for, it is not likely that any builder would be so careless as to allow the drip from a roof to fall on to the neighbouring plot of ground. It was decided in a very old case that a man is bound when building so to construct his house as not to overhang his neighbour's property, and to construct his roof in such a manner as not to throw the rainwater upon the neighbouring land. A right, however, may be acquired by user to compel the owner of the adjoining property to receive all the water from the roof of a house; but a right to discharge water by drops upon the land of another does not create a right to collect the water in a spout or gutter, and to discharge it in a single stream over the land.

A right of this description will not be destroyed by heightening, or in any other way altering the house from which the water falls, so long as the burden upon the servient tenement is not thereby increased.



In the audit book for 1711-12 it is recorded that Robert Grumbold, Free Mason, received for his work and the stone used the sum of £1 17s. 8d., Nicholas Biger and John Woodward received £15 8s. 9d., for carving the eagles, and Berry Smith for ironwork (of which nothing now remains) the sum of £5.

MEASURED AND DRAWN BY FRANK T. DEAR.



GATE PIER AT BACK, ST. JOHN'S COLLEGE, CAMBRIDGE.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

NEW BUILDINGS.

IN PROGRESS AND COMPLETED.

Abertillery.—The swimming bath at the Powell's Tillery Workmen's Institute has been opened on completion. The building, which has involved an expenditure of £4,000, is a large and commodious one, with a gallery on three sides, ventilated and lighted from the top. The pond is 60ft. × 22ft. In addition to the swimming pond, there are also provided hot and cold shower baths, a diving stage, springboard, and other up-to-date appliances. The depth of the pond will vary from 3ft. at one end to 6ft. 6in. at the other. The walls and floor of the bath are lined with white glazed bricks, and the floor around is laid with white and green marble mosaic. A special feature of the scheme is the provision of collapsible dressing-boxes, so that during the winter months the hall can be used for concerts, gymnasium, etc. A complete steam-power laundry is provided, and the whole of the buildings are lighted with electric light. Mr. W. Beddoe Rees, Cardiff, was the architect.

Bacup.—The Town Council has approved the following plans:—Additions to Premier Skating Rink, Farholme; two dwelling-houses at Fir Trees, Rochdale Road; additions and alterations to dwelling houses at Lower Boarsgreave Farm, Cowpe; additions at Troughgate Farm; alterations to dwelling-house, 163, Newchurch Road (Fern Hill Terrace); porch at 38, Market Street.

Barnstaple.—Earl Fortescue, Lord-Lieut. of the County, has formally opened the new Grammar School at Barnstaple, which is the first secondary school established under the auspices of the Devon County Council. For the purpose of the scheme three fields, comprising 13 acres, situated between the end of the Ladies' Mile and the Bishops Tawton Road were purchased at a cost of £4,100. The schools are erected in a field overlooking the Park and the Taw Valley, and are built of Wellington best facing bricks, with dressings of Wellington sand facings mixed with Bath stone dressings, the foundations being based on solid rock. Accommodation is provided for 150 boys and 150 girls. There are 12 large classrooms, commodious cooking and manual training rooms, 2 cloakrooms, chemical and physical laboratories, and staff rooms. Central corridors run practically the whole length of the building, which has a short wing at each end. The building is 196½ ft. in length, and the main body is 52ft. wide, the average height of the rooms being 15ft. The assembly hall is 84ft. in length, and 28½ft. in width. All the floors are fire-proof, being constructed of patented tubular concrete flooring. The school will be approached by concrete steps, with stone piers and ornamental gates on either side of the entrance. Mr. Percy Morris, A.R.I.B.A., Exeter, was the architect, and the contract price £9,418.

Byfleet (Surrey).—A workshop for the manufacture of aeroplanes is about to be erected at Wintersell's Farm, Byfleet, for Mr. H. F. Locke-King. The plans have been passed by the Chertsey Rural Council, subject to the provision of fire emergency outlets.

Edinburgh.—The erection of a large grand stand, over 200ft. in length and having accommodation for 2,000 persons, is to be proceeded with immediately at Powderhall Grounds. The new building and roof will be constructed chiefly of steel, on heavy concrete foundations, while the back and sides of the structure will be enclosed by strong timber framing and glazed screens. Immediately under the stand there is a number of refreshment rooms, cloakrooms, and lavatories, and the work is expected to be completed before the beginning of December. Mr. Robert M. Cameron is the architect.

Glasgow.—The Executive Council of the Scottish Historical Exhibition has decided, on the recommendation of the Building Committee, to accept the tender of Messrs. Matthew Henderson, Ltd., for the erection of a concert hall at a cost of £9,553 9s. When completed, the building will provide seating accommodation for 3,000 persons.

Hartlepool.—The foundation-stones have been laid of the extension to the Central Estate Primitive Methodist Sunday School and Hall. The present building was erected in 1895. There is a scheme on foot for the erection of a new church at some future date, and the adjoining site has already been purchased for this purpose. At present, however, it is only proposed to increase the accommodation of the existing hall, and this will involve an expenditure of over £500.

Hitchin.—The work of repair to the north aisle roofs, ceilings, and parapets in connection with the restoration of St. Mary's Church is expected to be completed by about the end of the present month. Mr. Walter Millard, A.R.I.B.A., London, is the architect.

Huntley.—The reconstruction of the Cairnford Bridge over the river Deveron, on the main road leading from Huntley to Glass, has been completed. The bridge was erected about 35 years ago, and consisted of two iron lattice girders each 10ft. deep, with a clear span of 120ft., the carriageway being 17ft. in width, and constructed wholly of timber. A new centre pier has been introduced, and the girders reconstructed and strengthened. The pier is constructed of Portland cement concrete, and partly faced with ashlar masonry to resist the action of ice. The roadway between the girders is carried on cambered steel trough flooring, ⅜ of an inch thick, 7½ins. deep at the end, and 9ins. in the centre, resting on the two side girders. A kerb of Portland cement concrete is placed at each side to retain the macadam which forms the roadway. In reconstructing the girders, it was found necessary to remove a number of the diagonals, which were re-used in constructing vertical bracings. The girders rest on cast-iron bearing plates bolted to the pier. Mr. James Barron, M.Inst.C.E., Aberdeen, was the engineer, and the Rose Street Foundry and Engineering Company, Limited, Inverness, were the contractors, the sub-contractor for the masonry of the pier and the macadam and concrete work of the roadway being Mr. A. Nicholson, Elgin.

Lincoln.—The Mayor of Lincoln has laid the commemoration-stone of the pumping station at Elkesley, Notts, in connection with the provision of a new water supply for Lincoln, which will involve an expenditure of £200,000. Laying the main from Elkesley to Lincoln, a distance of twenty-two miles, has practically been completed, and the Mayor hoped that the water would be turned on in the next mayoralty.

Loftus (Yorks).—The memorial stones have been laid of the new Primitive Methodist school and chapel, which is in course of erection at a cost of about £9,000. The building will be of red pressed brick, with leaded windows, and will provide seating accommodation for 300 persons. Messrs. B. Gott and Sons, Loftus, are the contractors, and Mr. J. C. Kitchen, Scarborough, the architect.

Luddenden (Yorks).—The chancel extension at St. Mary's Church has been consecrated by the Lord Bishop of Wakefield. The work has been carried out at a cost of about £600, Messrs. Walsh and Nicholas, of Halifax, being the architects.

London, S.E.—The work on the new buildings for King's College Hospital at Denmark Hill has been proceeding steadily since July last year, when the foundation-stone was laid by King Edward. The portions at present in hand are the administration block in the centre, the two central ward blocks, and the out-patients' and casualty department The old buildings near the Law Courts will probably be vacated in the early part of the year 1913, when the patients and staff will be transferred to the new institution. The building will embody all that is best in regard to present-day hospital construction, and there will be 600 beds as against 224 beds now available in the present building. The appeal made to the public has realised up to date £235,000, which includes the value of the site. The committee are now anxious to raise £65,000, the remainder of the sum of £300,000 which it was estimated would be required for building purposes.

London, W.—The contract for the complete electrical equipment of the Palladium Theatre of Varieties, Argyll Street, Regent Street, W., has been placed with Messrs. Siemens Brothers Dynamo Works, Ltd., who have sublet the wiring work to Messrs. Rashleigh, Phipps and Co.

Lydbrook (Herefordshire).—The Parish Church has for some weeks been undergoing repairs and additions, which include the erection of a new choir vestry. The work is being carried out by Mr. A. S. Cork, of Paganhill, Stroud, under the supervision of Mr. A. R. Pearson, architect, Ross.

Manchester.—The Albert Hall and Aston Institute, which has been erected in Peter Street, Manchester, at a cost of £55,000 has been formally opened by the Lord Mayor of Manchester.

Merthyr Tydfil.—The new Cefn Coed Bridge, marking the boundary of Breconshire and the Merthyr Tydfil County Borough, has been declared open to the public by the Mayoress of Merthyr. The structure, which stands a few yards lower down than the old stone bridge, has been constructed of reinforced concrete by Messrs. E. H. Page and Co., contractors, Cardiff, from designs by Messrs. L. G. Mouchel and Partners, Westminster. It is 170ft. long and 33ft. wide, and has one arch of 104ft. span, besides several supporting beams at the side. It improves the gradient of the roadway, and lessens the angle to 40deg.

Middlesbrough.—The foundation stones have been laid of the new Primitive Methodist Sunday Schools in Linthorpe Road, Middlesbrough. Situated in a central part of the town, the site is a valuable one for business purposes, and the trustees have incorporated with the new schools four shops. The main hall will be over the shops, and will be two storeys high, having accommodation for 500 scholars. The estimated cost of the building is £3,800, Mr. T. W. T. Richardson, of Stockton, being the architect, and Messrs. Duchars and Bowers, of Middlesbrough, the contractors.

Newport (Salop).—The old church tower is being restored under the direction of Mr. Fellowes Prynne, F.R.I.B.A., London. In the process of taking down the old buttresses, it was found they had been re-cased some centuries ago, and the work had never been properly grouted in, leaving large holes unfilled between the new work and the old. Messrs. R. Wilkins and Sons, Bristol, are the contractors.

Penclawdd (Glam.).—The new Congregational Church, erected at a cost of £4,200, has been completed, and provides accommodation for about 900 persons. The building replaces an older structure built about sixty years ago, and is designed in the Renaissance style, with Ionic columns in front supporting an entablature designed to correspond. The walls are built in local stone, faced with blue "shoddy" facing and Grinshill stone dressings. Internally, the building has been fitted up in oak, finished with a dull wax polish. Messrs. Radford and Greaves, of Derby, were the contractors, and Mr. W. Beddoe Rees, Cardiff, the architect.

Pendleton (Manchester).—The new church of St. Ambrose, Pendleton, erected at a cost of £8,000, has been consecrated by the Lord Bishop of Manchester. The site was purchased from the Salford Corporation 11 years ago, and on the land adjoining the church a rectory is to be built. The building is constructed of red brick, and provides seating accommodation for 700 people.

Perth.—Operations will be commenced shortly in connection with the erection of Perth's new infirmary. The extent of the ground at Tullylumb, to the south of the Western Avenue, is eleven acres, and it is proposed to erect an infirmary with lodges, power station, mortuary, and isolation block.

Selby.—The Urban District Council has approved the following plans:—Heating apparatus on Band Walk, Portholme Mills, with a 58ft. chimney; Drill Hall, Armoury Lane, additions and alterations; two houses in Doncaster Road; four houses in Armoury Lane; children's home in Brook Street.

Southend-on-Sea.—The excavation work in connection with the new sewage pumping station is in progress. When completed the station will consist of a chamber 100ft. square sunk into the ground to a depth of nearly 60ft. and enclosed by concrete walls 5½ft. in thickness. The pumping station includes a pump well 80ft. deep with screening chamber, and in addition the contract comprises the laying of the main sewer and effluent outfall for a distance of nearly 1,300ft. and at a depth of 75ft. from the surface. The necessary tunnel, 9ft. by 6ft., was driven simultaneously at each end, the shafts having a double timber lining with puddled clay between the linings. The tunnel is driven through clay and supported by roof props and cross timbers, and the main sewer, 33in. in diameter, occupies the bottom of the tunnel and is flat topped to take the main outfall 39in. in diameter. Both pipes are built of silicated concrete, and the sewer has a fall of 1in. in 1,400 towards the pumping station, whilst the outfall is level. Messrs. J. Moran and Sons, of Westminster, are the contractors.

Southport.—A further portion of the work in connection with the rebuilding of Holy Trinity Church is now being taken in hand by the erection of the transept and the two porches. The cost of this portion is estimated at £2,600, and the work will include the removal of the gallery at the west end of the church. There will be no galleries in the new building when completed.

South Shields.—The Bishop of Durham has consecrated the new church of St. Oswin, South Shields, which has been erected in the recently formed parish of Brinkburn, a district with a large and increasing population situated between Westoe and Tyne Dock. Occupying a site, one acre in extent, in Stanhope Road, the church is not yet complete, consisting only of three bays and the nave, with seating accommodation for 320 people. The building, which is of brick with stone dressings, is designed in the late decorated Gothic style, and has involved an expenditure of £3,400. When funds permit, the nave will be completed, and choir and clergy vestries added, accommodation being then provided for over 500 persons. Mr. Henry Grieves, A.R.I.B.A., South Shields, is the architect, and Mr. James Young, of Tyne Dock, the contractor.

Stanley (Durham).—The District Council has approved the following plans:—House at South Moor; three houses and a lock-up shop, in Spen Street; 90 houses at South Moor, west of Greenland schools.

Stafford.—The Town Council has approved the following plans:—Cottage, Lichfield Road; alterations to Wynnes' Cottages, Lichfield Road; shop, etc., Rowley Street; four houses, Tithe Barn Road; four houses, John Street.

Starbeck (Harrogate). — St. Andrew's Church, erected at a cost of £6,000, has been consecrated by the Bishop of Ripon. The church is designed in the Late Decorated style, and consists of a nave of five bays, 79ft. long and 24ft. wide, having north and south aisles 9ft. 8in. wide; chancel 36ft. long, with chapel on north side 27ft. long and 14ft. 6in. wide, and a nave arcade consists of octagonal piers resting on moulded bases, having hollow splayed arches which spring direct from the piers, and a clerestory of two-light, tracery-headed windows, is formed over the arcades. The roofs are of open timber construction, and are covered with Tilberthwaite green slates. The interior of the church is principally lined with stone, having bands of ashlar. The total accommodation of the church, including chapel and choir, is 580. The work has been carried out from the designs and under the supervision of Messrs. Austin and Paley, architects, Lancaster, by the following contractors: Mason, Mr. I. Dickinson, Harrogate; joiner, Mr. T. Tomlinson, Holbeck; slater, Mr. J. Shepherd, Harrogate; plasterer, Mr. R. Fortune, Harrogate; plumber and glazier, Mr. J. Woodhead, Wakefield; electric lighting, Mr. R. Falshaw, Harrogate; heating, Messrs. Saunders and Taylor, Manchester.

Swadlincote (Burton-on-Trent).—At a recent meeting of the Urban Council, the plans of the Theatre and Hippodrome for Swadlincote were adopted. In connection with the redecoration of the Market Hall, a Councillor said he hoped the basement would receive attention, as it was nothing more than a rat warren.

West Hartlepool.—The Town Council has approved the following plans:—Nine houses, Carlisle Street, Seaton, Carew; five houses, Berwick Street, Seaton Carew; stable and coach-house, Cambridge Street; house, Burn Valley Road; alterations to Ward-Jackson Hotel, Lynn and Musgrave Streets.

Weymouth.—Messrs. Mangnall and Littlewoods, of Manchester, the designers of the Pavilion Theatre on Weymouth pier, have been commissioned to erect a building adjoining it as a winter pavilion.

Wimborne St. Giles.—The Bishop of Salisbury has consecrated the new Parish Church, which replaces the edifice destroyed by fire some two years ago. The tower and nave walls of the old building have been retained in the new, with the exception of the north wall, which has been rebuilt and set back to increase the seating capacity of the church. In the new work the quaint and distinctive green sandstone obtained from the Ansty quarries has been used in conjunction with the Portland stone produced by the Chilmark quarries. By the enlargement on the north side provision has been made for the accommodation of about seventy or eighty more worshippers. The old seating accommodation was for about 300, including the choir, which was stationed on the floor of the church. Provision has been made for the choristers and organ by the erection of a west gallery of oak, and the church will now provide total accommodation for about 440. The old Georgian east window has been reopened, and a new Gothic lining has been introduced. The floor of the church has been lowered, and in place of the old arcading of five pillars an arcade of three pillars, built of white stone, which extend to the pointed roof, has been substituted. A screen running the entire width of the church, has been erected to divide the sanctuary from the nave. This is of carved oak, and harmonises with the other fittings of the building. The ceiling is supported by six circular stone pillars, and is of fibrous plaster, which it is intended to decorate at some future date. Messrs. J. McCulloch, Ltd., of Kennington, carried out the work of rebuilding, from the designs of Mr. J. N. Comper.

SOCIETIES' REPORTS.

University College, London, School of Architecture.

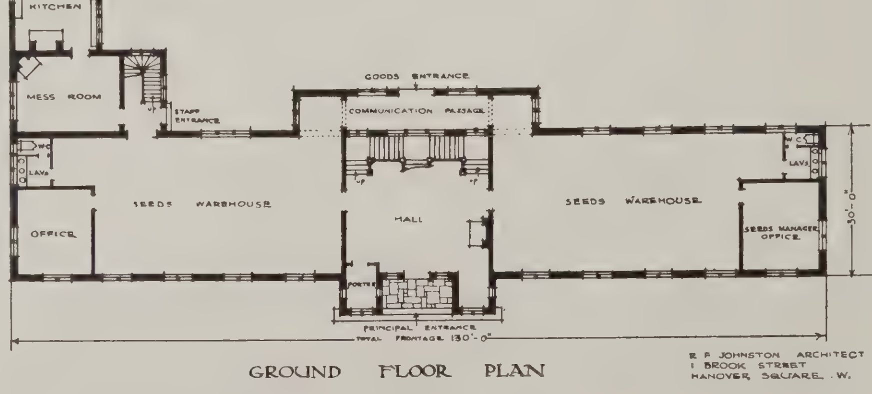
We have received particulars of the public lectures and evening classes for the session 1910-11. Mr. H. V. Lanchester, F.R.I.B.A., will deliver three public lectures on Town Planning on October 6th, 13th, and 20th respectively at 6 p.m. each day. A course of eight lectures on English Domestic work will be delivered by Mr. J. A. Gotch, F.R.I.B.A., at 6 p.m. on the following days:—October 27th, November 3rd, 10th, 17th, 24th, December 1st, 8th, and 15th. The above lectures are out of the ordinary architectural course, and have been arranged owing to the generosity of the Carpenters' Company. In the ordinary school course Mr. Leonard Stokes and Mr. Ernest Newton are the special visitors for the Design Class.

Royal Sanitary Institute.

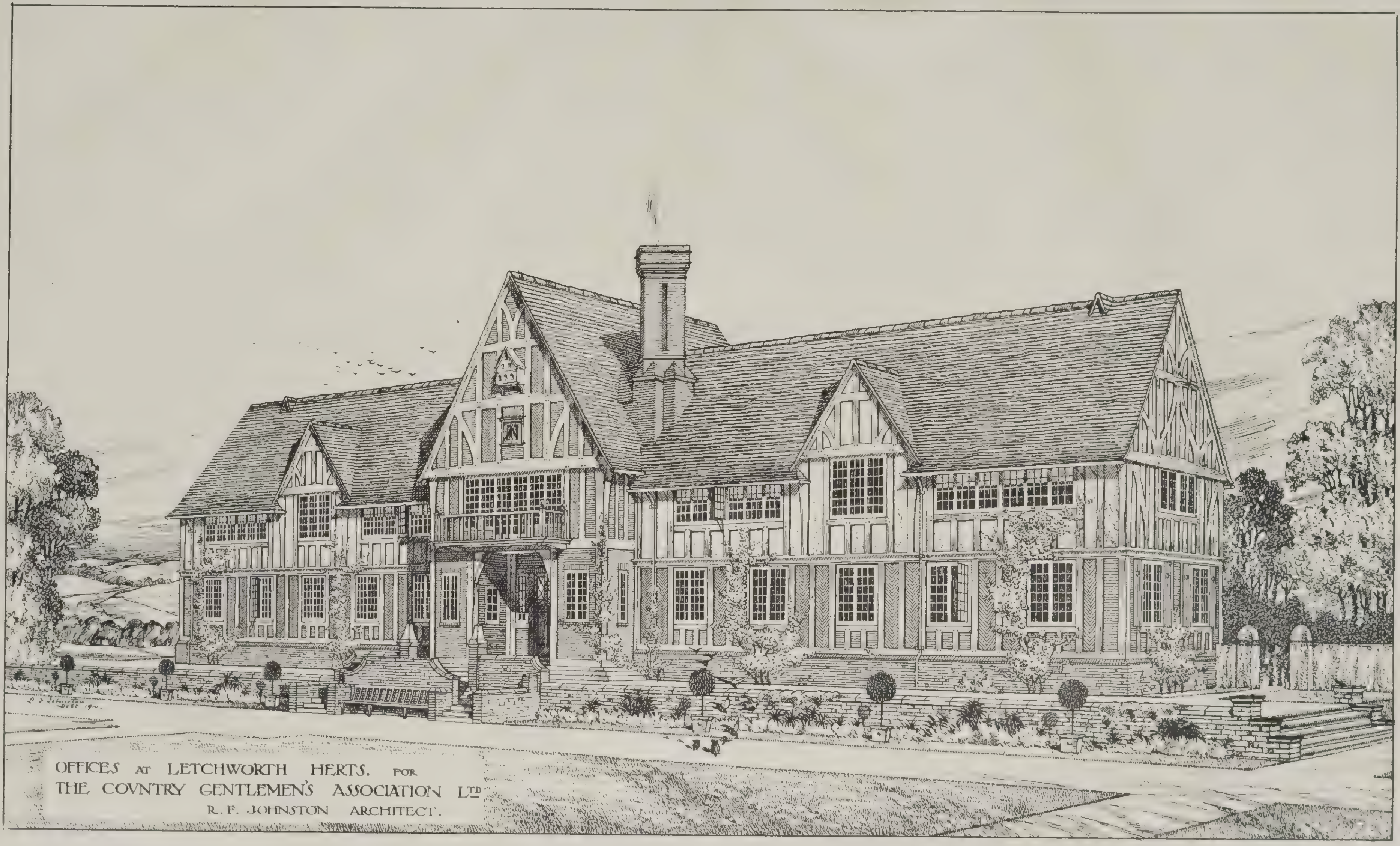
The Royal Sanitary Institute has issued its syllabus of lectures and demonstrations for sanitary officers during the coming session from October to December. Those connected with building construction will be held in November as follows:—Tuesday, 1st, Building Materials, Professor Henry Adams, M.Inst.C.E.; Wednesday, 2nd, Building Sites and Local Physical Conditions, Professor Henry Adams, M.Inst.C.E.; Thursday, 3rd, Building Construction and Sanitary Planning, Professor Henry Adams, M.Inst.C.E.; Friday, 4th, Sanitary Appliances, Mr. W. C. Tyndale, M.Inst.C.E.; Monday, 7th, Ventilation, Warming, and Lighting, Professor Henry Adams, M.Inst.C.E.; Tuesday, 8th, Details of Plumbers' Work, Mr. J. Wright Clarke; Wednesday, 9th, House Drainage, Mr. W. C. Tyndale, M.Inst.C.E.; Friday, 11th, Sewerage, Mr. Jno. Ed. Worth, M.Inst.C.E. Monday, 14th, Sewage Disposal, Mr C. Chambers Smith; Wednesday, 16th, Water Supply, Sources of Supply and Distribution, Mr. Percy Griffiths, M.Inst.C.E.; Thursday, 17th, Water: Composition, Pollution, and Purification, Professor H. R. Kenwood, M.B., D.P.H.; Friday, 18th, Scavenging, Disposal of House Refuse, Mr. H. Percy Boulnois, M.Inst.C.E. Full particulars can be obtained of Mr. E. White Wallis, at the Institute, 90, Buckingham Palace Road, London, S.W.

The Concrete Institute.

With the object of encouraging the contributions of useful papers on the materials employed in and the applications of concrete, in either the general or the special aspects of the subject, the Council of the Concrete Institute have decided to award a medal annually for the paper which they consider to be of the greatest merit in each session. Communications should be addressed to the Secretary of the Concrete Institute, 8, Waterloo Place, Pall Mall, S.W.



OFFICES AT LETCHWORTH, HERTS. R. F. JOHNSTON, ARCHITECT.


OFFICES AT LETCHWORTH HERTS. FOR
THE COVNTRY GENTLEMEN'S ASSOCIATION LTD
R. F. JOHNSTON ARCHITECT.

The drawing illustrates the view facing south. The Country Gentlemen's Association have acquired over 9 acres of land close to the railway station, standing high and having a commanding view of the surrounding district. The entire grounds are to be laid out in gardens, and the building will stand almost in the centre. The materials used are small hand-made red bricks, with rough-cast and half-timber for the elevations, with hand-made tiles on the roofs. The ground floor accommodation is shown on the plan opposite. A special feature has been made of the hall and oak staircase, leading to the first floor, on which are situated the directors' board-room, secretary' office, general offices, etc.

BUILDING ACTIVITY IN SOUTH AFRICA.

Mr. James T. Brown, general secretary of the Federation of Master Builders in South Africa—an organisation representing the whole of British South Africa—at the end of a three months' visit, and before sailing for Cape Town, communicated to a representative of the "Sheffield Daily Telegraph" some interesting particulars regarding the position and prospects of the building trades in the new Union.

Before dealing with that matter, however, Mr. Brown stated that in the main object of his mission to Europe he had been entirely successful. As the result of an extended tour through Holland, Germany, and Belgium, he had completed an arrangement whereby the respective federations of master-builders in these countries, together with, of course, the British Federation, have entered into relations with the South African Federation whereby a complete intelligence system in regard to trade and labour affairs has been established between them and it.

"We in South Africa," he added, "will be kept fully informed of every change in trade and labour conditions in the countries named, and they as to the conditions prevailing in ours." Proceeding, Mr. Brown went on to say: "Into matters political I, of course, cannot enter, beyond stating that though political policy and Parties are sharply defined, there is none of the race hatred which perusal of some of the home papers would lead one to imagine permeates the social life of South Africa.

"The measure of confidence that obtains is evidenced in the extraordinary activity in the building trades. It would be a misnomer to call it a boom, but there is a vast amount of work in hand which is being carried out on a sound and healthy basis.

"In the Transvaal alone, building operations involving an expenditure of between £3,000,000 and £4,000,000 are in progress. The most important work, of course, is the immense building in Pretoria for the administration of the South African Union. The buildings are now in course of construction, and their cost when completed will be upwards of £1,000,000.

"Then there are a museum and public library, forming another great scheme of city improvement, and involving an expenditure of £100,000. Further, a new tramway track is being laid down in Pretoria, and these operations, coupled with the erection of an electric-power station, sewage and drainage works to cost £200,000, and new car-sheds to cost £10,000, all add to the measure of building activity and employment.

"Then, in pursurance of a vigorous educational policy, you find in every town Dorp Schools being erected, ranging from buildings to accommodate a handful of pupils to the handsome Transvaal University College in Eloff Street, Johannesburg, which will cost fully £86,000.

"So far as Natal is concerned, new Law Courts are being erected at Durban at a cost of £80,000, the new University buildings at Maritzburg will cost £30,000, while a technical college at Durban will represent an expenditure of £15,000. Generally, Natal, so far as the building trade is concerned, is in a fairly prosperous condition, and I have every reason to believe that this is likely to continue.

"From Cape Colony we have very encouraging reports. The additions to the Houses of Parliament, rendered necessary by the sittings of the first Union Ministry of South Africa, have been carried out at a cost of £40,000. The work, I have just learned, will be ready in time for the opening of Parliament by the Duke of Connaught in the early part of November.

"In connection with the aggregation of buildings to which I have referred, vast quantities of steel and iron work are being incorporated, and the Germans have been, and doubtless still are, making every effort to get in. In my official capacity I am fully cognisant of Consular activity whenever there is a question of contracts being placed.

"Our own Consuls in other countries which I have visited might in this regard well take a leaf from the German book. Into the building trades they have not as yet made any serious inroads. Most of the iron and steel work in connection with the building trade is supplied from Motherwell and other centres of the industry about Glasgow.

"Though the matter does not come directly under my cognisance, I am informed that in other departments of industrial activity the Germans are pushing hard, and in view of the enormous possibilities before South Africa, it behoves British firms to be on the alert in every direction, as trade expansion under the Union Government is assured for the immediate future, and, I hope, for all time.

"Now is the time to take advantage of the turn of the tide, after the severe depression experienced during the last six or seven years throughout South Africa."

THE ROYAL SANITARY CONGRESS.

Windows.

Dr. Symons (Medical Officer of Health, Bath) had contributed some notes on "Ventilation; the open bay window, the double fan window, and the baffle plate sash window." In his absence the notes were taken as read. The author's idea was to draw attention to three devices which he had found efficient in all weathers. The open bay window is a window formed by adding a third sash to a double casement window. The third sash is hinged on to one of the half casement windows so that when the casement is open it may unite the two halves in front and prevent wind from blowing directly into the room, but the bay being open top and bottom there is free air communication with external air, even in a gale the open bay will be found to shelter the interior, but it does not furnish sufficient protection against beating rain unless the upper opening is protected above by a fan hung from the top outwards. The double fan window was devised to prevent rain from beating in at the sides. It consist of an outer fan hung from above and an inner fan hung from below, the inner fan being furnished with an efficient weather guard to carry off the rain. "The whole arrangement is better understood from drawings and models than by any further description; in actual use I have been charmed with it. No special fittings are necessary, any carpenter can make the additional sash at a cost of about twenty shillings per window. The baffle-plate sash window is not nearly so efficient as the open bay, but it is a great improvement on the Hinckes-Bird arrangement and less disfiguring. The baffle-plate is a piece of glass fitted into the outer stone frame of the window opening. The glass should be the full width of the opening about nine inches deep, and fixed either flush with or not more than two inches below the head of the window. The glass of the upper sash of the window should terminate nine inches from the top of the sash, and the inside blinds should be hung about on a level with the free margin of the glass."

Earth Closet System of Sanitation.

An interesting discussion took place on a paper by Mr. J. W. Love on the above subject, in which the author strongly advocated the dry earth system in rural districts.—Mr. Prescott (Eastbourne) considered earth closets an abomination, but Dr. Nash said he had advised his father, who lived in the country where there was no sewage system to put in three earth closets, and they had proved a perfect means of disposal. He considered if properly carried out it was an ideal system in scattered areas.—Mr. Munce (Belfast) thought earth closets ought not to be advocated unless people were taught how to use them properly.—Mr. Saxon Snell hoped the country would at some time appreciate the enormous value to the land of its sewage.—Mr. Love, in reply, said he was not advocating such a system where the water carriage was possible.

FEDERATION NEWS.

Newport, Mon.

The annual dinner of the Newport (Mon.) Master Builders' Association will be held this year on Tuesday, October 25th, at 6.30 p.m., at the King's Head Hotel, Newport. It has been customary to hold the dinner in December, but on this occasion an earlier date has been chosen, with the object of inviting, as the guest of the association, his worship the Mayor of Newport, Councillor W. M. Blackburn, who is a past-president of the association, as well as of the South Wales Building Trades Employers' Federation, and chairman of the South Wales and South Western Conciliation Boards, and member of the Council of the National Federation. Occasion will be thus taken to give tangible expression to the appreciation of the services Councillor Blackburn has rendered to the town as councillor and mayor, and to the association of which he has been a valued member for more than thirty years.

Barnsley.

The monthly meeting was held at the King's Head Hotel, Barnsley, on September 14th, Mr. E. Broley (president) occupying the chair, supported by eighteen members.

The usual routine of business having been dealt with, the question of an individual increase in members' levies towards the National reserve fund received lengthy and earnest consideration, the discussion being ultimately adjourned till next meeting.

A circular letter to architects received from the Yorkshire Federation was submitted, and after due consideration, was approved.

The president called the members' attention to the Building Trades Exhibition at Sheffield, and asked for their attendance and support.

The proposed builders' exchange scheme was considered at great length, and a general feeling prevailing that the time was not opportune for an exchange, the scheme was abandoned in its entirety.

A circular letter was read from the local Labour Exchange asking for the Federation support. The secretary was instructed to invite the local manager to address the members on this subject at the next monthly meeting. The secretary was instructed to attend the annual conference of secretaries to be held in Manchester in October next.—J. Denton, Secretary.

COMING EVENTS.

Friday, September 30th.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. W. A. Kempe, C.E., on "Railway Tunnel and Viaduct Construction," 8 p.m.

Saturday, October 1st.

Glasgow Technical College Architectural Craftsmen's Society.—Visit to the Yard of Messrs. P. and W. Anderson, 3 p.m.

Manchester Society of Architects.—Visit to Leeds. Train leaves Manchester (Victoria) at 1.35 p.m.

Monday, October 3rd.

National Association of Master House Painters and Decorators of England and Wales.—Annual Convention at Newcastle commences and continues until Friday, October 7th.

Wednesday, October 5th.

Institute of Builders, Koh-i-Noor House, Kingsway. Mr. Moritz Kahn on "American Methods as Applied to Reinforced Concrete Contracting," 4 p.m.

Thursday, October 6th.

University College, London.—Carpenters' Company's Lectures. Mr. H. V. Lanchester, F.R.I.B.A., on "Town Planning," 1st lecture, "Ideals of the Past," 6 p.m.

Friday, October 7th.

Institution of Municipal Engineers.—Annual meeting at Eastbourne. Commences 11.15 a.m, in Council Chamber at the Town Hall. Concludes on Saturday, October 8th.

Monday, October 10th.

R.I.B.A. International Town Planning Conference in London. Commences and continues until October 22nd.

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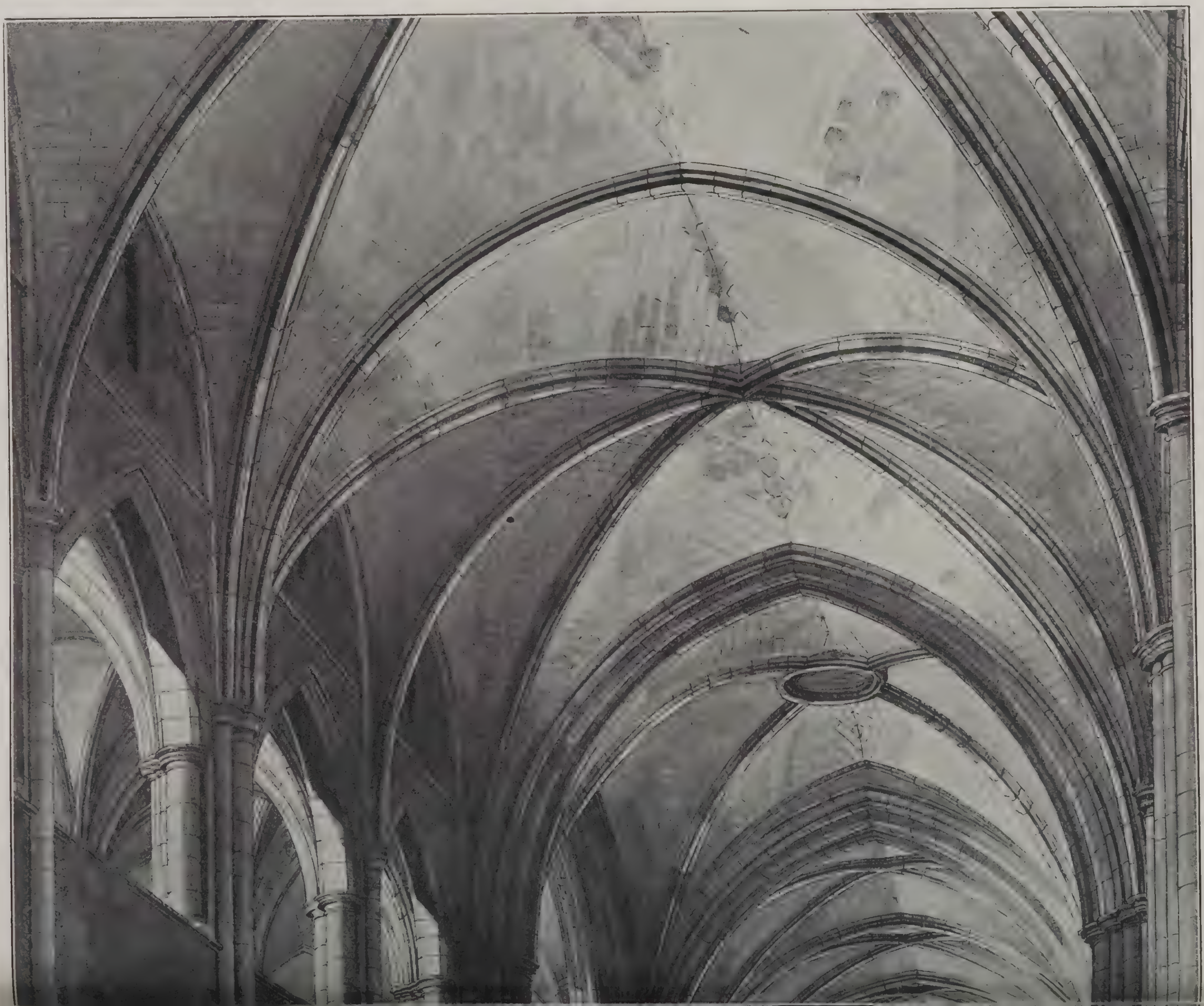
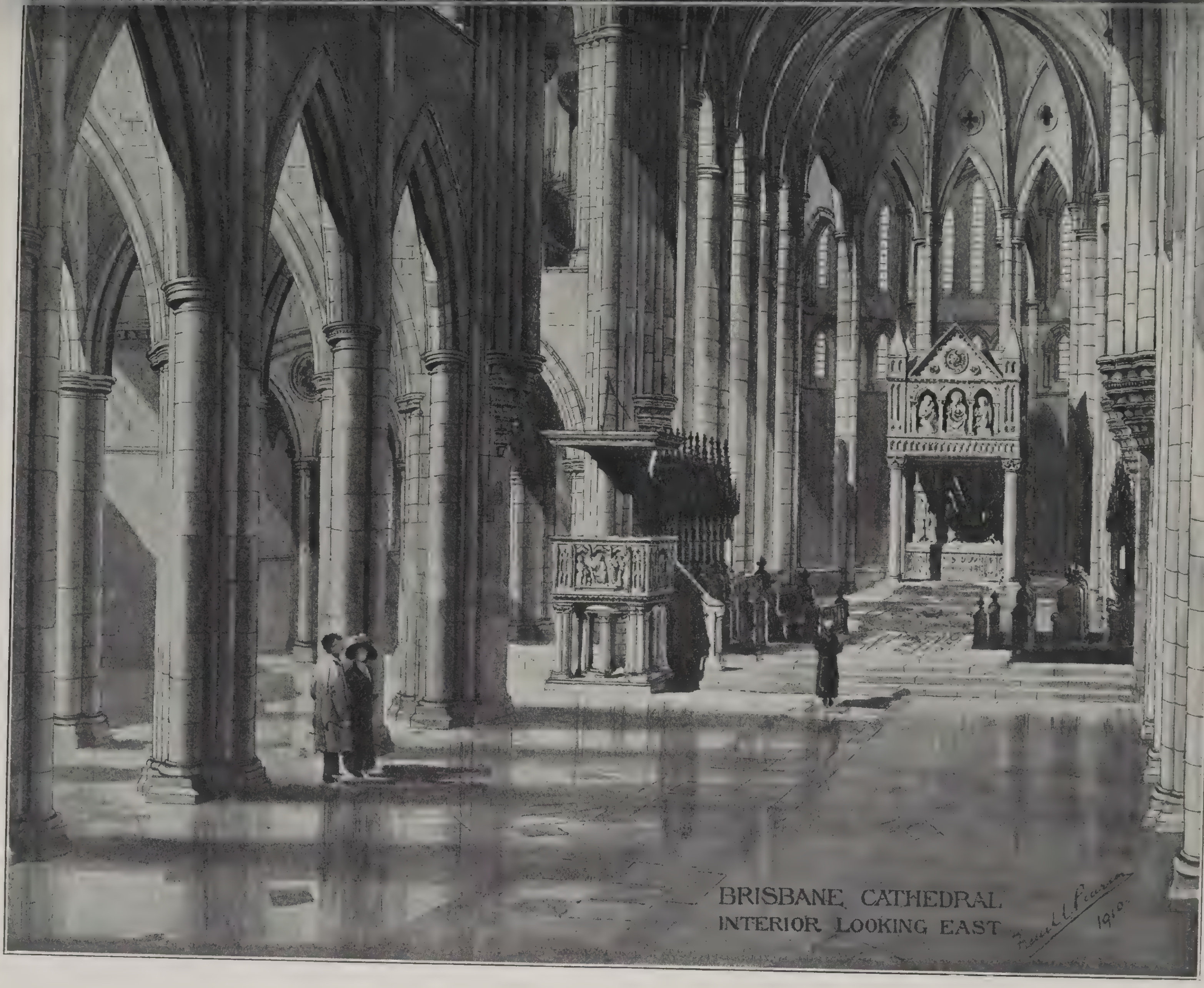
Supplement to The Architects' and Builders' Journal, Wednesday, *October 5th*, 1910.





BRISBANE CATHEDRAL: INTERIOR LOOKING EAST. FRANK L. PEARSON, F.R.I.B.A., ARCHITECT.

The length of the section of the building now being completed is 136 ft. The chancel is about 60 ft. high to the vault, and is surrounded by a lofty arcade of acutely pointed arches, which are continued round the apse. The nave is of the same height as the chancel, and has double aisles on each side, and the inner aisles are carried up to nearly level with the nave vaults. The width across nave and aisles is 98 ft., and the transept is 114 ft. across internally.

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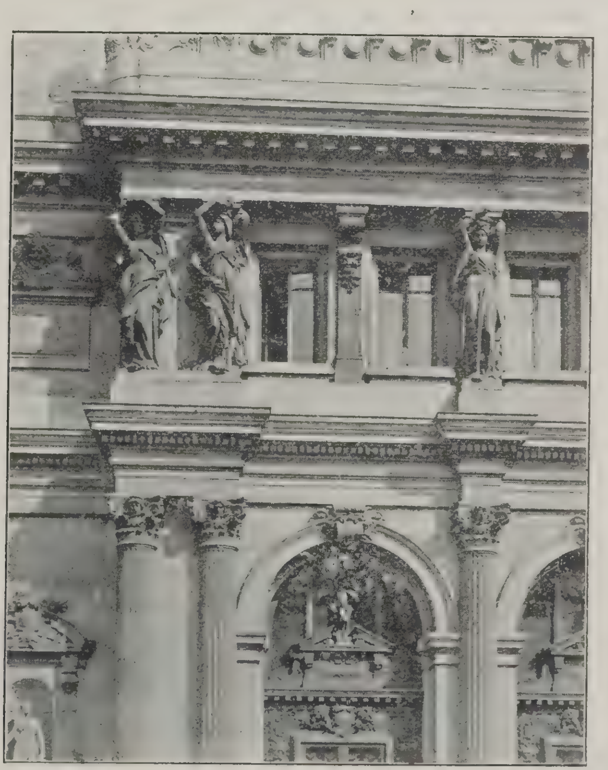
THE ARCHITECTS' &
BUILDERS' JOURNAL

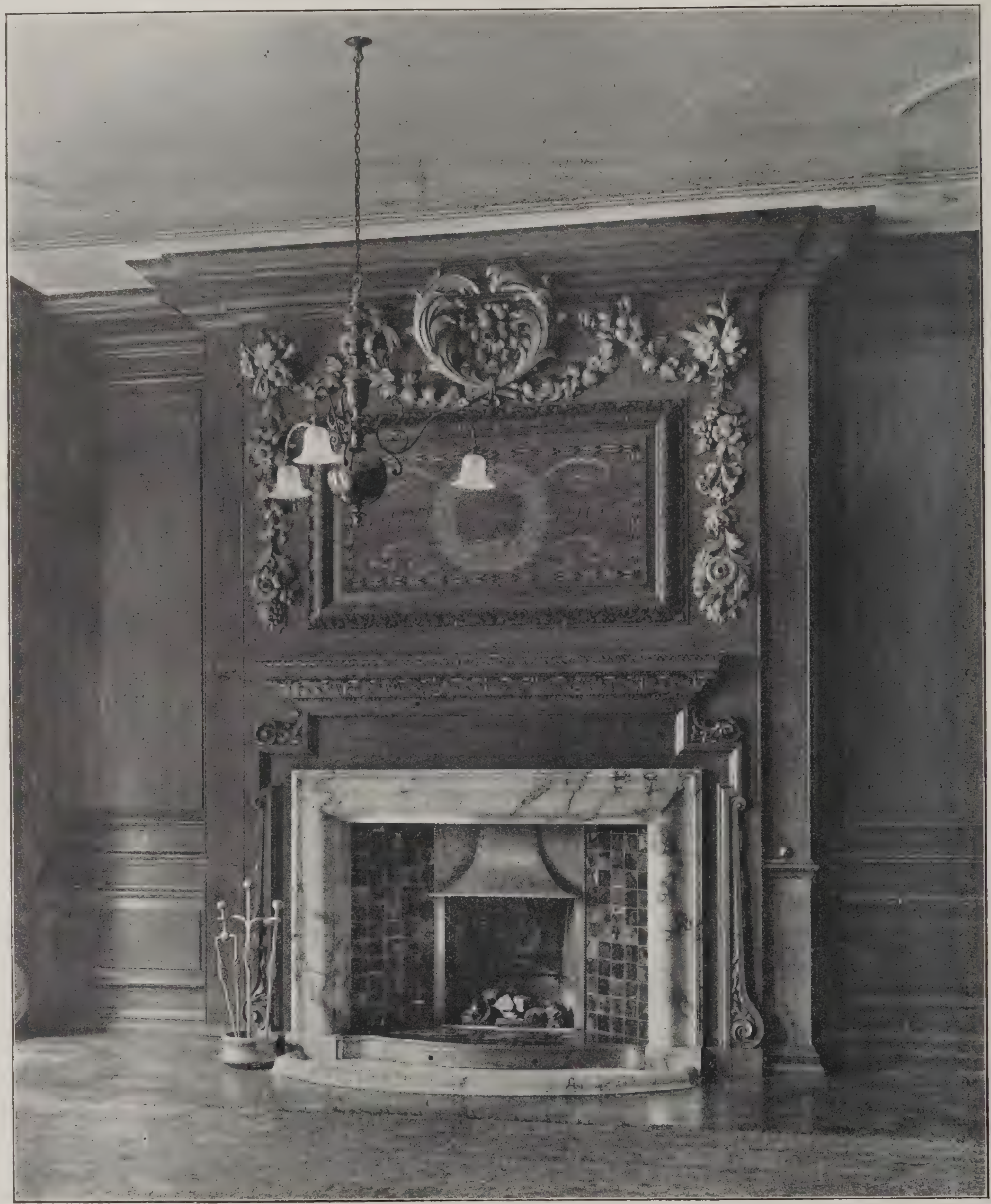
*WEDNESDAY,
OCTOBER 5th, 1910.*

Volume XXXII. No. 818.



There are six of these figures on the façade to the Place Boïeldieu. They were carved by Michel, Allar, and Peynot. A large-sized detail illustration showing two of the figures was given on p. 683 of our issue of April 27th, 1910.

CARYATIDES ON THE OPÉRA COMIQUE, PARIS.
LOUIS BERNIER, ARCHITECT.



This chimney-piece, which forms an integral part of the architectural scheme, is executed in English oak, with dark and light wood inlaid in the panel. The grate is of armour-bright iron, with white marble surround and curb, and tiled interior.

CHIMNEY-PIECE IN BOARD-ROOM, NORTH-EASTERN RAILWAY OFFICES, COWLEY STREET, WESTMINSTER.

HORACE FIELD, F.R.I.B.A., AND E. SIMMONDS, ARCHITECTS.

THE ARCHITECTS' & BUILDERS' JOURNAL.

OCTOBER 5th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 818.

Note: The List of Contents will be found on Page V of the front advertisements.

The Architect's Property in His Drawings.

IN considering in our last issue the question of copyright in architecture, and the futile provisions of the proposed new copyright Bill on that head, we purposely omitted, in order not to complicate the subject, any reference to the question of the architects' property in the drawings made by him, or made in his office, as working drawings and details for the carrying out of a building. But this subject is nevertheless very closely connected with that of copyright in architecture.

As we presume every architect knows, the Courts of Law have decided, in more than one test case, that all the drawings made by an architect in providing for the carrying out of a building, are the property of the building-owner, if the latter choose to claim them, and that he can legally demand that they should be given up to him, unless an agreement to the contrary has been made before the building is commenced. This absurd and iniquitous ruling is the result of ignorance on the part of counsel and judges as to what architecture really means, and what is the function of an architect. Their view evidently is that an architect is paid to make drawings of a building, and that in claiming to retain the drawings he is depriving the client of what the latter has paid for.

This legal position is so absolutely opposed to the real facts of the case, and so unjust in itself, that it is surprising that the architectural profession have been content to sit down under it without making a definite effort to get the law altered. Individual protests there have been, and very strong ones, but the Institute of Architects has made no serious attempt to deal with the subject, and has been very remiss in not doing so. In the light of common sense and common equity the case is as clear as possible. An architect is engaged to plan and oversee the erection of a building. His client in most cases wants to have an idea what the building will be like, before ordering its commencement, and sketches are made for him, which he probably does not understand, but which give him a kind of vague satisfaction. Under existing practice an estimate has to be made of the cost of the building, and a contract entered into for carrying it out for an agreed sum, and for this purpose complete working drawings have to be made. But the carrying out of a building under a contract price is no necessary part of architecture; in the days when the finest architecture was produced there was no such system. As the architect cannot actually erect the building with his own hands, he has to direct others to do it, and the working drawings come into their second use as directions to the foreman and workmen. For a similar reason full-size details are furnished by the architect for mouldings and other features, that his idea in these may be fully understood and carried out. But all these working drawings and detail drawings are only means to an end. In regard to the detail drawings, the client often knows nothing of their existence. They are the architect's means of directing the builders. What the architect is engaged for is to produce a building, and this is his means of doing it. When the building is completed the client has got what he paid for. Then the law encourages him to say—"You have produced me a building, but that is not enough; you must now also hand over to me all the drawings which you made in order to produce it." Can anything be more absurd?

The injury to the architect is two-fold. In the first place he gives up, for the fee for a single building, drawings which acquaint their possessor with his manner of working, with secrets of how to do things which are his own, perhaps the result of many years' experience, and which are now to become the permanent property of his client who has paid him for producing one building, and nothing more. In the second place, the client who has paid for the one building has now the means of carrying out another without troubling the architect again, merely by putting these drawings into the hands of a builder to carry out. An efficient copyright Bill might prevent this; the one now drafted will not. And the connection of the subject with that of copyright in architecture is this: that if the law allows the building-owner to demand possession of the architect's drawings and hold them as his own property, he then has an additional argument, or excuse for the liberty to reproduce a copy of the original building. He will say, "These drawings by law are my property; may I not do what I will with mine own? I have, according to law, paid for them; what is their value to me if I may not make use of them?"

There is no similar injustice done to any other class of artist. A sculptor or a painter, if commissioned to produce a statue or a picture, always makes studies and sketches for them, but no one ever demands that he should hand over his studies and sketches, along with the completed work, to his patron. Why is an architect to be treated differently?

It is a curious anomaly, moreover, that many architects themselves, who would object to handing over to the client their drawings for the completed building, are willing to hand over the completed drawings if the carrying out of the building is abandoned, after the client has paid the proportion of the commission due for drawings without superintendence. They argue, if the client in that case does not have the drawings he gets nothing for his money. Why should he get anything? It is his own fault, for not knowing his own mind. He has taken up a great deal of the architect's time and ability to no purpose; he is bound to pay for that. If a man had intended to go into an important law suit, had consulted a solicitor and retained and consulted counsel, and then abandoned the case, he would have to pay the barrister's and solicitor's fees, and have nothing for his money in that case either. Lawyers would see nothing unfair in that; their client should not have engaged them unless he intended to go into court. But when it is the case of an architect, and the client has changed his mind, then it is the architect who is to suffer and not the client; and architects are weak enough to endorse this position. We may go further and say that if this principle is to be admitted, a man of unscrupulous character has only to commission an architect to make drawings,

"The Practical Exemplar of Architecture."

The first and second series of "The Practical Exemplar of Architecture" have been so widely and warmly welcomed as an important and very effectual and practical means of studying the work of the masters in architecture, that the announcement of the publication of a Third Series is regarded with more than ordinary interest and attention. The characteristics of practicality and completeness which distinguish the two series already published are fully maintained in the new issue. Modern work as well as old work is again represented in many beautiful examples, of which in each case the clever and careful draughtsmanship of measured details is accompanied by excellent photographs, rendering the work throughout of the greatest possible value to the practising architect, as well as to the student whose main concern with them is to take full advantage of their educational and formative value. With this Third Series the publishers present an Annotated Index and complete list of the plates comprised in all three portfolios, which shows at a glance in which portfolio any particular plate appears. Each portfolio (Series I., II., and III.) contains more than 100 plates, and the entire issue has been produced under the supervision of Mr. Mervyn E. Macartney, B.A., F.R.I.B.A., F.S.A., Editor of the "Architectural Review."

The Gardens of Great Tangley Manor.

Illustrations of gardens old and new being one of the features recently added to "The Architectural Review," we find reproduced in the September issue some delightful photographs of the gardens at Great Tangley Manor, near Guildford, Surrey. This is an Elizabethan house, and the charm of its setting is due in large measure to the unbroken expanses of green turf, here enclosed within a walled garden, there extending around fruit trees and flowering shrubs, and again rolling along by the moat that winds its way lazily around. The house, after having fallen into a forlorn condition, was overhauled in the eighties under the direction of Philip Webb. It was according to his design that a timber bridge with covered way over the moat was erected, as well as a timber screen in the walled garden on the south side of the house. "The moat is crossed at several points by little bridges, and these lead us to other parts of the garden—to the broad lawns, to the pond on one side which supplies the moat, to the little rock garden close by, to the pergola overspread with vine and clematis, to the rose garden, the kitchen garden, and back to the entrance bridge by way of a pleached alley of limes, where the light filters through the leaves in a glory of green effulgence; the whole effect simple yet exquisite, leaving on one's mind an impression of sweetest character."

Current architecture in the October issue is represented by a large house at Colorado Springs by Messrs. T. MacLaren and C. E. Thomas, astonishing as being more or less a replica of the Grand Trianon at Versailles; and by an excellent new building in Mortimer Street, London, W., in which the architects (Messrs. William and Edward Hunt) have produced a very scholarly result on the lines of Classic work, as embodied in American and French architecture, and, to some degree, in the work of men like Cockerell.

The series of "Historical Town Houses" is continued by an excellently illustrated article on Newcastle House, Lincoln's Inn Fields. This is a late seventeenth century mansion designed by Captain Wynne, who was a pupil of Sir Balthazar Gerbier—a name, by the way, the most curious in the history of English architecture.

A further collection of details of Cambridge colleges is published, comprising chimneys, turrets, and bay windows, and an article on a minor City church by Wren—St. Benet's, Paul's Wharf—is illustrated by a careful set of measured drawings, and a detail photograph of the finely proportioned tower and cupola.

Details of the porch and bay window at Ragdale Old Hall, Leicestershire, are included in "The Practical Exemplar," and Mr. Robert W. Carden contributes some notes on the life of Giorgio Vasari; while, in the "Town Planning and Housing Supplement," is an article on "City Squares and Traffic Centres," by Mr. W. R. Davidge, and an additional article by Mr. Thomas Adams on the plan of Edinburgh, showing how the excellent scheme for the development of the area east of Leith Walk, prepared by Playfair in the early part of the nineteenth century, has been ruined by the incoming of the railway.

The Safety of S. Sophia.

Signor Luigi Marangoni, the architect and engineer who has been entrusted with the task of strengthening and restoring the Basilica of St. Mark, has returned from Constantinople, where he went at the request of the Ottoman Government to study the condition of the Mosque of S. Sophia. He has come to the conclusion that the dangers threatening it are more static than geological; he does not consider them as grave as was supposed, and believes that certain radical restoration work, if promptly and thoroughly executed, will guarantee its preservation. Signor Marangoni will present reports to both the Ottoman and the Italian Governments.

Workmen's Compensation Claims.

Builders will read with peculiar interest the report that, in the Clerkenwell County Court last week, during the hearing of claims under the Workmen's Compensation Act, which occupied the Court for a considerable part of the day, Judge Edge remarked that he would have to communicate with the Lord Chancellor about such cases. His colleague, Judge Bray, and he were very anxious to take workmen's compensation cases, as far as they could, but, unfortunately, from time to time they found themselves involved in long inquiries. In one case he had to undertake an inquiry which lasted three and a half days, and another case, which came before his colleague, lasted two and a half days. Such hearings interfered greatly with the ordinary work of the Court. A jury case in the list had to be adjourned for want of time. These occurrences, which reflect but little credit on the framers of the Act, who ought to have foreseen that existing machinery would be inadequate to the new demands, strengthen the hands of those builders who are endeavouring to promote special means of dealing with compensation claims, so that either litigation may be altogether avoided, or its processes considerably shortened. The public inconvenience represented by Judge Edge must sooner or later result in the establishment of special courts; and when these are being arranged it may be possible to introduce some simplified process of arbitration.

"Tongues in Trees."

Street trees, like church bells, divide public opinion with extraordinary persistency. One correspondent writes from Camberwell to protest against "the reckless and indiscriminate maiming" of plane trees; another writes to the Kensington Borough Council to complain of the obstruction of light and air caused by plane trees on the footway. The Camberwell gentleman, and he of Kensington, may indeed be said to stand literally at opposite poles on this question; for the former declares that "a section of the Borough Council persisted, against the remonstrances of many ratepayers and residents, in turning the trees, which had in the previous summer and autumn furnished a glorious canopy of shade all round the park, into bare and ugly poles and clothes-props." The town-planning committees of the near future will have much ado in reconciling these divergencies between the pasionate haters and the equally passionate lovers of trees. It has been suggested that an expert in arboriculture should be included on these committees. Certainly he might be rightly entrusted with the care of their health, and prevent their untimely degeneration into poles and props; but their education and training, so to speak, should certainly be supervised by an architect, who would be respected as a judicial moderator between rival extremists.

ST. GEORGE'S HALL, LIVERPOOL.

It was announced, in the "Liverpool Post" of Saturday, September 24th, that the Finance Committee of Liverpool Corporation had sanctioned the placing of a memorial to King Edward VII. at the south front of St. George's Hall, facing the top of St. John's Lane, and it was resolved unanimously to offer to Mr. Goscombe John—the sculptor of the war memorial in St. John's Gardens—the commission for a bronze equestrian statue, with two emblematical figures, to be finished in two years' time. The proposal met immediately with considerable opposition. and below we print the opinions upon it that have been expressed by three eminent architects. We feel justified in devoting so much space to the matter not only because the St. George's Hall is one of the most noteworthy buildings in the kingdom, but, because, as Professor Reilly points out, an important principle is involved—namely, whether it is justifiable to modify a complete work of art.]

The Scheme. "Mr. Goscombe John," our Liverpool contemporary states, "was prospecting in Liverpool on September 2nd, and four days later a rough plaster of Paris miniature of his proposed design reached the Town Hall and was pronounced to be 'the very thing.' The scheme involves the making of a deep breach in the embankment and wall which now shut off the nominal front of the hall, with its magnificent pediment, columns, and costly bronze door, from the street. The statue will be erected practically on the street level in a bay to be made in the wall, and will be approached through two gates in an iron railing. On either side will be the figures of 'Peace' and 'Concord,' and a flight of steps leading to the stony highlands above. Liverpool people have every confidence that Mr. John will produce 'a thing of beauty,' and if at the same time the gloomy severity of the south-end of the great hall can be relieved, so much the better." This announcement was promptly followed by criticisms from Prof. S. D. Adshead and Prof. C. H. Reilly, both of Liverpool University, and from Mr. Huon A. Matear, architect of the new Liverpool Cotton Exchange, who forwarded an alternative scheme.

Mr. Huon A. Matear. Mr. Matear writes: "Before finally adopting the position for the proposed memorial to the late King Edward, it appears to me that the matter should receive the most careful consideration from an architectural point of view, and opinions obtained from architects of the highest standing, who would, no doubt, gladly give their advice on a question of so vital importance.

"One of the first principles in designing a building is to contrive as far as possible to have every part converging from the base to the highest central feature. The design is opposed to this principle, as it brings the eye back to a central feature on the base line. The arrangement of the steps diverging on either side of the statue repeat the sloping lines of the tympanum in a reverse form.

"I propose that the present south wall be lowered by some six or seven feet, and the flight of steps leading to the Hall be continued down to a walk some four feet in width, and the present iron railing be refixed at this new level.

"The flanking angles to wall to form the lower bases for the statues and pedestals—these latter should be on the same horizontal plane as those at present existing. The statues would thus be seen to better advantage than in the proposed scheme, and become really architectural adjuncts. This design would enable a statue to be erected to Queen Alexandra, who has been inseparably connected with the late King Edward for so many years, and is so deeply seated in the affections of the people."

Prof. S. D. Adshead. Prof. Adshead writes: "At a time when so much uncertainty of judgment prevails as to the appropriate presentation of sculpture, it augurs well that a suggestion is forthcoming which receives apparent universal approval. Under the circumstances, therefore, it is with regret that I feel it incumbent upon me to be numbered amongst those to cast the first stone. I feel convinced, however, that when the excitement of the moment has subsided, when an expert architectural expression of opinion is forthcoming, and when the general public have been made acquainted with all that this supposed improvement involves, that it will not meet with the universal approval which would seem to subsist.

"My objection to Mr. Goscombe John's suggestion is that it entirely upsets the main lines of the composition of St. George's Hall. To break the base, and so disturb the very foundation of Elmes's masterpiece, is in itself a most serious undertaking.

"Not the least successful part of Elmes's design is the platform or base on which he erects his hall, and the design of the one is intimately connected with the other. Everything leads up to Cockerell's pediment. Commencing with a solid base, the intention of the whole design of the portico was that interest and delicacy should come to a climax in the pediment.

"The worst feature of Mr. Goscombe John's suggestion lies in the introduction of the oblique lines of the stairs, which do more to destroy the stability of the pediment than any other form.

"Where possible, a classic portico is always approached by a flight of stairs, but it is universally recognised by architects of classic thought that no staircase in so important a position is sufficiently imposing unless the approach is direct and at least as wide as the portico itself. Elmes recognised this, and, not having space to introduce a stair in this way, decided that any other means of approach would be a mean alternative not for a moment to be entertained, and so started, as it were, off a platform on made ground. The ways of approaching a classic portico are few, and the classic type of mind, as we find it so powerfully evidenced in Elmes, cannot submit to side issues or entrances by back stairs. The classic mind always demands the simple, direct thing or nothing at all. I think I am right in asserting that a search over all the important porticos of the world will in no case bring to light a single work where there is a direct approach by a secondary kind of stair.

"There are plenty of available spaces for sculpture round about St. George's Hall, but I am bound to admit that I would hardly regard any of them as being suitable for a memorial to the late King.

"Glancing at Mr. Goscombe John's war memorial on the west side, we should recognise that Mr. Goscombe John stands for one of our cleverest exponents of realistic art, a type of expression which, by the way, is entirely opposed to the principles of Cockerell and Elmes. Cannot a site be found somewhere in an open space where Mr. Goscombe John's work would stand independently of such a surround?"

Prof. C. H. Reilly. Prof C. H. Reilly took the earliest opportunity "to endorse every word of the criticism my colleague, Professor Adshead, has sent you.

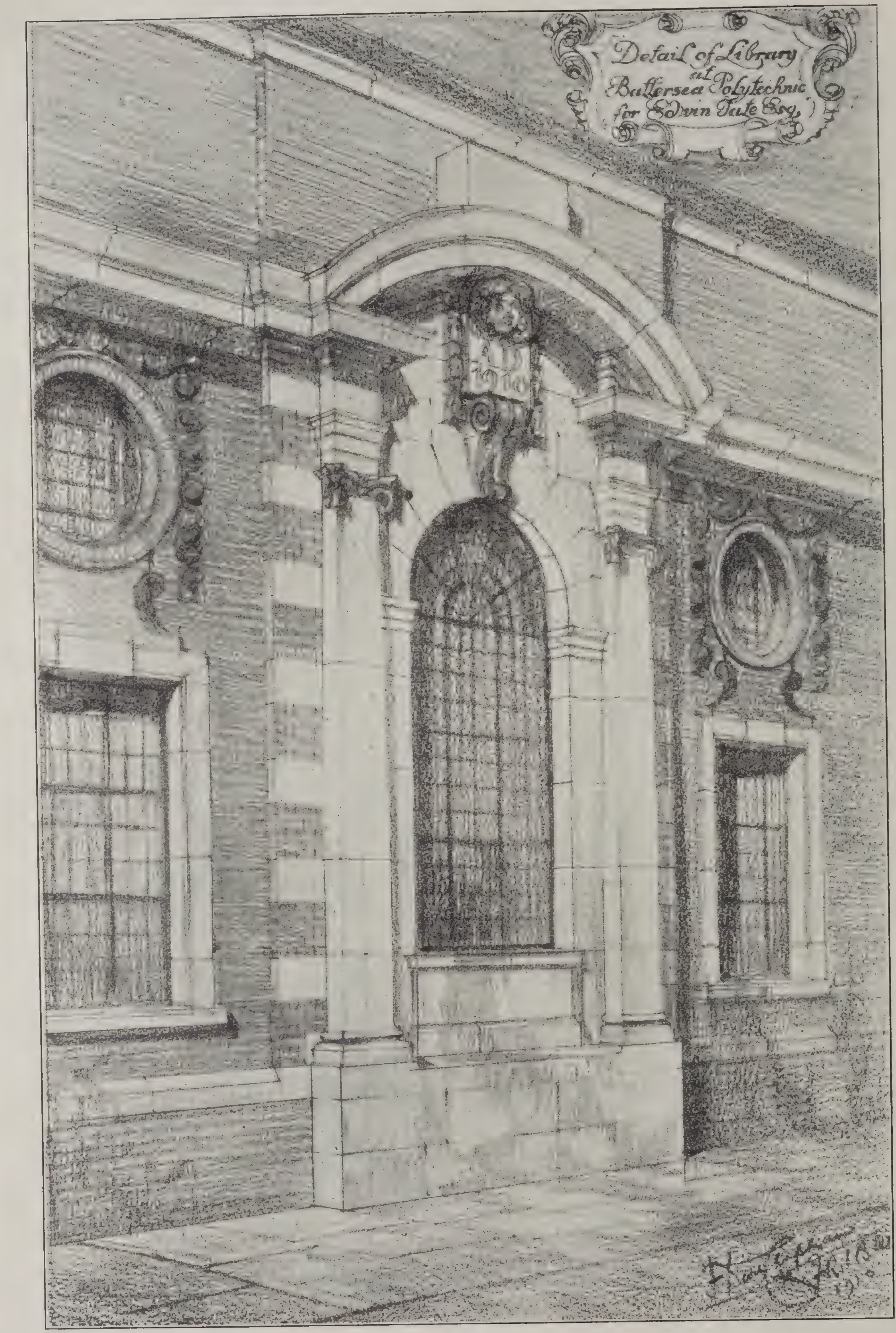
"The proposal to cut into the base of St. George's Hall is of a piece with that recently made for raising the Town Hall, regardless alike of the proportions of the building and of the architect's conception. Imagine the outcry if it were suggested to add to, or to alter, a Velasquez or a Rembrandt; yet St. George's Hall externally is as perfect and complete a work of art as any of the great paintings. We may not in Liverpool always have been aware . . . that St. George's Hall is the finest classical building in Europe. It is a possession any city would be proud of—one to be protected and cherished at all hazards.

"Even if it could be shown that such a scheme as that suggested were part of the architect's original proposal, changed on mature thought—and I have a print showing subsidiary staircases, but to a very different scale, and with pedestals and statues at the two ends instead of in the centre—I personally should be very loth to see anyone alter the finished work of such artists as Cockerell and Elmes; but without such evidence, for us in a weaker age, when the spirit of classic art is so little understood, to lay hands upon our greatest monumental building is little short of sacrilege.

"Passing, however, from general considerations to the detail of the scheme, the proposal seems to me to amount to a clever attempt on the part of the sculptor to make the whole building subsidiary to a single statue. . . . He would break up the great cliff-like plinth upon which the building stands for three little pinnacles of statuary. The great scale of the portico, the sense of repose and remoteness from the bustle of the street which this immense base gives to the building, is entirely destroyed. Instead of a wall of strongly articulated masonry, we have a couple of paltry staircases and some ornamental iron gates, and the whole scale—the noblest attribute of the hall—destroyed.

"I can only hope that the proposal has not gone further than a preliminary suggestion. Otherwise I feel sure that it will raise, not only among architects, but among all who sincerely care for these things, a storm of protest compared to which that against the mosaics in St. Paul's Cathedral was child's play."

Mr. Goscombe John has already provided Liverpool with a magnificent example of his work. He executed the fine war memorial of the Liverpool Regiment which stands in St. John's Garden, and is acknowledged to be one of the best specimens of sculptural art in the country.


Detail of Library at Battersea Polytechnic for Edwin Tate Esq.
1910

The drawing from which this illustration was reproduced, showing the centre bay of the main front, was exhibited at this year's Royal Academy. The carving was executed by Mr. Gilbert Seale.

LIBRARY, BATTERSEA POLYTECHNIC: DETAIL. F. DARE CLAPHAM, F.R.I.B.A., ARCHITECT.

LIBRARY, BATTERSEA POLYTECHNIC.

This, an addition to the Battersea Polytechnic, has been erected at the South-West corner of the site facing the Battersea Park Road, and adjoining the present reading room. The whole cost of the building and its equipment has been defrayed by Mr. Edwin Tate, the first chairman of the Governing Body. The opening ceremony will be performed by His Grace the Archbishop of Canterbury on October 21st. Externally the building is faced with Lawrence's hand-made red bricks, with Monk's Park stone dressings, and the roof is covered with tiles. Internally the whole of the panelling and finishings are in Austrian wainscot oak, and the floor is laid with teak blocks. The coved ceiling is in enriched fibrous plaster. At the west end of the room is a stained glass window by Messrs. Shrigley and Hunt, containing a seated female figure of "Literature." A gallery runs round three sides of the room, and over the vestibule is a small book store. Provision has been made to accommodate 15,000 volumes. The whole of the external and internal carving has been executed by Mr. Gilbert Seale. The contractors were Messrs. Holloway Bros. (London), Ltd. Fibrous plaster, Mr. Gilbert Seale, Camberwell. Lead glazing, Messrs. Wainwright and Waring, Chiswick. Wrought-iron grilles, Messrs. Spittal and Clark, London. Casements, Crittal Manufacturing Co., Braintree. Electric light fittings, Messrs. Omar Albrow and Co., Tooting. Heating and electric light, Messrs. Cash and Co., Westminster. Furniture, Messrs. Hampton and Sons, London, and Libraco, Ltd., London. The drawing, which shows the centre bay of the main front, was exhibited at this year's Royal Academy. The architect was Mr. F. Dare Clapham, F.R.I.B.A.

THE INTERNATIONAL TOWN PLANNING EXHIBITION.

The Exhibition, which is to be so important an event in connection with the R.I.B.A. Town Planning Conference, will, it is stated in the R.I.B.A. Journal, include upwards of 1,000 plans, and many models illustrating the growth of cities ancient and modern; types of town planning; the development of suburbs, garden cities, and villages; the architectural treatment of streets and places; and the laying out of parks, open spaces, and playing fields. The Royal Academy has generously placed its Galleries at the disposal of the Institute for the purpose of the Exhibition, which will remain open after the close of the Conference until the 22nd October.

The greater number of the chief exhibits shown at the Town Planning Exhibition held in Berlin in June last, and attended by over 65,000 persons, are being sent over for this Exhibition. In addition to these, a large number of new exhibits from England, the Colonies, America, France, and other countries will be included in the exhibition, which will be one of the most comprehensive exhibitions dealing with the subject of town planning and city development ever held, and will effectively illustrate, by examples taken from all parts of the world and many periods, the whole development of town planning from the earliest times.

The Prefect of the Seine has sent a most valuable series of plans, both ancient and modern, illustrating the development of the city of Paris, showing the great town-planning works carried out at different periods, including those under the supervision of Baron Haussmann, and also showing the works now contemplated to complete the schemes prepared by Haussmann, and to carry out other necessary improvements, the whole forming part of a great scheme for the improvement of the city of Paris, for which the City Council have sanctioned a total expenditure approaching 36 millions sterling.

Nancy, Havre, and other French towns will be represented by exhibits, and plans will be shown of the great parks—Versailles, St. Germain, etc.—so characteristic of eighteenth-century France.

Germany, as the leading nation in modern town-planning work, will be exceptionally well represented. The premiated designs in the great competition recently held for the planning of Greater Berlin are of unique interest, especially to all those connected with London and our greater cities, as these schemes deal comprehensively with the central traffic problems connected with the development of a great city, as well as the development of the external area.

The cities of Munich, Cologne, Düsseldorf, Nuremberg, and many other growing industrial towns are sending plans, sketches, and models illustrating the way in which they are dealing with the rapid extension of their urban districts, and with the difficult housing problems accompanying such growth. The industrial town of Essen the seat of the famous Krupp Works, one of the largest industrial undertakings in the world, has made exceptional efforts to house its population in a healthy manner, and to break away from the block system characteristic of so much German housing. It is hoped that Messrs. Krupp will also exhibit models of some of their industrial colonies.

The city of Ulm, which is famous in Germany for its traditional adherence to the cottage type of dwelling, owing to the far-sighted policy of Oberbürgermeister Wagner in purchasing and dealing with sufficient area of land to control the character of the city's development, is sending a very full exhibit illustrating its methods of work. The city of Frankfurt will show its methods of dealing with the opening out of old congested areas, and of executing town-planning schemes by means of rearranging the boundaries of ownership, which in many German districts are a great difficulty owing to the minute sub-division of land.

From Sweden and other Scandinavian countries there will be a most interesting exhibit of plans and models illustrating how the growing towns, by purchasing land, by building houses and facilitating building of houses by various associations, are enabled, in conjunction with successful town planning, to regulate wisely their development and put a check on excessive land speculation.

The city of Rome has sent valuable plans illustrating the development of that most interesting of all cities at different periods, and also showing the present proposals for improving the city. The city of Milan sends an example of an Italian garden city, and other interesting exhibits

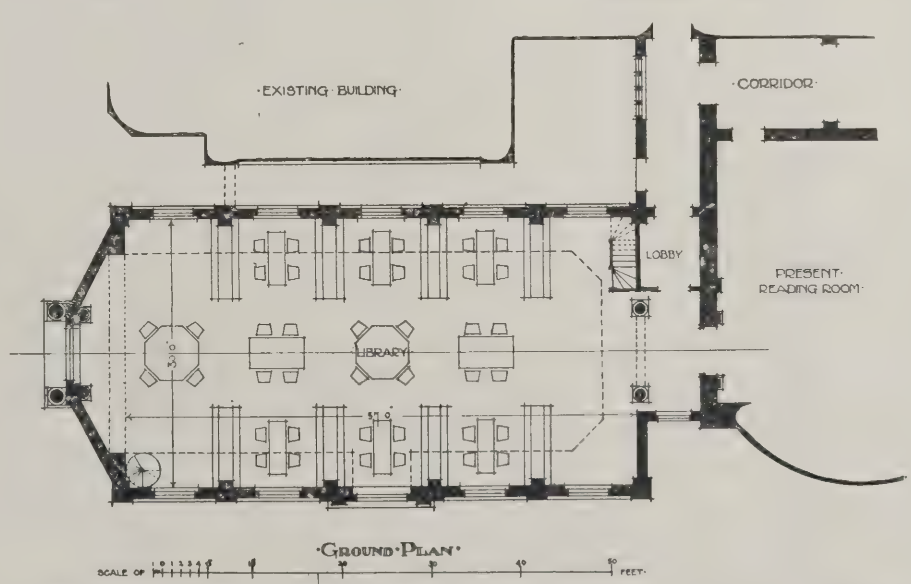
America's work will also be well represented. From Chicago has come the great series of beautiful drawings made by Mr. Burnham for the improvement and development of that thriving commercial centre. These drawings are of unique interest, and display not only most beautiful draughtsmanship, but one of the most comprehensive schemes for dealing in an entirely modern way with the development of a great city, its harbours, its railways, its parks, and its buildings. Other American civic and educational centres will be illustrated, as well as the system of parks and parkways which are becoming such an important feature in modern city development across the water.

Among other exhibits which may be mentioned are interesting plans and views of Khartoum, Omdurman, Kingston (Jamaica), and other colonial towns. It is expected to give particulars of the site of the new Australian Commonwealth capital.

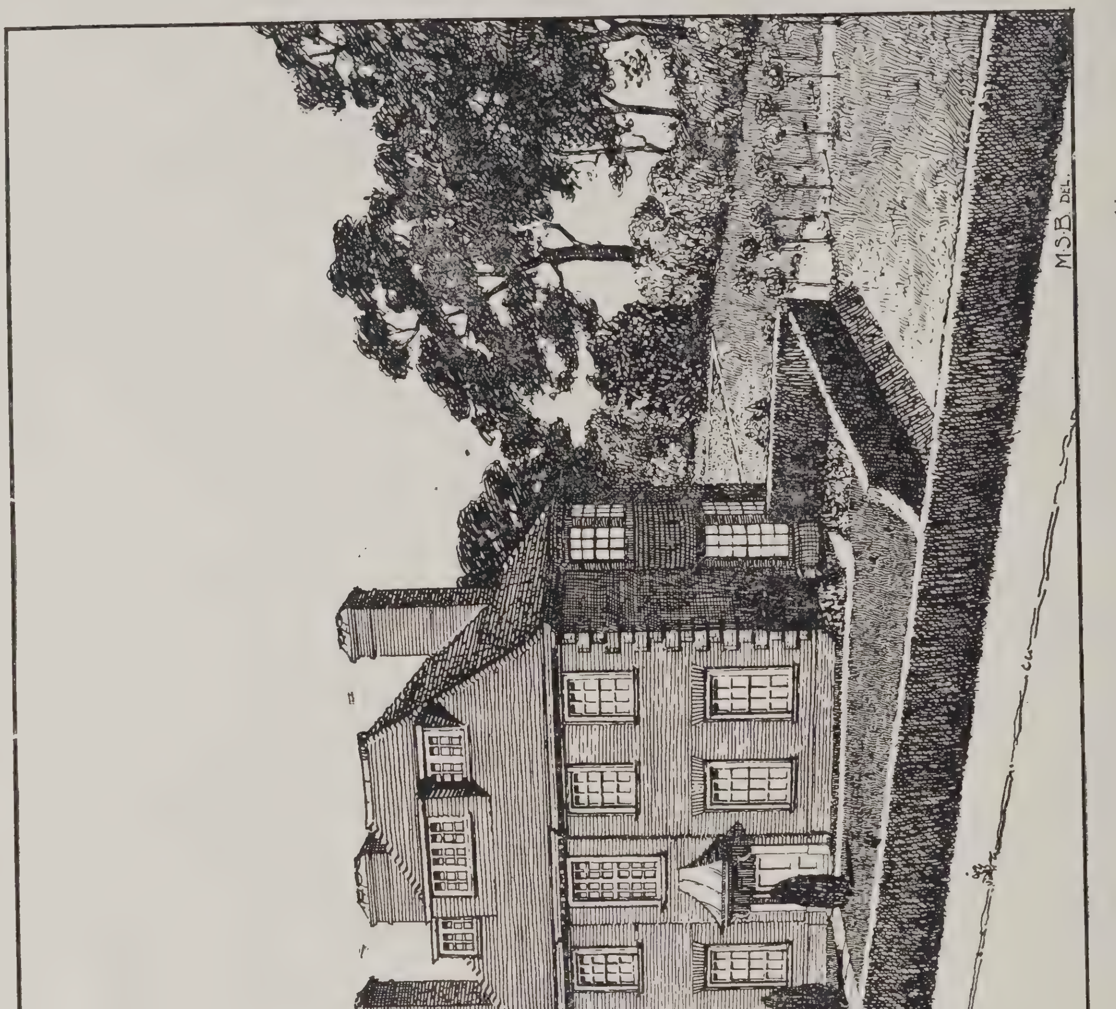
From nearer home, Edinburgh sends a valuable collection of original drawings illustrating one of the few examples of comprehensive town planning that we have in Great Britain; while Professor Geddes is arranging a special series of drawings and models illustrating the development of Edinburgh, and the method of conducting the city survey, so important a preliminary stage to all town-planning work.

The modern garden city and suburb development will be fully illustrated by some beautiful models illustrating Continental examples, and both models and

(*Continued on page 343.*)



LIBRARY, BATTERSEA POLYTECHNIC: GROUND PLAN. F. DARE CLAPHAM, F.R.I.B.A., ARCHITECT.



The walls externally are of Tring bricks, with dressings and plinths of Osta bricks, the roof being of red sand-faced tiles, and the woodwork throughout painted white.

HOUSE AT MILL HILL. MARTIN SHAW BRIGGS, A.R.I.B.A., ARCHITECT.

drawings fully illustrating the English garden city at Letchworth, the garden suburbs of Hampstead, Ealing, Harborne, Bournville, Port Sunlight, and others, while the Co-partnership Tenants' garden suburbs and villages will be well represented.

In addition to these drawings many interesting examples of maps and diagrams arranged to illustrate graphically the vital statistics of population, health, traffic, and other matters essential to a proper understanding of the problem of city development will be shown; and last, but by no means least in importance, the architectural aspect of the whole problem of town planning and city building will be fully dealt with, and some interesting examples will be shown illustrating various methods adopted by Continental cities to encourage good architecture and restrain the building of bad examples.

The fine collections brought together by Dr. Hegemann for the Berlin and Düsseldorf Exhibitions have made it possible at this time to gather together such a comprehensive Exhibition as will afford a unique opportunity for studying and comparing the best town-planning work that has been carried out in the past or is being now done. The Council of the Royal Institute hopes that all who are interested in the subject will take advantage of the opportunity thus afforded.

HOUSE AT MILL HILL.

This is a detached house in the Georgian style, standing on the edge of the school park in Wills Grove, only a few hundred yards above Winterstoke Gardens. It occupies an open site, with fine views of many miles in three directions, and overlooks the school property. Here the owner has the advantage of complete security against unsatisfactory building developments in the future, and a sufficiency of fresh air and sunshine, as the ground is 400 feet above sea-level. A grass forecourt with a formal hedge and flagged path lies in front, a tennis lawn behind, and overlooking the latter a wide terrace wall 150 feet long with a herbaceous border 8ft. wide running its full length. The walls externally are of Tring bricks, with dressings and plinth of Osta bricks, the roof of red sand-faced tiles, and the woodwork throughout painted white. The builders are Messrs. Wm. Moss and Sons, and the architect Mr. Martin S. Briggs.

PICTURE EXHIBITIONS.

The Society of Portrait Painters.

In selecting the gallery of the Society of Painters in Watercolours for its exhibition this year, the Society of Portrait Painters has been under a rather happy necessity of reducing the proportions of its exhibition, since its larger exhibitions generally included a good deal of rather uninteresting work, and there was a too evident desire to fill the walls somehow. Even in the present case, one of the largest pictures, Mr. Solomon's family group, is one formerly exhibited at the Royal Academy; and there are others which we imagine are not exhibited for the first time. The reason for the existence of the Society is not very obvious; for all general exhibitions contain a considerable proportion—some may think too large a proportion—of portraits; nor does the Society appear to illustrate any special school or point of view in regard to portrait painting.

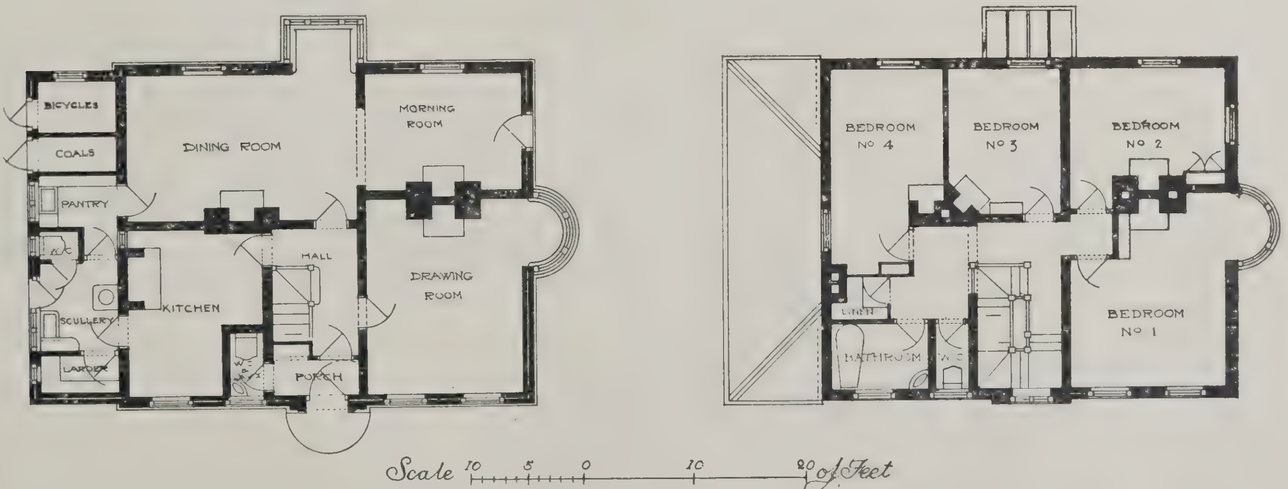
There are some good works; among them Mr. Walton's forcible and broadly painted half-length of Sir William Crookes. In the presentation portrait of Colonel Smith Grant, Mr. Lorimer has made a success of the difficult subject of a military costume portrait, toning down the scarlet uniform to its due place in the colour scheme. His other, of Mr. W. Montgomery, is "presentation portrait" all over. It is curious how the mere fact of a portrait being for presentation seems to induce a commonplace and prosaic style, as the rooms of the Royal Academy abundantly testify every year. Mr. Laver's two portraits of ladies are fine examples of his favourite treatment of a portrait, in a pervading dark dress with a few small bits of bright colour coming out against the dark. In the half-length of Mrs. Ralph Peto, excellent both in composition and colour, the manner in which the blue of the feather on the hat is sufficiently discerned without in the least obtruding on the general scheme, is an excellent point. Mr. Loudan's "Mrs. Stanley Barry" is fine both in colour and line, though the right hand seems a little neglected; but we fancy this also has been seen before at the Academy or elsewhere. Mr. Herbert Olivier has a masterful-looking full length of Mrs. Ford holding a double-bass upright before her, the bow depending from one hand. This, of course, makes an effective addition to the picture. The painting of the head seems rather hard and unsympathetic, but perhaps we may expect this kind of expression from a lady who has the energy to handle so formidable an instrument. Mr. Melton Fisher's large full-length of a lady has a certain power about it, but is somewhat stiff and ungainly in position; the sitter (if we may so describe a standing figure) does not seem to have known quite what to do with her hands, a point in which one would think the artist might have assisted her. Mr. Strang's group, "The Violinist," looks better and more important here than it did in the Academy, being in a more central position and a better light. The portrait of the violinist is keen and expressive, but the group does not hang together. Why is the lady accompanist playing when the violinist is not, and what is she laughing at? There is no obvious explanation, and it makes the work look rather like a joke. Mr. Hudson's half-length of a lady, called "Study in Blue and Red," is a pleasing composition.

Generally speaking, the exhibition is a good one, though some of the most important works are not new. But one is rather inclined to think that the title of the Society is somewhat too comprehensive for the actual scope of the exhibition.

TRADE AND CRAFT.

Smokeless Heating Stoves.

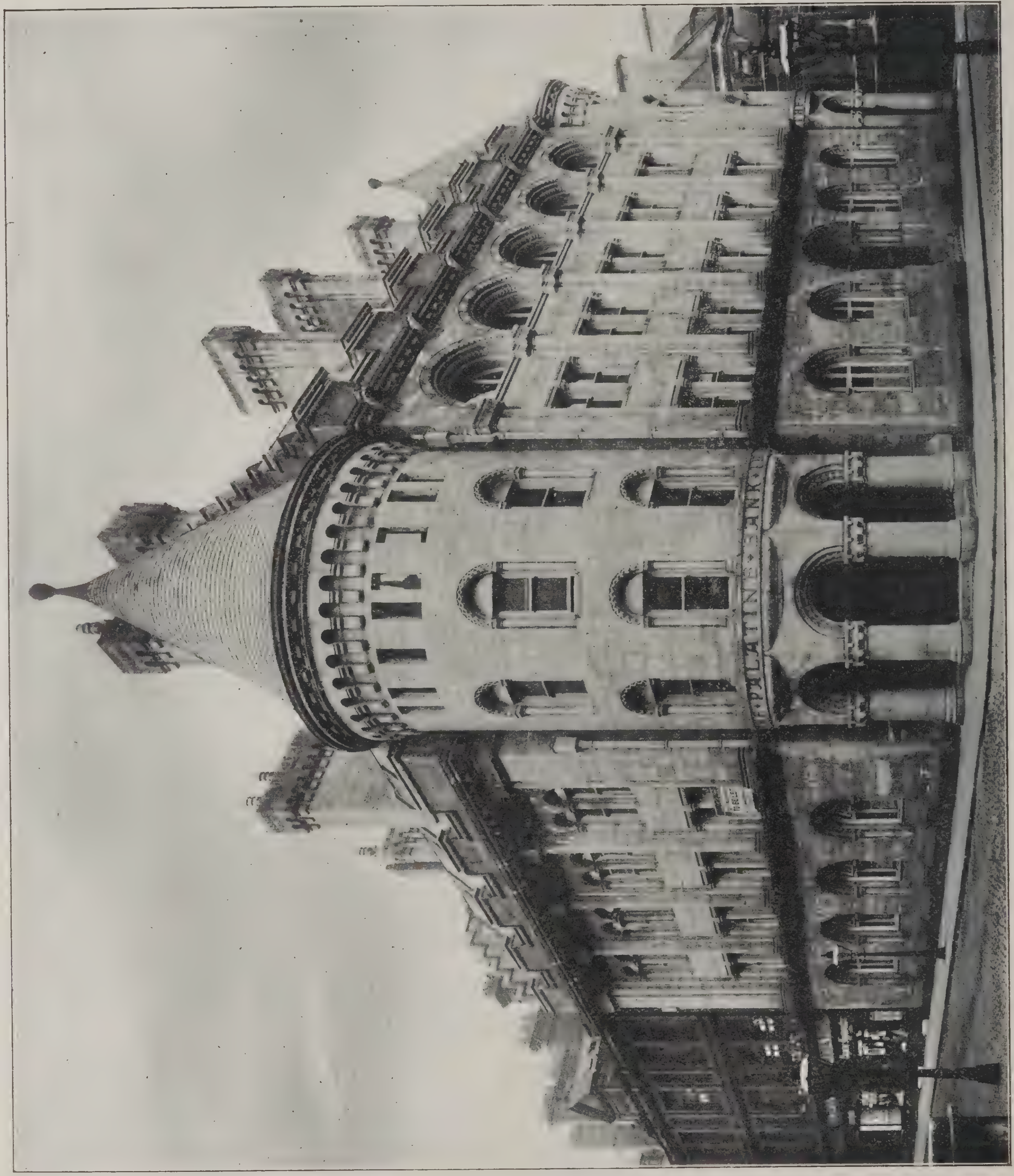
Modern enterprise has done much to improve the domestic environment, and manifestations of continued activity in this respect become increasingly numerous and varied. Any appliance, indeed, that is designed with a view to the minimising of domestic labour is assured of a welcome reception. The smokeless heating stoves which have recently been introduced by the Carron Company, Carron, Stirlingshire, and in illustration of which a booklet has also been published, should mark yet another stage in the general advance towards a healthier atmosphere in the home. A wide variety of examples are included in the booklet, and all are designed to consume anthracite coal, coalite, or gas coke. They are capable of considerable variation in heat, and are fitted with improved appliances, which ensure greater facility in the operation of the various working parts. These stoves will burn indefinitely without re-lighting, it being only necessary to stoke occasionally, and to re-charge with fuel. They can be fixed with ease in front of any existing fireplace, as the method consists merely in cutting a hole through the mouth of the fireplace, in which is inserted a short piece of sheet iron pipe. Only small pieces of fuel, about the size of walnuts, need be used.



Ground floor plan.

First floor plan.

HOUSE AT MILL HILL. MARTIN SHAW BRIGGS, A.R.I.B.A., ARCHITECT.



The main façade in Norfolk Street is flanked by circular towers with conical roof, and has stepped gables to the main roof. Norwegian granite was used for the main front, with Portland stone above. The ornament is sparingly applied, mainly in dog-tooth mouldings to the circular window-heads, and the carving on the plaster heads.

PALATINE BANK, MANCHESTER. BRIGGS, WOLSTENHOLME, AND THORNELY, ARCHITECTS.

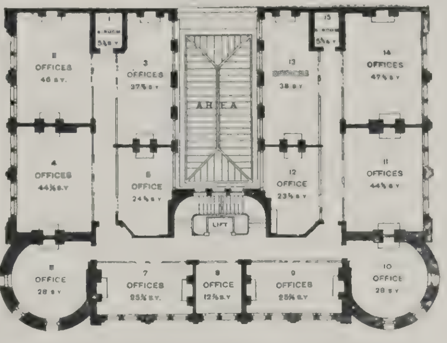
PALATINE BANK, MANCHESTER.

The Palatine Bank at Manchester is situated in Brown Street, and has been erected from the designs of Messrs. Briggs, Wostenholme, and Thornely.

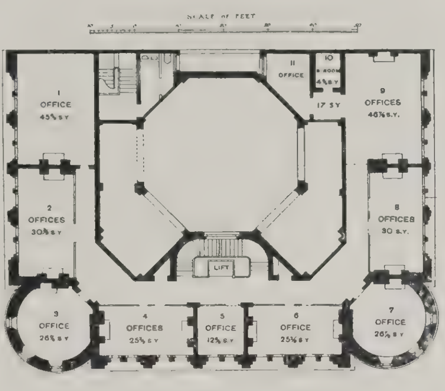
The elevations are treated in Romanesque style, probably the only example of the style to be found in the city. The main façade in Norfolk Street is carried up four floors, with an additional storey in the roof, lighted by dormer windows behind a battlemented parapet. It is flanked on either side by circular towers with conical roof, and has stepped gables to the main roof. The materials used were Norwegian granite for the ground floor, with Portland stone above. The ornament is sparingly applied, mainly in dog-tooth mouldings to the circular window heads, and the carving on the simple pilaster heads. The elevation on the Brown Street side has from right-of-light considerations had to be kept lower.

The decoration of the interior is kept simple in design, depending for effect on a colour scheme in glazed material. On three sides of the bank chamber are painted panels representing shipping, trading, and the arts. The walls are covered with Doulton's "Carrara-ware" in a dull white finish restful to the eye. It looks particularly well in the vaulted ceilings in the entrance to the bank. On the piers, also in Carrara-ware, clever use has been made of a billet ornament in gold. The soft marble-like effect of the Carrara blocks in the piers and arches and vaulted ceilings of the interior serves to set off the bold colour scheme of the upper portion of the walls, which is an arrangement of blues and reds on a background of gold mosaic. Above the gold mosaic is a gilded cornice carrying the domed ceiling which serves to light the bank. This glass ceiling, the work of Messrs. George Wragge, Limited, is divided into compartments, on which are shown the arms and devices of Lancashire boroughs. The mediæval character of the building has been kept very strictly in all the details. The bank counters and desks are made of oak, the door handles, the electric-light fittings, and the scales on the counter are all made of bronze decorated with simple Romanesque forms relieved occasionally by a tiny figure of a Crusader with his long sword and cloak. The work of Messrs. George Wragge, Ltd., included designing and manufacturing the following: — Lift enclosure, gates, grilles, electric fittings, special door furniture, cast bronze entrance tablets, and casements. Steel and glass dome over Banking Hall, and lead lights. The whole of the metal work has been designed to be in keeping with the character of the building; the interlaced tracery pattern being freely used in conjunction with coats of arms of Lancastrian towns. The large bronze tablets at the bank entrances represent the doorway of the period flanked with armoured figures, in the centre of which is placed the device of the bank; the pull handles on the swing doors modelled and cast in bronze re-echoing the feeling. In a similar manner, the electric counter standards are finished with a terminal in the shape of a finely modelled figure of a Norman knight. Throughout the metal work has been, while conforming to modern requirements, given a character which leaves the impression of the Norman feeling. The floor of the Bank is laid with india-rubber tiles. The bank occupies the whole of the ground floor with its counting-house, its bank parlours, and boardroom. The rest of the building is available for offices, many of which are already occupied.

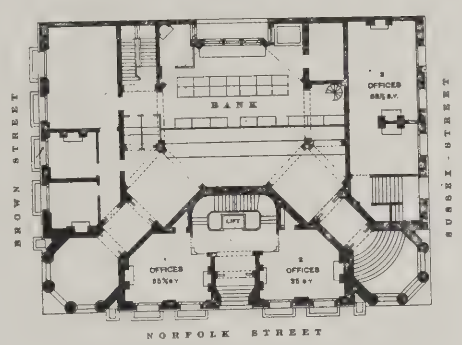
Among the contractors are the following: General contractors, W. Brown and Sons, Manchester, and Gerrard and Sons Ltd., Surriton, Manchester; mason and brickwork, Deakin and Greenwood, Manchester; plumbing and glazing, J. Jaffrey and Co., Manchester; plastering and painting, J. Gibbons; metal casements and ornamental ironwork and leaded lights and electric fittings, G. Wragge, Ltd.; electric installation, Lightfoot Bros.; Carrara work, Doulton's, Ltd., London; heating and ventilating, Saunders and Taylor, Ld.; electric lifts, A. Smith, Major and Stevens, London; strong rooms, Sutcliffe, Binns and Co.; fireplaces, Wall Fireplaces and Foundry Co., Ltd.; fireproof floor, Kleine Patent Fire Resisting, London; marble work, C. W. Williams and Co.; sanitary fittings, Shanks and Co., Ltd.; stone carving, Earp, Hobbs and Miller; steelwork, Redpath, Brown and Co.; granite, Macleod and Co., Liverpool.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



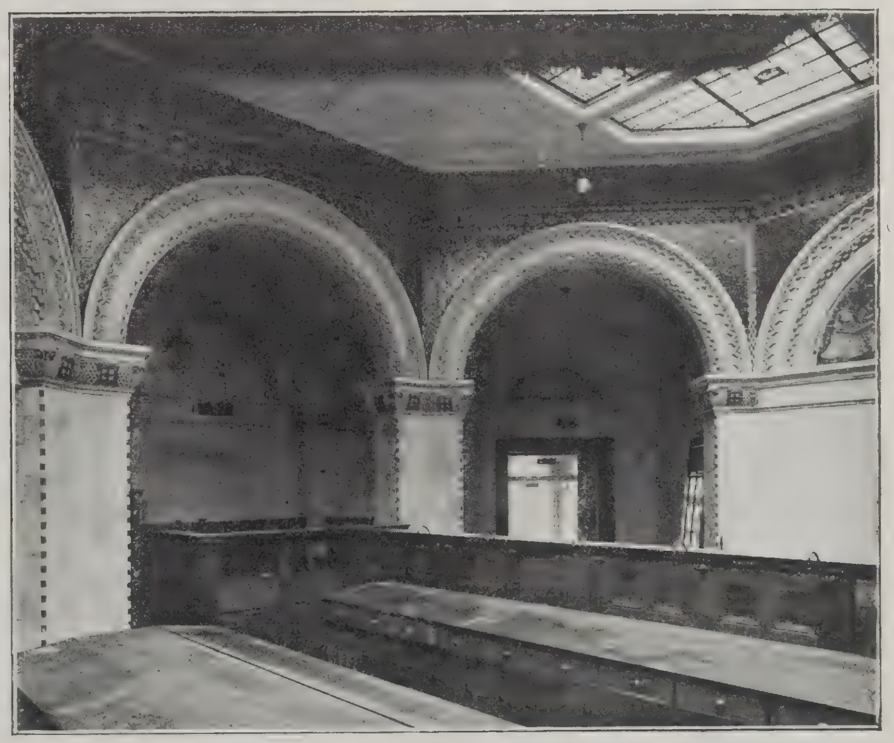
GROUND FLOOR PLAN

PALATINE BANK, MANCHESTER. PLANS BRIGGS, WOLSTENHOLME, AND THORNELY, ARCHITECTS.

The Lord Mayor (Alderman Sir John Knill) has promised to preside at a meeting, to be held at the Mansion House in the last week in October, in furtherance of the scheme of holding an Imperial Exhibition in London in 1915. Early next month a meeting of the temporary committee will be called to make arrangements for this meeting.

* * *

Lord Kitchener has consented to take the chair at the paper on the "Planning of Khartoum and Omdurman" which Mr. W. H. McLean, municipal engineer of Khartoum and Lecturer in Engineering at the Gordon College, will read before the International Town Planning Conference arranged for next month by the Royal Institute of British Architects.



PALATINE BANK, MANCHESTER: THE BANKING HALL LOOKING TOWARDS ONE OF THE ENTRANCES. BRIGGS, WOLSTENHOLME, AND THORNELY, ARCHITECTS.

NEW WORKS, PROPOSED AND IN PROGRESS.

PROPOSED.

Arbroath.—It is proposed to erect an addition to Arbroath Keptie School for the accommodation of supplementary classes. At a recent meeting the Property Committee submitted to the Board a list of tenders amounting in the aggregate to £2,346, or £846 more than the sum considered at a previous meeting to be necessary for the work. The convener explained that the Department had refused to accept the plans unless new offices were put in, and said that some of the tenders required reconsideration. It was moved that the whole matter be deferred for a month, and this was agreed to.

Barnoldswick.—The Vicar of Barnoldswick announces in his Parish Magazine that a site for the proposed new church in Skipton Road has been acquired. The total cost is £1,000, and already half of this has been received and utilised. The remaining £500 will have to be paid by the 1st of August next, when the building scheme will be taken in hand.

Bexhill-on-Sea.—The Bexhill Town Council have decided to make application to the Local Government Board for sanction to borrow the sum of £2,977, for the erection of a colonnade and bandstand on the Central Parade.

Blyth.—Viscount Ridley has promised £1,000 towards the cost of the proposed new municipal buildings at Blyth. The total cost of the scheme is £15,000.

Cork.—Mr. P. C. Cowan, Chief Engineering Inspector of the L.G.B., who recently held an inquiry into the Dublin Corporation scheme for the erection of dwellings for the workers in the Cook Street area, states that while he does not advise the rejection of the scheme, he suggests that it should be more fully considered. It is expected that there will be a conference between Mr. Cowan and the Corporation officials in connection with the matter.

Doncaster.—The Great Northern Railway Company have sent to the Doncaster Corporation their last contribution of £10,000, making in all £30,000, towards the cost of the new bridge over the Marsh Gate level crossing.

Droylsden (Manchester).—The Ecclesiastical Commissioners having sanctioned the scheme for the formation of a new parish, a new church is to be built for St. Andrew's, Droylsden and Clayton, in place of the present Mission Church, at a cost of £4,000. When £1,000 has been raised the work of erection will be commenced, and so far over £800 has been realised.

East Grinstead.—The Urban Council are not to purchase the site at the junction of London Road and Station Approach, whereon they proposed to erect new Municipal offices, stables, etc. Application was made to the Local Government Board for sanction to a loan, but the Board are not prepared to give that sanction, being of the opinion that at the recent inquiry sufficient evidence in favour of the scheme was not adduced and, further, that on the site of the present offices there is sufficient room for any extension of premises the Council may require for some time to come.

Ebbw Vale.—It is proposed to erect a drill hall for the 1st Welsh Field Ambulance, R.A.M.C.(T.), whose headquarters are at Ebbw Vale, and a site near the London and Provincial Bank has been provisionally selected.

Esher.—The plans of the Parish Hall to be erected in Church Street, Esher have been passed by the District Council, providing the walls are built to the required thickness under the by-laws.

Inverkeithing.—It is the intention of the Inverkeithing School Board to erect a new school in consequence of the greatly increased number of children in the parish due to the work at Rosyth Naval Base. The school will provide accommodation for 920 pupils, who will be distributed in 15 classrooms.

Liverpool.—The city justices three months ago decided, as a temporary expedient, to ask the City Council to provide an additional court in the present Dale Street buildings and to effect certain structural alterations in the offices on the ground floor. The Corporation surveyor (Mr. T. Shelmerdine) has now prepared detailed plans and specifications and invited tenders, the lowest of which amounts to £1,617. The proposed new court, with the necessary fittings, lighting, heating, and ventilation, will cost £1,054, alterations in the main bridewell adjoining the new court £60, and the alterations to the offices £502. This expense is greater than anticipated, but the Office Committee strongly recommend the justices to urge the City Council to have the work done as soon as possible.

London, N.E.—A commencement is shortly to be made with the building of the proposed new church of St. Andrew at Higham Hill, situate in the district of Leyton.

London, S.E.—At a recent meeting of the Deptford Borough Council the Libraries Committee reported that they had had under consideration the probable cost of the building to be erected in Lewisham High Road, at the corner of Rokeby Road, for a central library. It would be remembered that when Mr. Andrew Carnegie was approached some years ago the cost was estimated at £9,000, which he agreed to give in respect of the central library, together with £4,500 for each of the two branch libraries proposed to be erected. The committee, now being of opinion that £9,000 would not be sufficient to cover the cost of building the library, had approached Mr. Carnegie with a view to his offer in respect of that building being increased, and they were gratified to report that a communication had been received in which he agreed to make his gift £12,000.

London, N.—The Local Government Board has declined to accede to the application of the Hornsey Borough Council for permission to sell land acquired some years ago at Highgate for the erection of workmen's dwellings. The department expresses the opinion that private enterprise has failed to meet the demand for this class of house in the district, and that no sufficient grounds have been adduced to justify the council in not proceeding to carry out the scheme, for which a loan of £39,690 was sanctioned in November, 1907.

Milford Haven.—The Milford Haven Urban Council, at a recent meeting, further considered the question of erecting a bridge at Pill on the recommendation of the Highways Committee to apply for a Provisional Order to enable the work to be proceeded with. It was explained that the scheme would cost £3,000, and that of this sum the County Council had promised to contribute £1,000. Application was also to be made to the National Provident Institution which owned the greater part of the property in Milford for a subscription towards the scheme, which is necessary in order to provide improved inter-road communication between the two fishing ports of Milford and Neyland. By a majority of one the Council decided not to proceed with the Provisional Order until a reply had been received from the National Provident Institution.

Newport (Mon.).—The Monmouthshire Territorial Forces Association have received a letter from the War Office stating that the Army Council is prepared to consider a scheme for the provision of an up-to-date artillery drill station in the Pill district of Newport. The scheme provides not only for a hall, officers', sergeants', and men's rooms, but lecture halls, riding school, gun park, and housing accommodation for three instructors.

Reading.—Mr. Edgar Dudley, F.S.I., Local Government Board Inspector, has held an inquiry, at the Town Hall, into the application of the Council for sanction to borrow £2,000 for the purchase of land from Messrs. H. and G. Simonds, Limited, for the widening of Bridge Street, Reading.

IN PROGRESS AND COMPLETED.

Aldershot.—It is anticipated that the new lecture room now in course of erection at Aldershot for the Prince Consort's Library will be completed by the end of November. The work is in the hands of Mr. J. Crockerell, Army contractor, of Aldershot, Plymouth, and Selsea, and the total outlay will be about £1,200. The lecture hall, which will accommodate 452 officers, will be connected with the older library by a covered way, which will run beside a smaller reading room, also in course of construction.

Colbren (Wales).—The new Baptist Church at Colbren, erected at a cost of £1,350, has been completed, and provides accommodation for 450 persons. It is built of local stone, with Bath stone dressings, the whole of the timber work being in selected pitch-pine. The building is lighted throughout by acetylene gas, and is heated by medium pressure hot water apparatus. Mr. W. Beddoe Rees, Cardiff, was the architect, and Messrs. Thomas Bros., Pontardowe, the contractors.

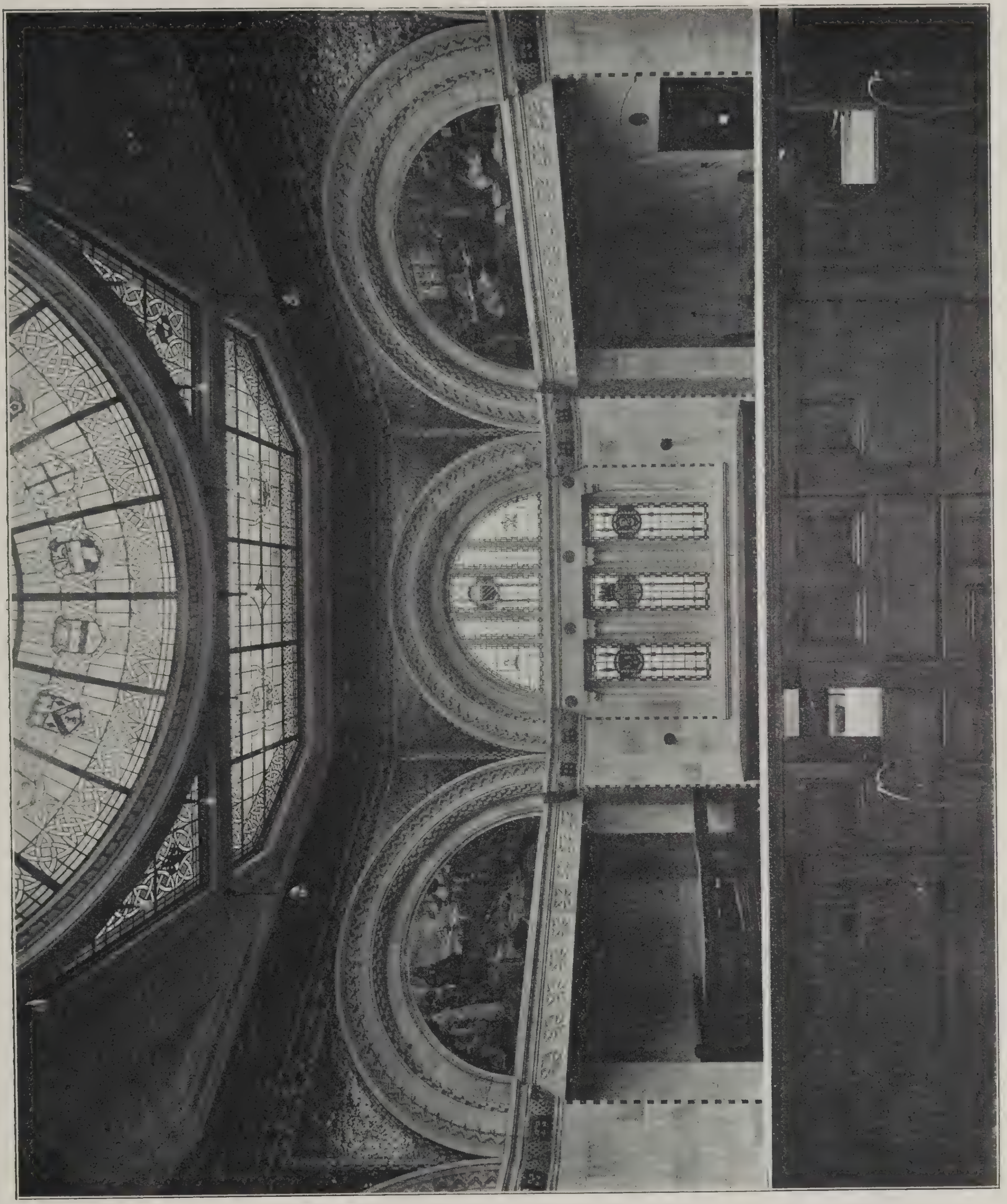
Colwyn Bay.—The foundation-stone of the tower of St. Paul's Church, Colwyn Bay, has been laid by Mr. John Brock, J.P. The church was established 22 years ago, but owing to lack of sufficient funds, the building has so far remained unfinished. The tower will be 85ft. in height, with eight belfry windows. Situated at the north-west corner of the nave, and forming the main entrance to the church, it will provide a roomy porch, over which will be a classroom surmounted by the ringing room and belfry, with space for a full peal of bells. A clock, which can be illuminated at night, will be placed in the tower, having a face on each side. The tower is square on plan, with massive buttresses at the angles, and built like the church of local limestone, with red sandstone dressings. The amount of the contract is £3,409, Mr. J. Douglas, of Chester, being the architect.

Dawdon (Durham).—The Marchioness of Londonderry has laid the foundation stone of a new church, to be dedicated to St. Hild and St. Helen, at Dawdon, Seaham Harbour, which is in course of erection at a cost of £5,500. The church, which is being built of Lincolnshire faced bricks, in the Norman basilica style of architecture, will be 130 ft. in length and over 50ft. wide. The site includes space for a vicarage.

Dumbarton.—The new Carnegie Library in Strathleven Place, Dumbarton, erected at a cost of £6,000, has been completed. The building is of white Dalreoch sandstone, in the Renaissance style, and is of fireproof construction, having concrete floors and steel roofs. The dimensions of the general reading-room are 41ft. by 37ft., and seating accommodation is provided for 112 readers. Mr. William Reid, Church Street, Dumbarton, was the architect.

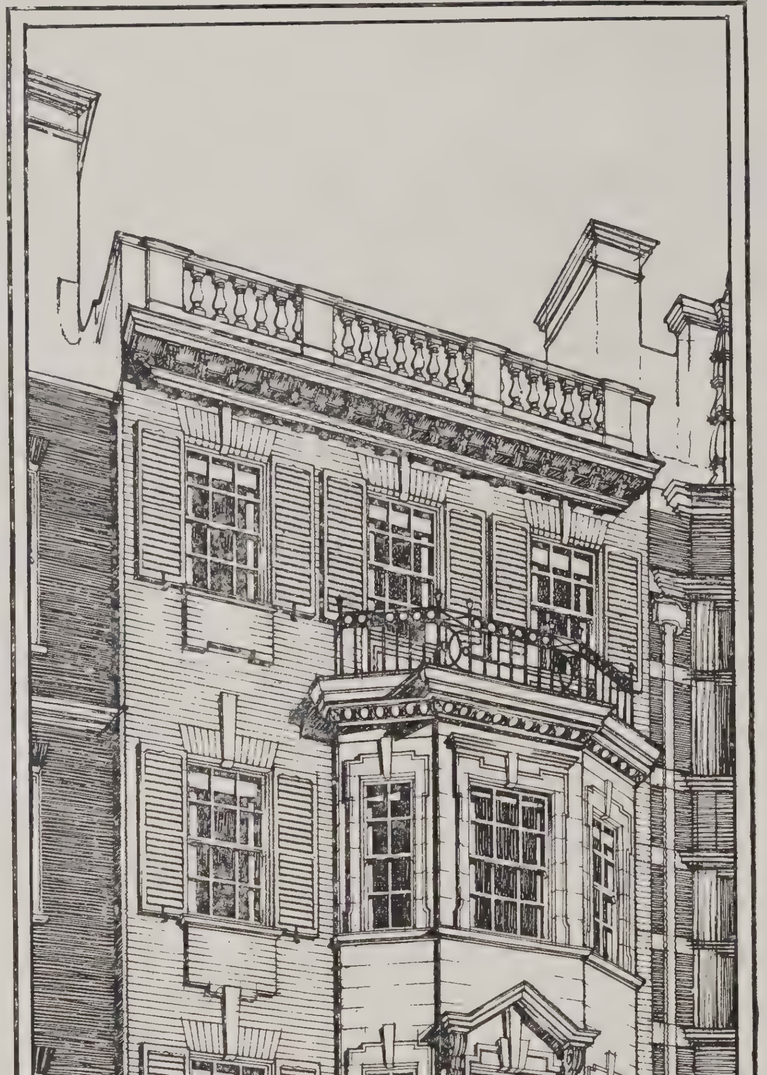
Halifax.—The foundation stone of the new district police station, which is in course of erection in Warley Road, Halifax, at a cost of £1,850, has been formally laid by Alderman L. Calvert, the chairman of the Watch Committee.

London, S.W.—The new building of St. Mark's Training College is now practically complete. The building, which has cost nearly £25,000, is of red brick with Portland and Bath stone dressing. Its front, parallel with the King's Road, is 150ft. long, and in the middle it runs back 90ft. It is solidly built, with fireproof floors and stairs. On the ground floor there are five class rooms, a physics laboratory, and a science lecture theatre, besides offices for the principal and secretary. The floor contains two more class rooms, a library, tutors' rooms, and an art room. Above these, again, are 56 cubicles, the other 76 students being accommodated in the old main building. There is also a lower ground floor containing manual training and other workrooms. Adjoining the western end of the building is a gymnasium, measuring 75ft. by 35ft., with a recreation room behind it. The formal opening will not take place till next June.



On three sides of the bank chamber are painted panels representing shipping, trading, and the arts. A gilded cornice carries the domed ceiling which serves to light the bank.

PALATINE BANK, MANCHESTER: VIEW OF PART OF BANKING HALL. BRIGGS, WOLSTENHOLME, AND THORNLEY, ARCHITECTS.


N° 4
W. Henry White
Archt 1910
N° 4 WIMPOLE STREET W
W. HENRY WHITE F.R.I.B.A. ARCHITECT
14a CAVENDISH PLACE CAVENDISH SQre W.

NO. 4, WIMPOLE STREET, W.

The site upon which this house is being built is a restricted one, and has been developed to meet the requirements of a modern West End dwelling house. The front is being executed with "T.L.B." sand-faced bricks, with dressings of Portland stone, and green jalousie shutters to the windows. The house is being erected by Messrs. D. Prosser and Son, of No. 23, Charlotte Street, W., from the designs of Mr. W. Henry White, F.R.I.B.A., of No. 14a, Cavendish Place, W. The illustration is from a drawing exhibited in this year's Royal Academy.

COMING EVENTS.

Wednesday, October 5th.

Institute of Builders, Koh-i-Noor House, Kingsway. Mr. Moritz Kahn on "American Methods as Applied to Reinforced Concrete Contracting," 4 p.m.

Thursday, October 6th.

University College, London.—Carpenters' Company's Lectures. Mr. H. V. Lanchester, F.R.I.B.A., on "Town Planning," 1st lecture, "Ideals of the Past," 6 p.m.

Friday, October 7th.

Institution of Municipal Engineers.—Annual meeting at Eastbourne. Commences 11.15 a.m, in Council Chamber at the Town Hall. Concludes on Saturday, October 8th.

Monday, October 10th.

R.I.B.A. International Town Planning Conference in London commences, and continues until October 22nd.

LIST OF COMPETITIONS OPEN.

OCTOBER 31, ETC., ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—The U.D. Council invite experienced architects to submit plans, specifications, and estimates for the erection of hot sea-water baths, at Pickie. Further particulars can be had on application to J. Milliken, Clerk to the Council, Town Hall, Bangor, Co. Down.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK. Open only to architects practising in Dublin. Premiums £100 (to be merged), £30, and £20. Conditions on application to the Registrar.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Competitive designs are invited from architects for rebuilding the above property, for which the following premiums are offered for three selected designs:—1st £100, 2nd £50, 3rd £25. A plan of the site and particulars can be obtained from J. Elmes Beale, owner, Bournemouth, on payment of a deposit of one guinea, which will be refunded upon receipt of a bona-fide design.

WALL DECORATION: SOME PRINCIPLES AND A PROBLEM.

The further mural decoration of the Houses of Parliament by the addition of six historical panels, as enumerated in last week's issue, on p. 314, enhances the interest of the paper on wall decoration read by Mr. F. Morley Fletcher, Director of the Edinburgh College of Art, at the end of December last, before the Edinburgh Architectural Association, and recently published in the R.I.B.A. Journal. From the following extracts it will be seen that Mr. Fletcher gives a clear and succinct restatement of the principles that appear to govern mural decoration, and deals suggestively with the problem of permanency of the materials employed.

The Parlous State of Decorative Art.

The great increase of material and mechanical resources in these modern days seems to have brought bewilderment and confusion to decorative art rather than any corresponding advantage. In wall decoration especially is this confusion evident. With all our machinery, with all our schools, can one point anywhere to a single piece of great and satisfying modern wall decoration in all this country—to any work that will bear strict comparison with that of the great masters of the past? We have had in this country several masters of great decorative and imaginative talent. One thinks of the names of Gainsborough, Alfred Stevens, Rossetti, and others of our great painters who had the poetic talent, yet who left no great wall decoration in any of our national buildings, or churches, or great halls.

Perhaps the conditions of our climate and national life are such that a different character of decoration is more suited to us—one more concentrated in form, used as points of enrichment giving emphasis to large reposeful surfaces, rather than the diffuse decoration of great spaces suited to other national ideals. Perhaps the reason is simply that a proper technical method has not yet been found that will satisfy the conditions imposed by our humid climate and the impure atmosphere of our cities. In either case it is evident to all who have studied the more modern attempts at mural decoration that the technical problem is not solved; that good work has been spoiled or lost for lack of craftsmanship; and that a true technique must be found before real progress can be made in this branch of Art.

What are the principles that should be observed and kept in view in the search for a method suited to our modern conditions, and for the future development of a School of Decorative Painting in which personal expression may have the utmost freedom, subject only to the control of a true principle? In contemplating the carrying out of a definite scheme of decoration, the considerations that must simultaneously present themselves to an artist are those of material and treatment. The materials to be employed, and the style or manner of treatment are equally involved in their relation to the architectonic necessities of any given work. The first decision as to both material and treatment must satisfy the elementary æsthetic principles or canons of workmanship relating to the work in hand.

A Cardinal Principle.

One great established principle relating to wall treatment demands that in decoration of a wall the sense of the flat surface shall not be lost; that, however elaborate the enrichment of the design, the sense of illusion shall never be given to an extent that would appear to destroy the fact of the flat wall. It is the same fundamental principle or rule that insists, in the enrichment of an object, that its essential character shall be emphasised rather than lost or disguised. This principle is familiar to us all, yet how often is the consideration of it neglected in our wall decoration, and especially in the choice of material for such work? Not only in our own time, but in all times of the great periods of decorative art, one sees the frequent tendency to fall away from true decoration of surface to the meretricious effort to produce illusion of reality and so destroy rather than decorate the wall. Examples of this may be seen in Roman as well as in later European art.

Whatever then be the particular material chosen for use on the surface of the wall, it must be of a nature to harmonise with the fabric of the wall rather than to conceal or disguise it. It should not be necessary to cover up the wall with a foreign material before commencing to decorate it. The most true decorative method will be one that uses rather than conceals the wall. It may be contended that some of our modern wall coverings are a necessary clothing of a wall prior to its decoration. In the case of domestic rooms, with the need of continual renewal and ever-changing tenancy, this must be admitted to be so; but here it is a question of renewal and change of surface for the sake of cleanliness and the individual taste of successive tenants, and not a case of permanent or monumental wall decoration.

A Makeshift Practice.

A common practice in the permanent decoration of public buildings is to cover the walls with canvas upon which the decoration is painted either before or after the canvas is placed on the wall. This at the best must be admitted to be only a convenient makeshift, and not a method satisfying in the simplest way the primary conditions of artistic treatment. The canvas is not a durable material used under such conditions, and is in its nature foreign to the substance of the wall.

One might elaborate to a great extent instances of breach of the elementary principle of true and direct treatment in wall decoration without finding any clue to a solution which should indicate the perfect method. We can no longer have recourse to the simple means of the old masters of fresco painting, for these have been proved dangerous in our humid climate and smoke-laden city atmosphere. If, however, we examine the best results of modern methods of work, keeping in view the principles of the true tradition, we may find ultimately an indication of the sure direction for research and experiment that will lead to a method suited to our modern conditions.

The Work of Puvis de Chavannes.

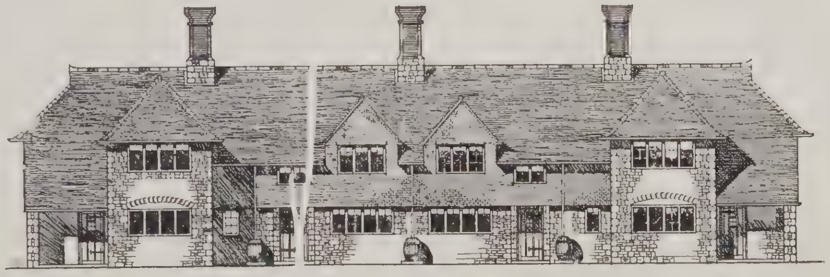
First among the notable examples of modern work that would seem worthy of our consideration are the great decorations of Puvis de Chavannes. The collection of decorations on the walls of the Pantheon in Paris affords a unique opportunity for study and comparison of various styles, both in method and treatment. Without question the work of Puvis de Chavannes is pre-eminent in its beautiful selection of tone and colour, and its obvious harmony with the spirit and architectural intention of the building. On closer examination one finds it to be painted with solid oil paint, rendered dull on the surface by means of a wax medium, and on a canvas ground which has been fixed to the stone wall. It is here that one questions the character of the method and workmanship. The fixing of the canvas is a convenience to the artist, but is not called for by the wall which it conceals; nor can its material satisfy strict conditions of soundness and durability. The method has still other objections when it leads to the possibility and actual practice of painting the decoration away from the building, and under other conditions of lighting, as has been the case in M. de Chavannes' later work for the decoration of the Boston Library. These decorations were entirely painted in Paris, on canvas, without the artist having seen the building for which they were destined. Here both æsthetic and material interests are in danger. It follows from these considerations that although one must allow the fullest admiration for beauty and fine treatment to the work of Puvis de Chavannes, yet the methods employed do not strictly satisfy the requirements of artistic principle on the material side.

The Luminous Wall.

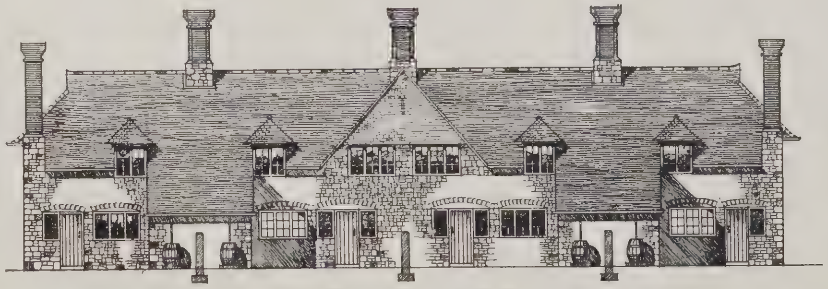
In another respect the use of a canvas covering for wall painting entails the loss of a decorative quality, especially when the canvas is solidly painted over, as in the case of the Pantheon decorations. Under this treatment one loses the harmonious luminous quality which should be a property of the wall itself rather than an illusory effect obtained by loaded lights.

In the Vatican frescoes by Raphael one never loses the sense of the luminous wall, telling everywhere through the painted decoration. In the Pantheon decorations, although the tones chosen are most harmonious, yet there is a sense of the loss of the wall's own luminosity under the superimposed opaque coating of solid paint. This necessity of retaining and using the luminous power of the wall I believe to be of the first importance in decorative wall-painting. It is a most conspicuous quality in the best of the old masters' work.

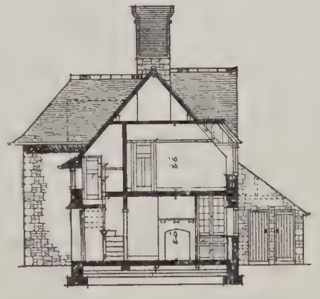
Another noteworthy example of modern decoration is the work in South Kensington Museum by the late Lord Leighton—the two lunettes filled with designs representing the Arts of Peace and the Arts of War. These beautiful designs are carried out by a modern method, named the Spirit Fresco method, by which the colour, while rendered fluid by a spirit medium, is laid on a porous surface, and is at the same time slightly protected by wax. But the surface of the wall remains dry and absorbent, and the work is subject to all the varying influences of moisture, dirt, and acid gas in the London atmosphere. The colour has already faded considerably in the few years that have elapsed since the work was done, and the surface has shown signs of disintegration. Otherwise the decorative character of these frescoes is entirely satisfying, and they are of a true and scholarly tradition. Their only element of failure is in the fact of their inability to resist the dangers of our climate by reason of their exposed surface. How great these dangers are, and how penetrating is the acidity of a city atmosphere, will be realised by consideration of the fact that Professor Church, in examining the exterior limestone of St. Paul's Cathedral, found the limestone to be changed to sulphate of lime to a depth of three-quarters of an inch by the action of sulphurous acid in air and rain. Although in an interior



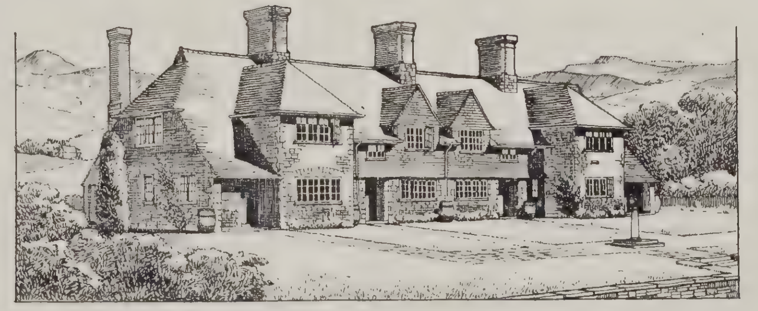
FRONT ELEVATION



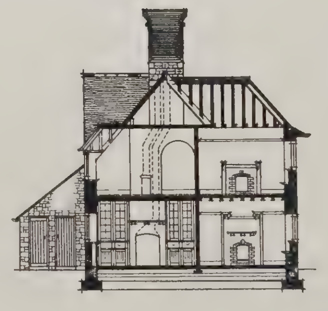
BACK ELEVATION



SECTION AA



» *Perspective View* »



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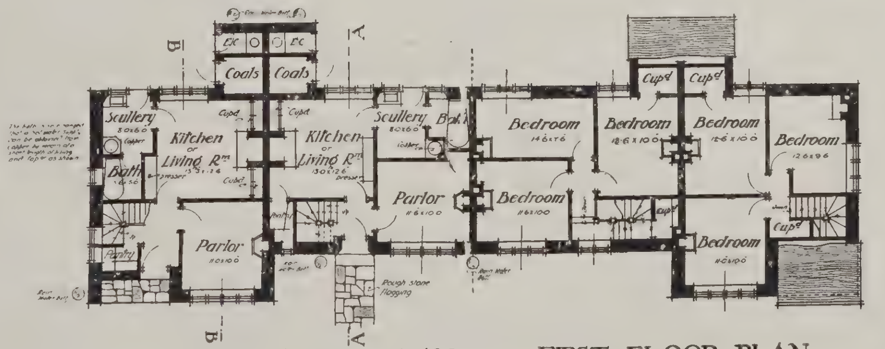
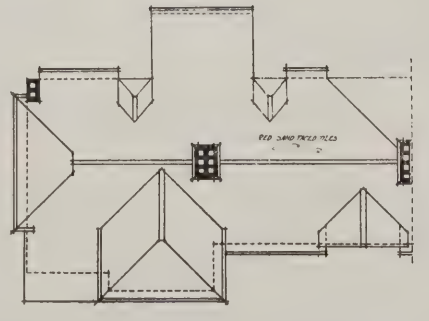
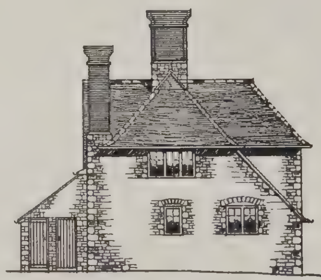


GROUND FLOOR PLAN FIRST FLOOR PLAN



ROOF PLAN



END ELEVATION

These designs were awarded first prize at the National Eisteddfod of Wales held at Colwyn Bay this year, Mr. Henry T. Hare, F.R.I.B.A., being the Assessor. The materials are to be local rubble stone for the walls, with red sand-faced tiles for the roof.

PRIZE DESIGN FOR GROUP OF COTTAGES. J. D. ARFON JONES, ARCHITECT.

there is protection from rain, there is still the similarly dangerous circumstance of condensation of moisture consequent on sudden changes of temperature.

Neither the painted canvas nor the spirit-fresco method has therefore provided us with a sure means of work. The examples cited, and other modern decorations of great and notable achievement, such as those by Mr. Sargent for the Boston Library, still leave us uncertain as to the soundness of their method, and unconvinced that the proper solution has yet been found. Many other media and special preparations of pigment have been invented, and are offered by the manufacturers of artists' materials, some having obvious advantages; but, good and useful as these are, they meet only part of the main requirements of our case.

Failure of Modern Materials.

The failures or difficulties of modern materials have driven many artists to revert to the old methods of pure fresco as the only solution of the modern problem. So long as coal and gas are burnt in our cities there must be the continued impregnation by acid, and consequent disintegration of surface as the lime becomes inevitably decomposed and the surface gradually powders away. For these reasons the revival of fresco and tempera is of doubtful value.

In an experiment nearer home the difficulties with which we are faced have been more frankly met, and appear to be to a great extent overcome, in those remarkable examples of modern decoration in Edinburgh, carried out by Mrs. Traquair. Open as these decorations may be to individual criticism, yet they are without doubt a great achievement, and satisfy in a remarkable way many of the most difficult conditions presented to our modern decorator. They are, by virtue of the nature of the materials used, of great durability, and should prove to be immune to the dangers of our climate and atmosphere. They may be safely and freely washed, and their protecting surface of wax may be renewed from time to time.

Mrs. Traquair's Methods.

The following are notes given me by Mrs. Traquair of her method of work, and of the preparation of the walls. (1) A good plaster ground was prepared, then successive coats of zinc-white were given, thinned very much at first with oil of turpentine—almost no zinc in first coats—four or five coats given in all. (2) The painting was done on the solid zinc-white ground—the colour used being ordinary oil colour in tubes, thinned by a medium of beeswax dissolved in turpentine—about one teacupful of beeswax shavings to a pint of turpentine. The lights were got by wiping with a rag, no white paint being used. (3) The finished painting was varnished with good copal carriage-varnish. (4) A wash of wax and turpentine was put over all the varnished surface and rubbed by hand with a cloth to a dull eggshell polish. A careful examination of the work in the Catholic Apostolic Church and in the Mortuary Chapel of the Sick Children's Hospital strengthens the conviction that the methods employed are, in the main, very suited to the conditions of our modern life.

The Virtues of Wax.

There is confirmation of the value of the protecting surface of wax, laid on and polished by hand, in the description given lately by Principal Laurie of the methods employed by the Greek sculptors and decorators in similarly protecting the painted surfaces of their statues and temple walls. Perhaps in detail the method might be simplified or verified, but the main points essential to true decoration seem to be well fulfilled, namely: (1) The wall is prepared with a durable and luminous surface of a very impervious character, thus protecting the work from dampness from within the wall. (2) In applying the paint the luminosity of the wall surface is retained and used in modelling the forms of the design. The lights are obtained from the wall itself—never by loaded paint suggesting an illusion of light unrelated to the wall's surface. (3) The surface of paint is covered with an impervious and renewable protective material that in itself has a quality of decorative value. (4) The work is executed ***in situ***. Whether the problem is entirely solved will only be decided by time and further experiment, but there seems to be a strong probability that in respect of material and method of work these decorations will prove a most valuable example.

THE WEEK'S NEWS IN BRIEF.

The Coventry Corporation decided, on Wednesday last, to accept Mr. Andrew Carnegie's offer to provide £10,000 for branch free libraries.

* * *

With reference to the Rothschild Road school competition, the awards in which were announced in last week's issue, the third prize should have been ascribed to Messrs. Cheers and Smith, architects, Twickenham and Blackburn.

* * *

The Kensington Borough Council last Wednesday refused to consent to the proposal of the London County Council to construct tramways along Fulham Road to Brompton Road, with a terminus close to the Oratory, on the ground that they would be seriously detrimental to the property on the line of route and in the vicinity.

* * *

A stained-glass window has been erected in Ashstead Church, Surrey, to the memory of the late Mr. John T. Holgate, A.Inst.C.E., F.I.I., who for many years was sidesman of the church. The subject of the window is the baptism of our Lord by St. John. The work has been carried out by Messrs. G. Maile and Son, of London.

* * *

The garden village on the Penkhull estate of the newly federated Potteries borough was inaugurated on Saturday of last week, when the Mayoress (Mrs. Cecil Wedgwood) opened the first cottage of "Stoke-on-Trent Tenants, Limited," originally registered as the Trentham Garden Village Tenants, Limited. The estate covers 38 acres, and is situated on a hill with a south-west aspect.

* * *

The University Extension Board of the University of London has just issued a programme of University Extension lectures for the coming session. Among the 70 or 80 courses that have been arranged to be delivered in different parts of the London area, a number of lectures on the history of London are included, and during the session fortnightly visits to buildings illustrative of the history and architecture of London will be conducted by Mr. Allen Walker.

* * *

Sir George Douglas unveiled last week, on Pipers Hill, the most prominent point on Flodden Field, the memorial which has been erected there to "the brave of both nations." The ground upon which the memorial is erected has been presented by the owner, Mr. John C. Collingwood, of Cornhill. The memorial, which is from the design of Messrs. Bower and Florence, Spittall Granite Works, Aberdeen, consists of a Celtic monolith cross of grey Aberdeen granite, 12½ft. in height, and 3ft. 9in. across the arms, with a base of rough-hewn granite blocks 6ft. high. On one side of the cairn is the inscription "Flodden, 1513, to the brave of both nations." The memorial has cost over £400, and a sum is to be invested for its upkeep.

* * *

It will be remembered that the late Mr. H. C. Richards, K.C., M.P., left a sum of £5,000 to be devoted to the rebuilding of the old Paul's Cross, which was dismantled by order of the Long Parliament, or, alternatively, to the erection of a suitable memorial on its site. The authorities decided on the latter course, and the memorial, designed by Mr. Reginald Blomfield, A.R.A., has now been completed. The site is in the angle of St. Paul's Cathedral formed by the north transept and the choir, and the memorial consists of a tall Doric column with the figure of St. Paul at the summit. The column stands on a preaching platform, which preserves the character of the old "preaching cross."

* * *

The improved lighting of Kensington Road, and of all the streets in the district, which has just been completed for the City of Westminster by the Gas Light and Coke Company, forms part of the general scheme for the lighting of Westminster which was adopted by the Council last April. Inverted incandescent gas burners have been used with excellent effect.

* * *

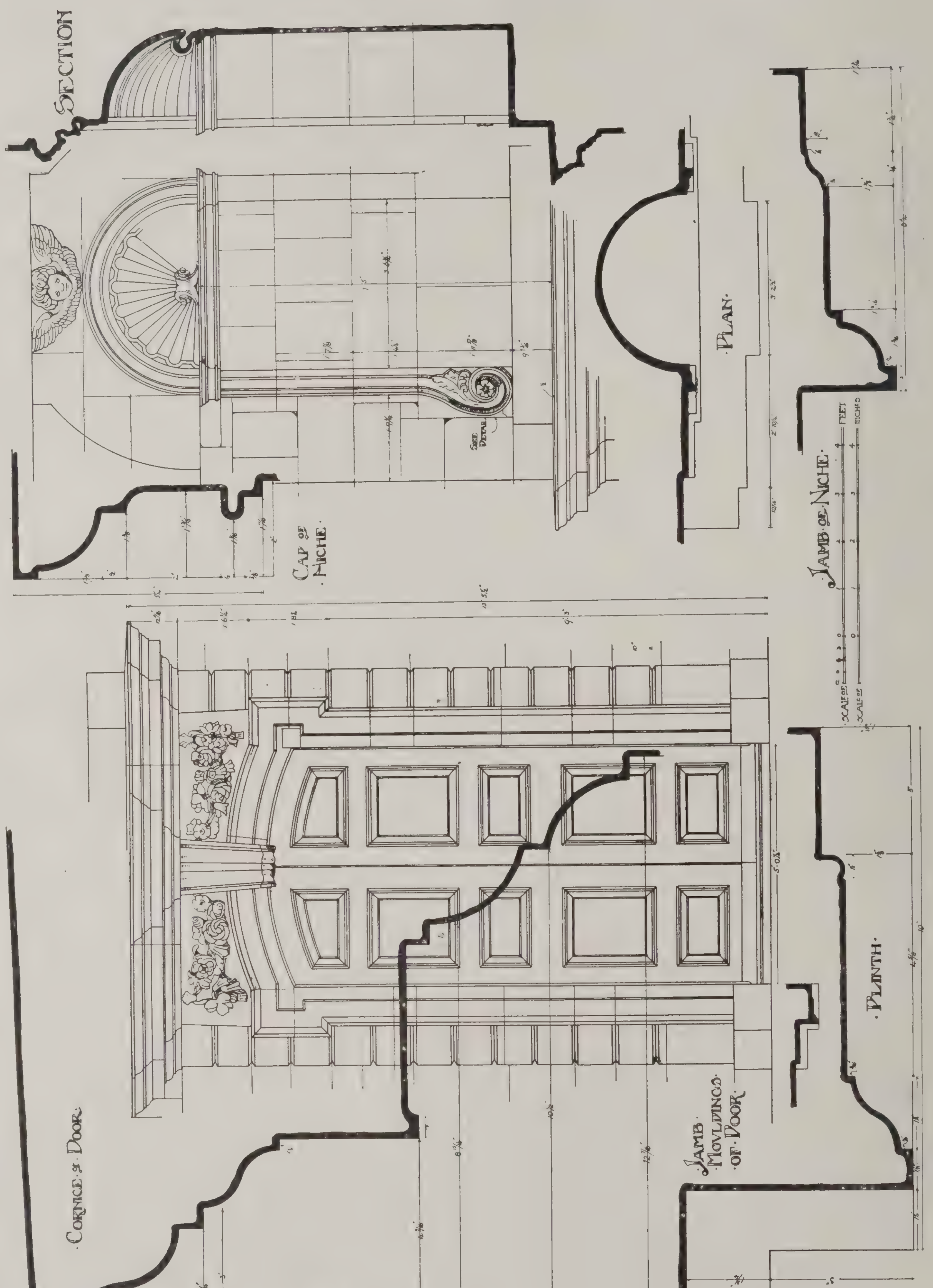
There has just been erected in the Wishart U.F. Church, Dundee, a stained glass memorial window, the work of Messrs. William Meikle and Sons, Wellington Street, Glasgow. In the subject selected, "The Three Ages of Man," youth is shown as a young man being girded for the serious battle of life, and receiving from the hand of an angel the "Helmet of Salvation." Manhood is illustrated by "the Christian soldier," the type of vigorous manhood, fully armed with sword, shield, breastplate, and helm. Age is depicted as the patriarch, with flowing locks, having cast aside his sword and shield, and with upraised hands and looks of ecstasy receiving from the angel a crown of glory.

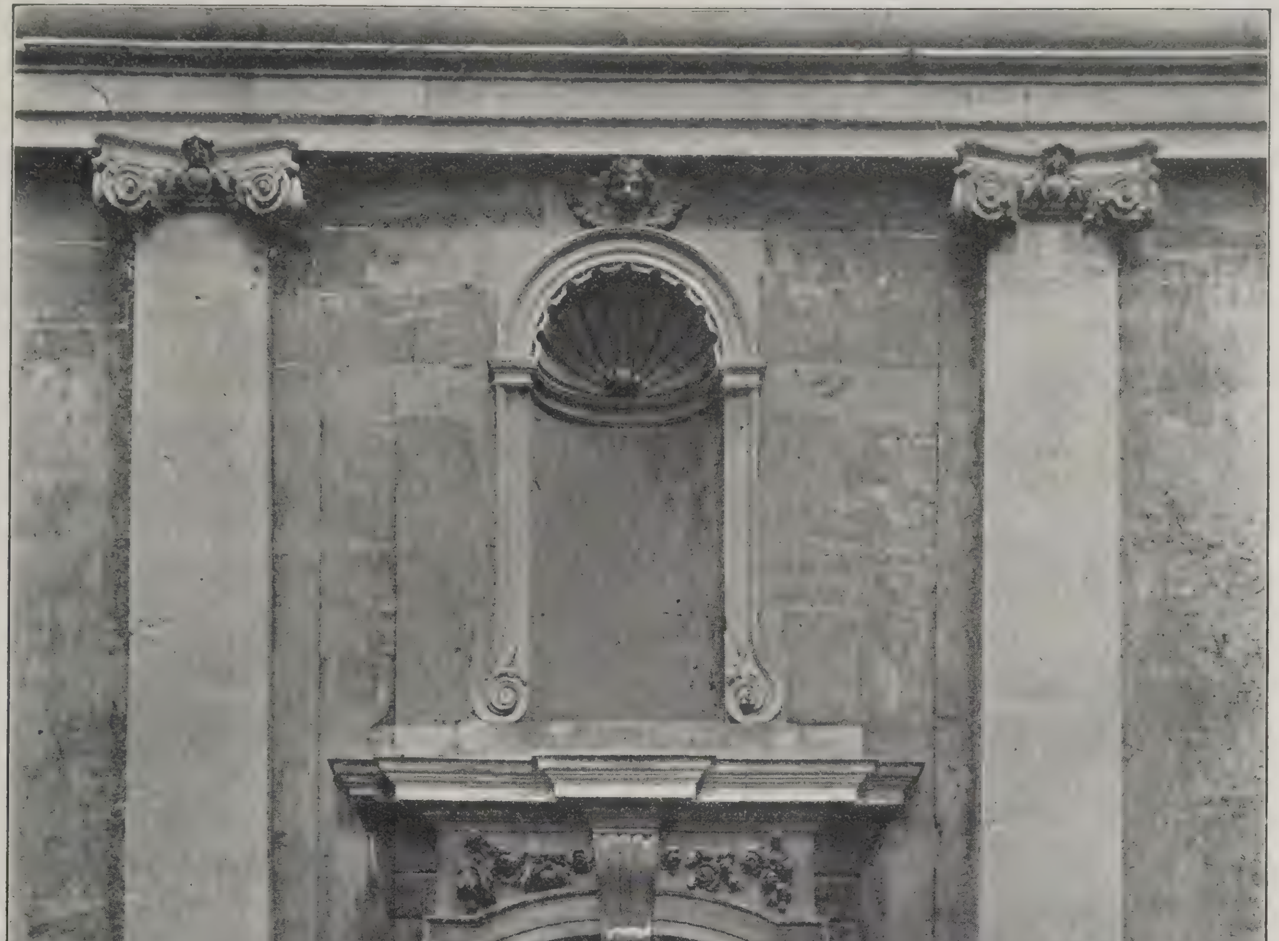
GROUP OF COTTAGES, NORTH WALES.

The group of cottages shown on p. 350 were awarded first prize at the National Eisteddfod of Wales, held at Colwyn Bay this year, the assessor being Mr. Hy. T. Hare, F.R.I.B.A. The conditions of the competition were that each cottage should contain five or six rooms, and should be suitable for erection on the estate of Lady Mostyn, Talacre Hall, Prestatyn, North Wales. The characteristic local materials are employed in its construction, rubble stone for the walls, with red sand-faced tiles for the roofs. Windows to be casements throughout, and painted white.

The architect is Mr. J. D. Arfon Jones, Highbury, N.W.

·REDLAND·GREEN·CHAPEL·BRISTOL·

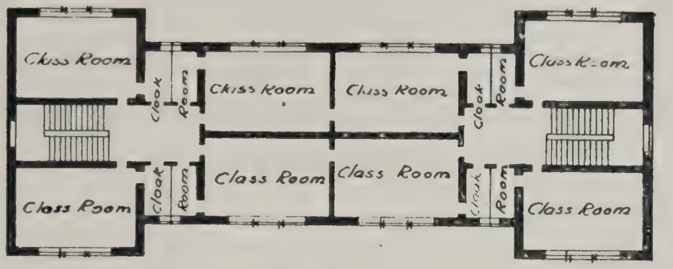




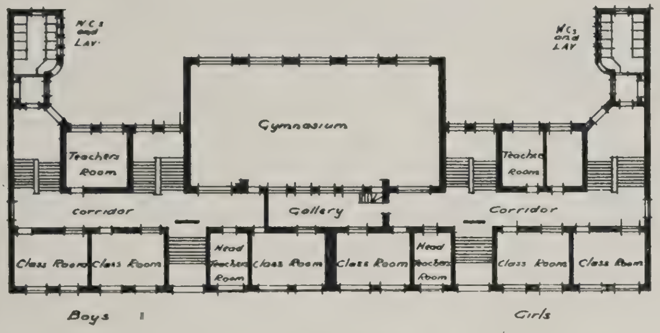
The doorway and niche here shown are on the west elevation of the chapel. The style exhibits much of the spirit and vigour of Vanbrugh, whose King's Weston House, a few miles away, probably influenced Strong's work.

DOOR AND NICHE, REDLAND GREEN CHAPEL, BRISTOL. JOHN STRONG, ARCHITECT.

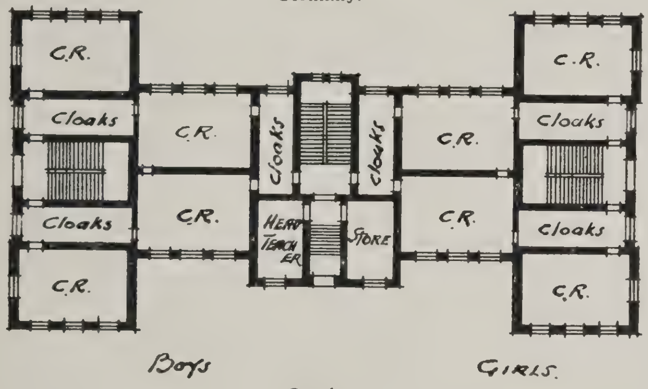
LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



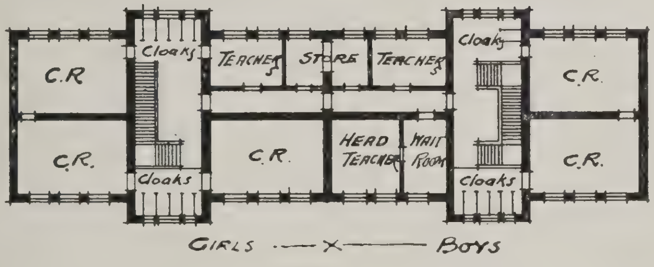
Denmark.



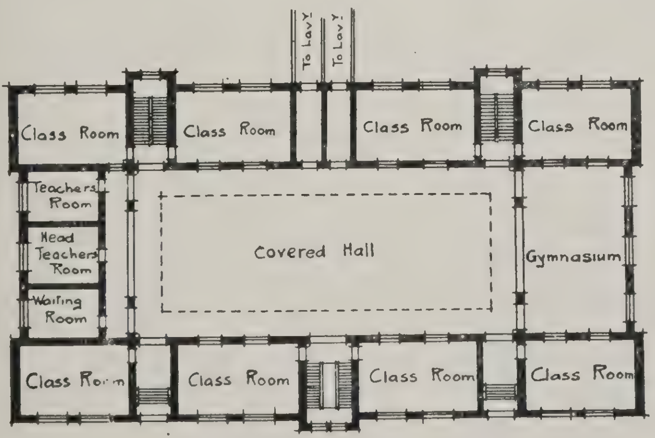
Germany.



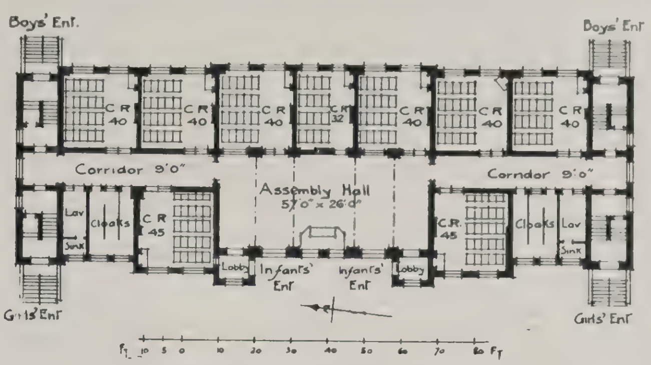
Sweden.



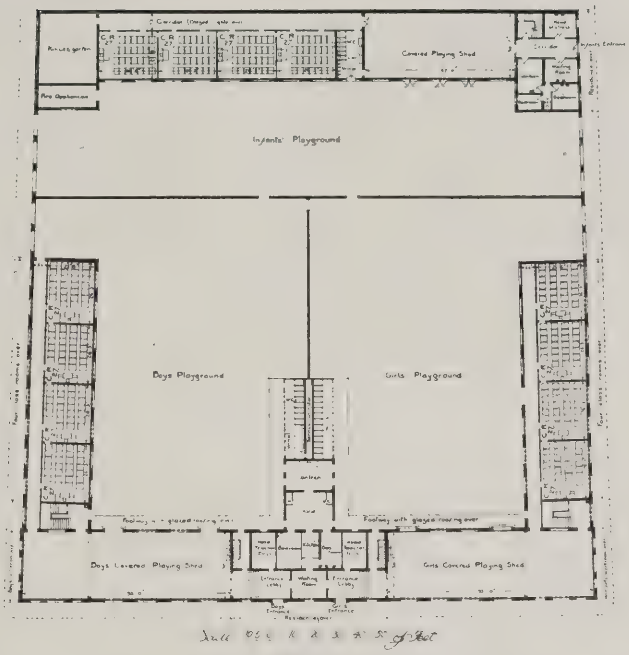
Norway.



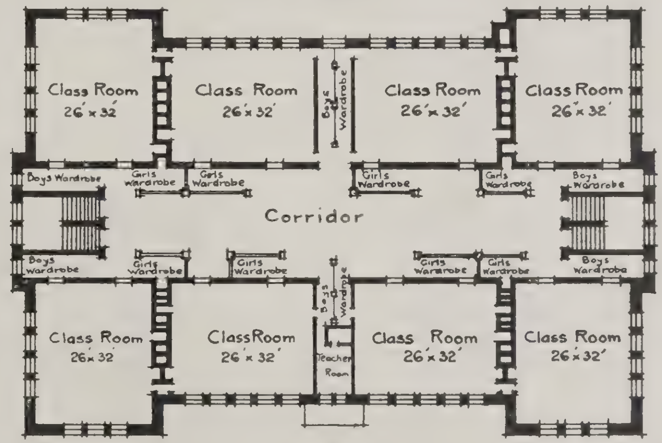
Belgium.



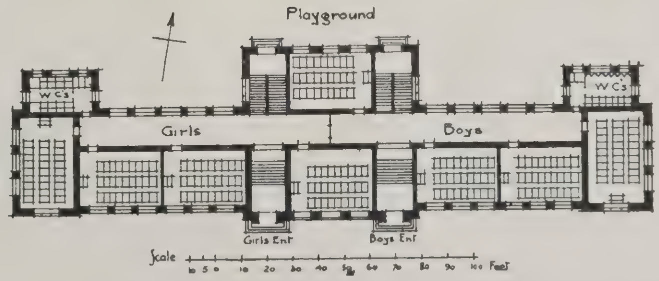
England (Pelham School, Wimbledon).



France.



America.



Switzerland.

In our issue of September 21st, at page 303, we gave a report of a paper read by Mr. William H. Webb, Lic.R.I.B.A., at the Congress of the Royal Sanitary Institute at Brighton, on "Large Public Elementary Schools in Town Districts." The plans here shown are a selection from a series which Mr. Webb has courteously placed at our disposal.

TOWN SCHOOL PLANNING OF VARIOUS NATIONS.

"DESIGN IN THEORY AND PRACTICE."

Design in Theory and Practice. By Ernest A. Batchelder. New York: the Macmillan Company; 1910. 7s. 6d.

Speaking generally, we have not found that books on any theory of design lead to very much. Design is an art of which it may be said, *solvitur ambulando*; we look to results rather than to processes of reasoning; it is possible to reason admirably and yet produce very dull and uninteresting designs; and no amount of writing or reading on the subject will make a designer. The most useful books on design have really been those which, like most of Mr. Day's, contain a large number of examples of fine work which are stimulating to the reader's imagination. It is of interest to discuss their qualities and to show some reasons why they are good; for instance, how they are suited to the nature of the material in which they are executed—a kind of point which lends itself very well to elucidation and illustration; but after all, it is the designs themselves which are the real lesson, not for imitation, but as an education of taste. It is by familiarity with many good things that we learn to appreciate what is good and to distinguish it from what is bad, by an instinctive perception rather than by reasoning.

Mr. Batchelder's book, however, though it is largely occupied with theory, is somewhat exceptional in having a more practical character than is usual with such treatises. Starting by reducing design to its simplest elements, such as the arrangement of lines and spaces, he is able to show some general truths which, illustrated in dealing with these simple elements, would remain equally true in their application to elaborate design.

"To design," the author says in his introduction, "is to give tangible and definite expression to an idea. The term *design* implies an interesting, possibly a beautiful, at least an orderly rendering of this expression." That is well put, and we should be inclined to emphasise the qualification "orderly" as one of the most important of all. That which is not "orderly"—in other words, with a distinct motive permeating it, and definite suitability for its position and the space it occupies—may have beauty of detail, but will not be beautiful as a whole, since all ornament is or should be relative to the object and the space ornamented. But, as the author says truly, the first thing is to have an idea; and where are we to get that? He points out the fallacy of the cry of "go to Nature." Nature will not in herself make design; "she will return to you just what you take to her; nothing more." In other words, you must have cultivated the power of designing first, before you can make any effective use of suggestions from Nature. Nothing can be more true. But Mr. Batchelder seems rather inclined to suggest that actual work with tools and material is the only way to evolve ideas. It is one way, no doubt; tools and materials are very suggestive. But it can hardly be maintained that no good designs have been made by men who have never themselves worked in the material in which the design is to be executed. There are plenty of facts to set against that. And he seems rather to imply that the study of existing work is at the root of a great deal of failure in modern design. If it is studied merely to produce designs in this or that "school" of ornament, we quite agree. But that should not be the object; the object should be, as before, the cultivation of artistic perception, and the stimulation of the imagination. It is the greatest mistake to suppose that the study of existing work is at variance with originality. Every good piece of existing design suggests, to any but the mere copyist, one step further; something more that may be made of the idea. It is the man who has the widest acquaintance with existing work who will be the most likely to be original in his own—if he makes the proper use of his study.

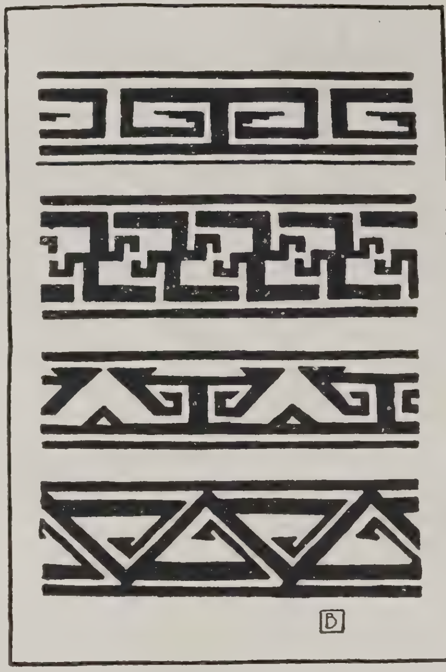
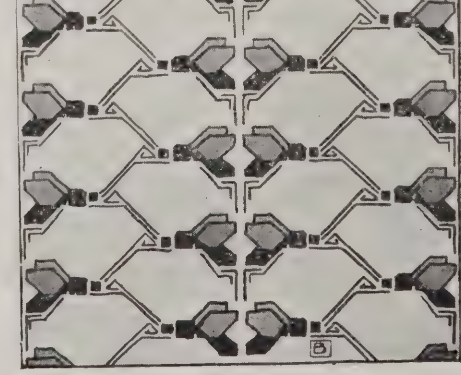


FIGURE ILLUSTRATING SPACE AND MASS COMPOSITION.
(From "Design in Theory and Practice," Fig. 20.)

A good illustration is given in Figure 20 of the value of interrelation of parts in space and mass composition. Here the whites, which are the spaces, have as definite a form as the masses. "The interest is in the unity of black-and-white elements. If the whites are left to chance and become mere holes, due to the repetition of a black unit, the interest decreases. Each element should strengthen and support the other." This is a good example of a principle illustrated in simple elements, which is equally applicable to the most elaborate design. It comes round again to that quality in design of being "orderly," or well-ordered, which is so important in small and great things. Nothing in design should have the appearance of accident.



INSECT SYMBOLS IN DESIGN.
(From "Design in Theory and Practice," Plate 18.)

The chapter on "Constructive designing," or design which consists mainly in the suitable expression of construction, puts the subject very well, though we cannot accept all the examples given as good illustrations of it. The seventeenth-century plane on page 59, for instance, we should call badly applied ornament; and some of the spoons of various periods, shown in two or three of the illustrations, are distinctly bad design; capricious and not "orderly"; not good examples to engrave in a book. Some of the author's own designs based on what he calls "Nature symbols"—reduction of natural forms of animals and insects to block types, only distinctly suggesting their natural origin, are very clever and ingenious, and very suggestive also as to the general system of conventionalising ornament ideas from natural types. Plate 18, a diaper founded on "insect symbols," is a particularly good example. On this subject of the part played by nature in ornament, there are many good remarks scattered about the book. The author comments on Bernard Palissy's failure to interest us permanently, in spite of his brilliant imitations of nature in his ware; "the closer he came to Nature the less interesting his product became. He expected Nature to do his designing for him"; a function which Nature will not undertake. As the author remarks elsewhere, "the value of his" [man's] "design increases as it approaches the geometric. . . Nature insists that the organic structure of the design shall come from he designer."

We do not, however, admire all the examples given of symbolising from Nature; for instance, the Japanese wood-carving, with a symbolism of water, shown in Plate 57. We find the Japanese method of symbolising water in carving very ugly and undecorative; it is the fashion to admire it at present, but it is a fashion that will pass. There are other instances in which the illustration does not bear out the text. Why, for example, are we to be told that the front of the Palazzo Sagredo at Venice, shown in Plate I., is "the finest possible adjustment of space and mass relations"? It is nothing of the kind; there is no "adjustment" at all; it is a piece of piquant irregularity of openings, interesting and picturesque as such; but it is deficient exactly in that "orderly" character which is elsewhere described as a necessary element in design. "Secure variety," we read on another page, "but remember that in variety alone there is no merit. There must be co-ordination of all the parts to make a whole." Where is the co-ordination of parts in this Venetian façade?

We are glad to find the author can see through the absurd pretensions sometimes made for the effect of measured and calculated proportions in buildings and other designs. "Proportions in the final test are felt, not measured," he says; which is the truth of the matter in a nutshell. "We may design a temple and invent some ingenious formula for the purpose, only to find when it is completed that it is wholly bad and uninteresting." We also note a very good distinction, which we have not seen made in the same words before, between "built-in ornament" and "built-on ornament"; a very good way of putting it. The "built-in ornament" is that which is enclosed between the structural portions, and differentiates structural lines from enclosed spaces; the "built-on" ornament is what is applied independently of the difference between structure and space.

Altogether, a clever and interesting book, above the average of its class.

OBITUARY.

Herr Wilhelm Von Pittler.

The German engineer and inventor, Herr Wilhelm von Pittler, died in London on September 24. He was perhaps most widely known as the inventor of the Pittler lathe, in connection with which large works at Leipzig were founded.

Mr. E. P. Martin.

The death occurred suddenly, on September 25, at Harrogate, of Mr. Edward Pritchard Martin, vice-chairman of Guest, Keen, and Nettlefolds (Limited). Mr. Martin, who was an eminent engineer, was the son of Mr. George Martin, a mining engineer of Dowlais, and was born at Dowlais 66 years ago. He was educated privately in Gloucestershire and in Paris, and became manager of the Blaenavon Ironworks in 1874, and of the Dowlais Works eight years later. In 1897 he was chosen as President of the Iron and Steel Institute, and he was also a past President of the Institute of Mechanical Engineers. Eight years ago he retired from the Dowlais management, retaining a seat on the directorate and residing at Abergavenny. Mr. Martin was High Sheriff of Monmouthshire in 1903, and a magistrate for the counties of Monmouth and Glamorgan.

Professor Louis Jacobi.

Professor Louis Jacobi, the architect who restored the Saalburg, died at Homburg on September 24, in his seventy-fourth year. He had had a varied and an interesting career. At the age of fourteen he went to America, where he worked in a factory at Buffalo by day, and in the evening studied the theory of engineering. Returning, at the age of twenty, to Germany, he obtained an architectural education at Karlsruhe, and four years later he was commissioned to rebuild the Homburg Kurhaus. He took part in the war of 1870, and on leaving the army became interested in the Roman remains which lie to the north-west of Homburg. His excavations, and the works which he published on the subject, attracted the attention of the Emperor and Empress Frederick, and the present German Emperor in 1897 entrusted him with the task of completely restoring the ancient Roman fort and collecting all the remains which had been found in a museum. The latter has been open for some time, and the restoration of the fort is now nearly complete. The Kaiser, who warmly admired his work, gave him the Second Class of the Order of the Prussian Crown, and the city of Homburg conferred upon him the honour of citizenship. The Emperor has sent a telegram condoling the city of Homburg on the loss of its distinguished citizen.

Mr. Joshua Ledgard.

The death occurred, on September 23, of Mr. Joshua Ledgard, who had been in business as a builder for more than forty years, and was a disinguished member of the Leeds Master Builders' Association.

FEDERATION NEWS.

Yorkshire Federation.

The monthly meeting of the Executive Council of Yorkshire Federation was held at the Town Hall, Bridlington, on Sept. 16th. Councillor W. G. England, J.P. (President) occupied the chair, and thirty delegates were present from affiliated Associations.

The Deputy Mayor of Bridlington (Councillor J. V. Mainprize, J.P.), and the Town Clerk, Mr. A. E. Matthewman, LL.B., were present at the opening of the meeting, and extended a civic welcome to the Federation. On the motion of the President, seconded by Mr. J. Townsley, the Federation tendered to the Deputy Mayor their sincere thanks for his kindness in extending a civic welcome, and their appreciation of the mayor's consideration and courtesy in granting the use of the Council Chamber for the Federation meeting.

An appeal was made by the treasurer for more prompt payment of subscriptions. Insurance companies required prepayment of premiums, and as the Federation offered substantial trade benefits, these should be more loyally and cheerfully recognised by prompt and generous payments at the commencement of each financial year. There never was a time when the necessity for the Federation was so great, and when the opportunities for useful work in promoting the welfare and safeguarding the interests of building trade employers were so abundant. It was felt that the matter of subscriptions had been overlooked, and confidence was expressed that when the attention of members was seriously drawn to the importance of early payment, it would receive sympathetic and generous response.

The President reported that the deputation appointed by the Federation had an interview, on July 29th, with Sir S. Macdonnell (the Permanent Secretary), Sir H. Turner, Mr. Potts (architect), and other officials of H.M. Office of Works. A summarized statement was presented which was made in such a form that it was absolutely impossible either for anyone to detect the name of the contractor or to locate the works on which the information was based. Sir S. Macdonnell and Sir H. Tanner asked, however, if they could be informed, for their private and confidential information, as to the work on which the experiences were based, and undertook that no contractor would be prejudiced by permitting this information to be given. They were informed that the information had been supplied to the Federation in strict confidence, and it would only be with the consent of the interested contractors that it could be divulged. Sir H. Macdonnell definitely stated that every contractor had a right of appeal direct to the architect in charge of the work, who would be prepared at any time to receive representations by contractors with regard to unreasonable requests by a clerk of works. The deputation felt that they had made a distinct and favourable impression upon the permanent officials, and being desirous of following this up, approached the contractors who had given their experience, with a view to obtaining their consent to the information being given, subject to the safeguard previously indicated.

The President stated that they had pleasure in reporting that through the courtesy and with the consent of the interested members, the works on which the experiences were based had been confidentially supplied to H.M. Office of Works.

A letter was read from the Director of Labour Exchanges inviting the Federation to make a selection of one or more members to represent the Yorkshire Federation on the Advisory Committee for the West Riding (Northern Section) Area of the Yorkshire Division. The Area covered by the Committee will include Bradford, Huddersfield, Leeds, Wakefield, York and other intermediate towns. On the motion of Mr. A. J. Forsdike, seconded by Mr. A. W. Sinclair, it was resolved to submit the names of Messrs. J. Dawson (Huddersfield), P. Rhodes (Leeds), and A. Moulson (Bradford), as qualified to represent Building Trade Employers on the Advisory Committee.

It was reported that several associations had asked to be supplied with copies of proposed circular to architects. A slight addition under the head of prime cost sums, recommended by the Bradford Association, was considered as follows:—"That in cases where orders are given or payments made direct, the contractor shall be indemnified against responsibility or liability." On the motion of Mr. J. Townsley, seconded by Mr. R. Raper, the suggested amendment to the circular was approved, and instructions were given for 1,000 copies to be printed. The local associations were earnestly requested to distribute same at the earliest possible date, in order that the fullest advantage may be derived from concerted action.

Further correspondence was read with the Deputy Clerk of the West Riding County Council, who stated that the whole matter had now been referred to a sub-committee, and that he would consult them as to receiving representatives of the Federation and of the operatives. It was resolved, on the motion of Mr. R. Raper, seconded by Mr. A. W. Sinclair, that in the event of an official inquiry being held the Federation be represented by the president, senior vice-president, and the secretary.

It was reported that a letter had been received from the Deputy Clerk of the West Riding County Council stating that the conditions of contract were still under consideration, and that a reply on the points raised by the deputation of the Federation in February last would be communicated in due course.

The Federation considered the observations of Sir H. Llewellyn Smith, K.C.B., Permanent Secretary to the Board of Trade, before the recent meeting of the British Association. The subject was briefly presented by the Secretary. On the motion of Mr. A. J. Forsdike, seconded by Mr. A. W. Sinclair, the National Federation were requested kindly to call the attention of the Employers' Parliamentary Council to the urgent necessity of suitable representations being made to the Board of Trade with respect to the complicated nature of the work connected or associated with the building trade, especially that of casual employment; and of the serious difficulties which would be placed upon building trade employers if any further financial obligation was placed upon them either in respect of unemployment insurance or any other matter; further to call special attention, either by deputation or otherwise, to the serious restriction in output of trade largely consequent upon recent legislation, and also to the alarming increase in premiums for workmen's compensation due to a considerable extent to unreasonable and unnecessary claims, and the growing legal and medical expenses in connection therewith.

Members were reminded that while a 6d. stamp on a contract between private persons or firms made a contract legal, binding, and enforceable, it was necessary in all cases where a limited company was a party to the contract under seal that it should be stamped with a 10s. stamp. If the contract is made "by a duly authorised agent" to the company signing his hand only, and adding the words "as agent for X Co., Ltd.," the 6d. stamp is in ordinary cases sufficient. There are some objections to the latter procedure in the event of proceedings being taken, but the balance of convenience and saving of expense is sometimes deemed to outweigh these objections. Members were urged to see carefully that the proper stamp is affixed in the case of every contract or sub-contract, in order that it may be both binding and enforceable, and to consider the expediency of paying the higher duty to place the matter beyond doubt.

It was reported that a meeting of the National Administrative Committee will be held in London on October 11th.

Attention was drawn to the Town Planning Conference under the auspices of the R.I.B.A., to be held in London from the 10th to 16th October next. On the motion of Mr. A. J. Forsdike, seconded by Mr. J. Dawson, it was resolved that in the event of either the President or Mr. A. W. Sinclair being able to attend the Town Planning Conference while in London at the meeting of the National Administrative Committee, they be requested to attend as representatives of this Federation, and that the Federation pay the membership fee of one guinea.

Mr. Finch, of Hull, called attention to the policy adopted by the Hull Engineer, ostensibly under the provisions of the Town Planning Act, in respect of land at present used for agricultural purposes. It was decided to consider the Act at an early Meeting.

Correspondence between the National Federation and the N.A.O.P. was read and considered. The Hull branch of the N.A.O.P. declined to elect representatives in order that the local Court of Appeal provided under the revised agreement should be formally constituted. A question of demarcation of work has arisen, and the plasterers and other trades were seeking to have this question disposed of before appointing their representatives, whereas the employers pointed out that the agreement was specially signed with a view to the consideration of such cases, and it was therefore most desirable that the local Court of Appeal should be constituted forthwith, in order that it might hear and determine the case on its merits. On the motion of Mr. R. Finch, seconded by Mr. A. J. Forsdike, the representatives of the Federation were requested to bring this matter before the National Administrative Committee, with a view to pressure being brought to bear upon the N.A.O.P. to carry out the letter and spirit of the recent agreement.

It was reported that after considerable negotiations and two meetings of the Leeds Local Conciliation Board, an agreement had been mutually arrived at with the operative stonemasons, carpenters and joiners, bricklayers and labourers, to adopt uniform winter working hours.

The question of a further issue of the Yorkshire Federation Directory was considered. It was resolved, on the motion of Mr. Forsdike, seconded by Mr. J. Dawson, that it is expedient that a further issue of the Federation Directory should be made as early as possible in the new official year, and the secretaries of Local Associations were kindly requested to give active support in obtaining advertisements and in supplying the necessary official information.

Mr. J. Dawson stated that he had been informed that it was necessary under the Finance Act for all Builders to take a transfer of land direct, and again convey freehold land or assign leasehold land to purchasers. It had often been possible to convey direct from the vendor or lessor to the purchaser or lessee, without unnecessary legal expenses being incurred by the builder. It was decided to consider the matter at a future meeting.

Mr. W. Longden, president of the Sheffield Association, called attention to the Yorkshire Building, Sanitary and Allied Trades Exhibition to be held in the Artillery Drill Hall, Sheffield, from October 14th to Saturday, October 22nd, and invited the Federation to hold the October meeting in Sheffield. On the motion of Mr. J. Dawson, seconded by Mr. A. J. Forsdike, the invitation to hold the October meeting in Sheffield was most cordially accepted, and the meeting arranged for Thursday, October 20th. An appeal was made to all Federated members to attend the exhibition in order that it may be an assured success.—J. DAVIDSON, Secretary.

COMPLETE LIST OF CONTRACTS OPEN.

In this list are included, as a rule, only those contracts for which tenders are returnable about **five days** or longer after the date of this issue.

Unless expressly stated to the contrary, all deposits required for bills of quantities, etc., are returned on receipt of *bona-fide* tenders.

The words "Fair Wages Clause" inserted in certain paragraphs signify that persons tendering must conform to a fair wages clause in the Contract, which requires them to pay the rates of wages current in the district.

BUILDING.

Sept. 30—Oct. 18. **LONDON, N.**—Erection of a block of schools in Southbury Road, Enfield, for the Education Committee. Applications for bills of quantities should be sent to the Architect, G. E. T. Laurence, 22, Buckingham Street, Adelphi, W.C., from which date the plans and specifications can be seen at the Architect's address. A deposit of £3 3s. should accompany the application. Tenders, on the form supplied, must be delivered at the office of N. Hepworth, Clerk, Public Offices, Enfield. The contractor whose tender is accepted will be required to enter into a bond with two sureties in the sum of £500 each for the due performance of the contract. A schedule of wages and hours must be filled in and sent with the tender form. Fair wages clause.

Oct. 1-15. **LAMBOURN (Berks)** —Building of a new Council School at Lambourn, Berks, for 100 children, for the Berkshire Education Committee. Send names to the Secretary to the Education Committee, Market Place, Reading, Berks, before October 1, together with a deposit of £2 2s. for bills of quantities, which will be supplied by post. Plans, specification, and particulars as to the approved conditions of contract may be seen at the secretary's office on and after October 3, and tenders must be delivered to him.

Oct. 8-28. **WINCHCOMBE (Gloucester).**—Erection of a new infants' school, at Winchcombe, for the Gloucestershire Education Committee. Bills of quantities can be obtained from R. S. Phillips, architect, Midland Bank Chambers, Gloucester, upon deposit of £2 2s. Applications for bills of quantities must be made not later than October 8, and tenders delivered on or before October 28.

Oct. 10. **BERKELEY (Gloucester).**—Alterations and additions to Berkeley Council School, for the Gloucestershire Education Committee. Particulars of the work may be obtained from R. S. Phillips, architect, Midland Bank Chambers, Gloucester, upon deposit of £2 2s.

Oct. 10. **HORLEY.**—Erection of a lavatory at the fire station, for the T.C. Plan, etc., can be seen at the office of F. J. Nightingale, Clerk, Massetts Road, Horley.

Oct. 10. **REIGATE.**—Sundry works for converting an existing building at the sewage disposal works, Earlswood, into a disinfecting station, for the Reigate B.C. Plans, etc., prepared by Fred T. Clayton, C.E., the Borough Surveyor, may be inspected, and full particulars obtained, at his office at the Municipal Buildings, Reigate.

Oct. 10. **ALDERNEY AND SARK (Channel Islands).**—Erection of two lighthouses, one at Quenard Point, Alderney, and one at Cape Robert, Sark, Channel Islands. The plans may be inspected and forms of tender, together with specifications, obtained at either of the undermentioned places:—(i.) Trinity House, Tower Hill, London, E.C., between the hours of 10 a.m. and 4.30 p.m.; (ii.) the Engineer's Office, States Office, St. Peter Port, Guernsey; (iii.) the residence of the Keeper-on-Shore from the Caskets Lighthouse, Alderney. Applicants, upon receiving the forms of tender and specifications, will be required to deposit £1 on producing the receipt for which at the offices of George Corderoy and Co., 21, Queen Anne's Gate, London, S.W., they can obtain the Surveyor's quantities in connection with the work. Tenders must be addressed to the Secretary, Trinity House, London, E.C.

Oct. 11. **PORT TALBOT (Wales).**—(See "Engineering.")

Oct. 11. **ST. AGNES (Cornwall).**—Additions and alterations to farm houses and buildings at Mithian Farm, St. Agnes, for the Small Holdings Committee of the Cornwall County Council. For plans, specifications, conditions of contract, and form for tendering, apply to the County Land Agent, Public Rooms, Truro, to whom tenders must be sent.

Oct. 11. **CHESTER.**—Erection of a secondary school for boys and girls in Queen's Park, Chester. Plans and specifications can be seen at the office of the architect, W. T. Lockwood, F.R.I.B.A., 88, Foregate Street, Chester, on or after September 30, and quantities obtained on deposit of £1. Tenders are to be sent to J. H. Dickson, Town Clerk, Town Hall, Chester.

Oct. 12. **CROWLAS (Cornwall).**—Reseating and repairs at Wesleyan Chapel, Crowlas, for the Trustees. Plans and specifications may be had at the office of the architect, O. R. Caldwell, Penzance. Tenders to be sent, sealed and endorsed, to Edyvean, Nancledra, Longrock.

Oct. 12. **MAIDSTONE.**—Erection of a cart shed and scratching shed on the Asylum Farm, also glass roof over iron staircase adjoining buildings, at the Kent County Asylum. Plans and specifications may be seen by appointment, on personal application to the Engineer at the Asylum. Tenders must be delivered addressed to Francis R. Howlett, 9a, King Street, Maidstone.

Oct. 12. **SWANSEA.**—Erection at Swansea of the following works: — Headquarters block for six units, with officers' mess, riding school (150ft. by 53ft. 6ins.), with stable, magazine, and yard adjoining; drill hall (150ft. by 80ft.), with caretaker's cottage, lavatories, and miniature rifle range adjoining. Re-erection of existing gateway in altered position; new entrance from Richardson Street; also latrines and sundry works to existing sheds, for the Glamorgan County Territorial Force Association. Plans and specification may be seen at the office of the Architect, C. H. Rogers, 10, Quay Parade, Swansea, from whom bills of quantities may be obtained on deposit of £3 3s. Tenders to be delivered to Captain C. J. Wilkie, Secretary, 20, Dumfries Place, Cardiff.

Oct. 13. **LONDON, S.E.**—Erection of Deptford sorting office, for the Commissioners of H.M. Works and Public Buildings. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to J. Rutherford, H.M. Office of Works, Carlisle Place, S.W. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Storey's Gate, London, S.W., on deposit of £1 1s. Tenders must be delivered addressed to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Oct. 14. **BOURNEMOUTH.**—Erection of the Bournemouth Parcel Sorting Office and Telephone Exchange, for the Commissioners of H.M. Works and Public Buildings. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to the Postmaster, Bournemouth. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Storey's Gate, London, S.W., on deposit of £1 1s. Tenders must be delivered addressed to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Oct. 14. **WHITCHURCH (Salop).**—Erection of a new secondary school, to accommodate 140 pupils at Whitchurch, Salop, for the Education Committee of the C.C. Plans, specifications, etc., prepared by the architect, J. Holt, may be inspected at his office, 9, Albert Square, Manchester. Any person desiring to tender and to receive copies of bills of quantities must send in his name to the architect, accompanied by a deposit of £2 2s. Tenders must be delivered to W. H. Pendlebury, M.A., Secretary for Higher Education, Shire Hall, Shrewsbury.

Oct. 15. **REDRUTH (Cornwall).**—Execution of the works scheduled by the Diocesan Surveyor for the Archdeaconry of Cornwall, as required in respect of dilapidations at Redruth Rectory, and the building, fences, and gates on the Glebe. Full particulars and specification of the works required may be seen on application to the Rev. H. W. Sedgwick, Treslothan Vicarage, Camborne; or at the offices of Smith, Paul, and Sitwell, Solicitors, Truro, to whom tenders must be sent.

Oct. 17.—**CHESTER.**—Erection of new annexe for 440 patients, at Upton Asylum, Chester. Plans and specifications can be seen at the office of H. Beswick, F.R.I.B.A., County Architect, Newgate Street, Chester, and quantities obtained on deposit of £3. Tenders are to be delivered to Alexr. Hornby, Clerk to the Visitors, Upton Asylum, Chester.

Oct. 18. **AMMANFORD (Carmarthen).**—Erection of a new church at Ammanford, Carmarthenshire. Apply to W. D. Jenkins, F.S.I., A.R.I.B.A., architect, Llandilo, from whom full particulars, together with bills of quantities, may be obtained. Tenders to be delivered to the Rev. J. W. Jones, Parsonage, Ammanford.

Oct. 18. **LONDON.**—Enlargement of the census office, consisting chiefly of iron buildings, for the Commissioners of H.M. Works and Public Buildings. Drawings, specification, and a copy of the conditions and form of contract may be seen on application. Bills of quantities and forms of tender may be obtained at H.M. Office of Works, Storey's Gate, London, S.W., on deposit of £1 1s. Tenders must be delivered addressed to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Oct. 18. **LONDON, S.E.**—(1) Construction of flooring over the first-class swimming bath at Laurie Grove, New Cross; (2) alterations to building, for the Deptford B.C. Specifications, conditions of contract, and forms of tender, together with plans relating to the flooring work, can be obtained on application at the office of the Borough Surveyor, J. Sutcliffe, Assoc.M.Inst.C.E., Town Hall, New Cross Road, S.E. A deposit of £1 1s. will be required for the plans. Tenders must be sent to Vivian Orchard, Town Clerk, Town Hall, New Cross Road, S.E., in accordance with the Council's regulations printed on the form of tender. Fair wages clause.

Oct. 19. **CAERSWS (Montgomeryshire).**—Erection of new chapel at Caersws for the C.M. Church. Plans, specification, and quantities may be inspected on written application to R. W. Davies, M.S.A., Architect, etc., Dolafon, Carno. The application to be accompanied by a deposit of £1 1s. Tenders on the prescribed form, to be delivered to J. E. Mills, Fronhafren, Caersws.

Oct. 19. **GLASGOW.**—Erection of the superstructure of the Labour and Telephone Exchange, College Street, Glasgow, for the Commissioners of H.M. Works and Public Buildings. Tenders are required for the whole work and not for separate trades. Drawings, specification, and a copy of the conditions and form of contract may be seen on application to Mr. Kennedy, Clerk of Works, General Post Office, Hanover Street, Glasgow. Bills of quantities and form of tender may be obtained at H.M. Office of Works, 3, Parliament Square, Edinburgh, on deposit of £1 1s. Tenders must be delivered addressed to the Secretary, H.M. Office of Works, etc., Storey's Gate, London, S.W.

Oct. 21. **WALES (Sheffield).**—Whole or separate tenders for the following works:— Wales Council school: alterations and additions (builder, joiner, slater, plumber, plasterer, painter, heating engineer), for the West Riding Education Committee. Plans may be seen and specifications with quantities, obtained on application to the Education Architect, County Hall, Wakefield. A plan may also be seen at the school. A deposit of £1 in each case must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield. Tenders must be addressed to Francis Alvey Darwin, Clerk of the County Council, County Hall, Wakefield.

ENGINEERING.

Oct. 10. **TREBOTH (Swansea).**—Laying and construction of a watermain in Knoyle Street, Treboth, for the Swansea R.D.C. Plans, specifications, and conditions of contract, may be inspected at the offices of, and any further particulars obtained, from the Surveyor, T. Trevor Williams, Alexandra Road, Swansea. Tenders to be sent to Edward Harris, Clerk, District Council Offices, Alexandra Road, Swansea.

Oct. 11. **RUGBY.**—Construction of an additional cell at their destructor, near Newbold Road, for the U.D.C. Plan to be seen in the office of D. G. Macdonald, AssocM.Inst C.E., Engineer and Surveyor, Rugby, from whom any further information may be obtained.

Oct. 11. **PORT TALBOT (Wales).**—Erection of a footbridge at Port Talbot Station, and of one at Tonygroes, near Port Talbot, for the Great Western Railway Co. Plans and specifications may be seen and forms of tender and bills of quantities obtained at the office of the engineer, Paddington Station. Tenders must be addressed to A. E. Bolter, secretary, Paddington Station, London.

Oct. 11. **ROCHDALE.**—Heating of three blocks of buildings at the Workhouse, and new arrangements for bathing in the male vagrant wards, for the Guardians. Copy of specifications can be obtained (on deposit of £1 1s.) from R. A. Leach, Union Clerk, and a copy of plans from A. G. Thornton, Limited, Paragon Works, King Street West, Manchester, at a nominal charge of 3s. 6d. Tenders to be addressed to the Clerk and delivered at the Union Offices, Townhead, Rochdale.

Oct. 11. **LONDON, S.E. & S.W.**—(a) Reconstruction of the bridge carrying Gipsy Road, in the Borough of Lambeth, over the London, Brighton, and South Coast Railway; (b) reconstruction of Roe Bridge, carrying Mitcham Lane over the River Graveney, and situated partly in the Metropolitan Borough of Wandsworth, and partly in the Croydon Rural District, in the County of Surrey, for the L.C.C. Drawings, specifications, bills of quantities, form of tender, etc., may be obtained on application to the Chief Engineer of the Council, Maurice Fitzmaurice, C.M.G., at the County Hall, Spring Gardens, S.W., upon deposit to the Cashier of the Council of £3 in each case. Full particulars of the work and conditions of contract may be obtained at the County Hall before the payment of this fee. Fair wages clause. Tenders must be upon the official forms and the instructions therein must be strictly complied with.

(*Contracts continued on page x.*)

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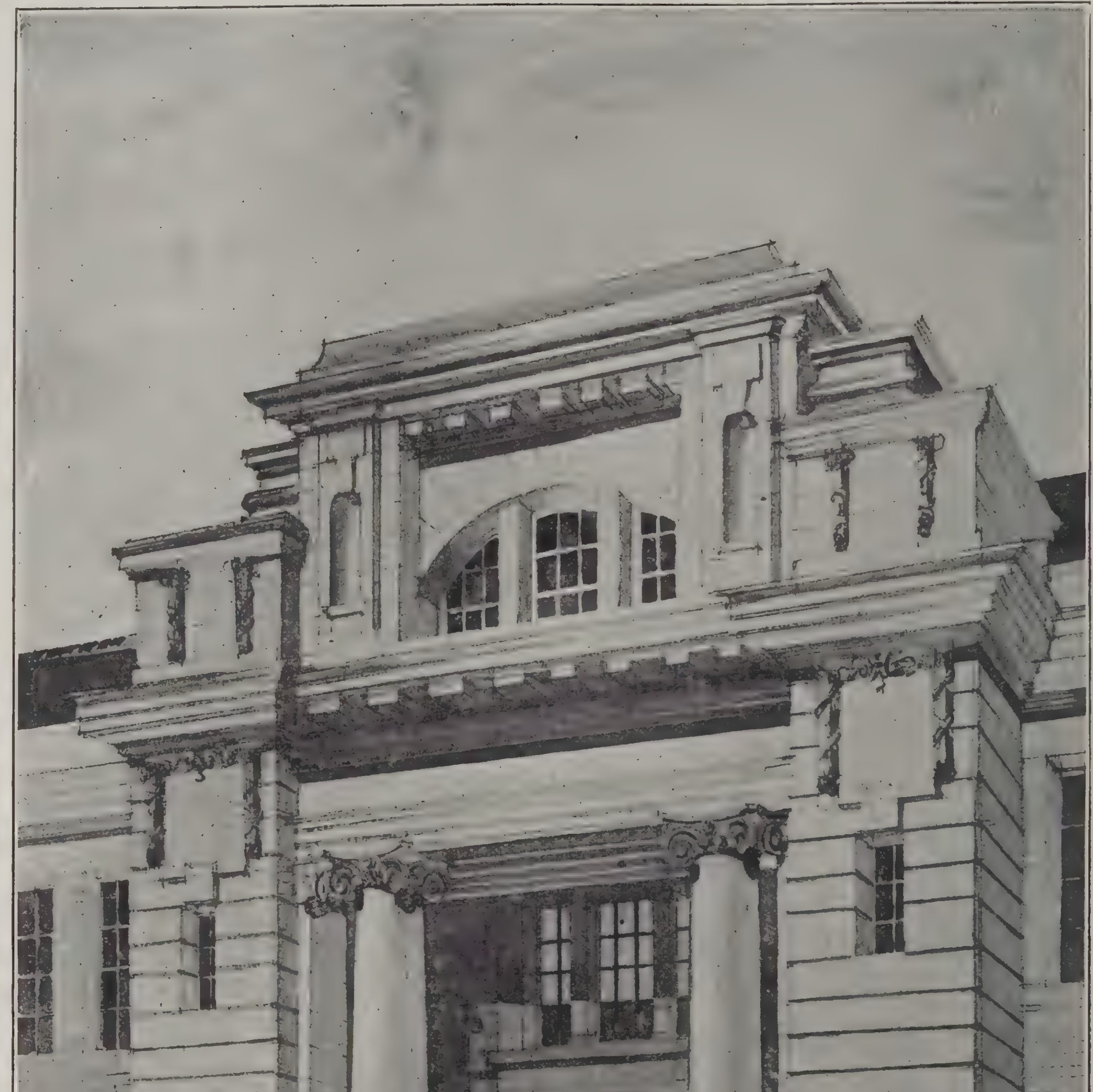
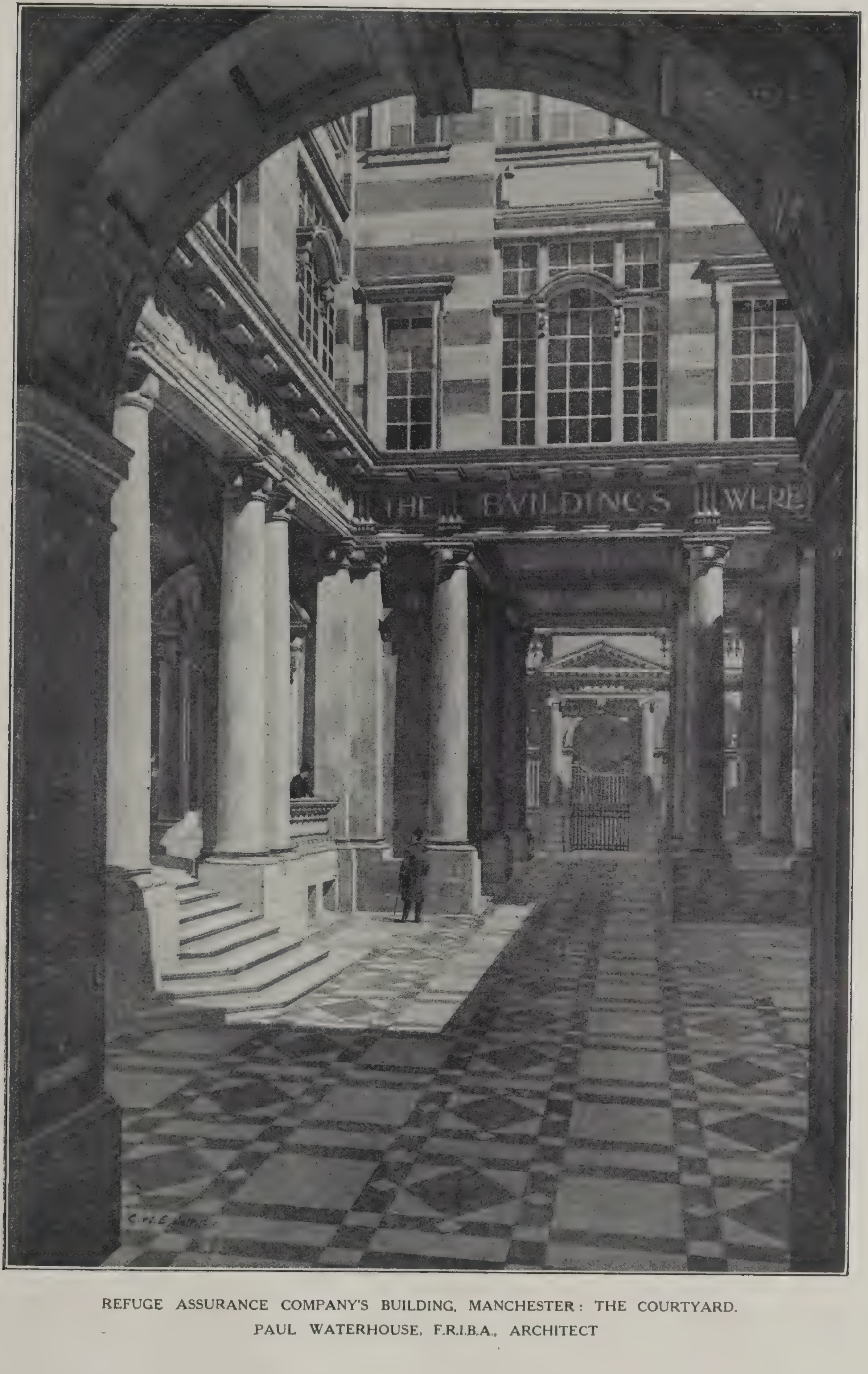


REGINALD G. KIRKBY, A.R.I.B.A., ARCHITECT.



REFUGE ASSURANCE COMPANY'S BUILDING, MANCHESTER: THE COURTYARD.
PAUL WATERHOUSE, F.R.I.B.A., ARCHITECT

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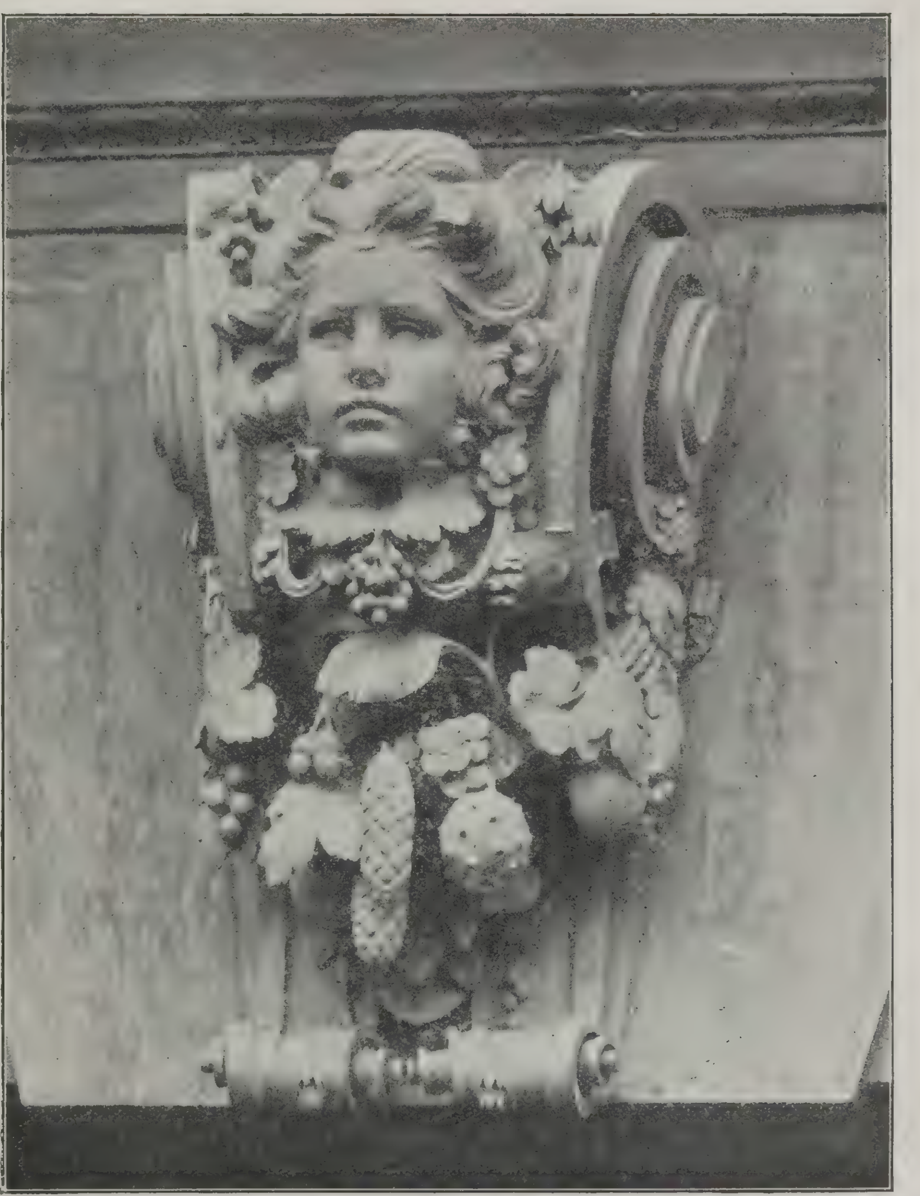
THE ARCHITECTS' &
BUILDERS' JOURNAL

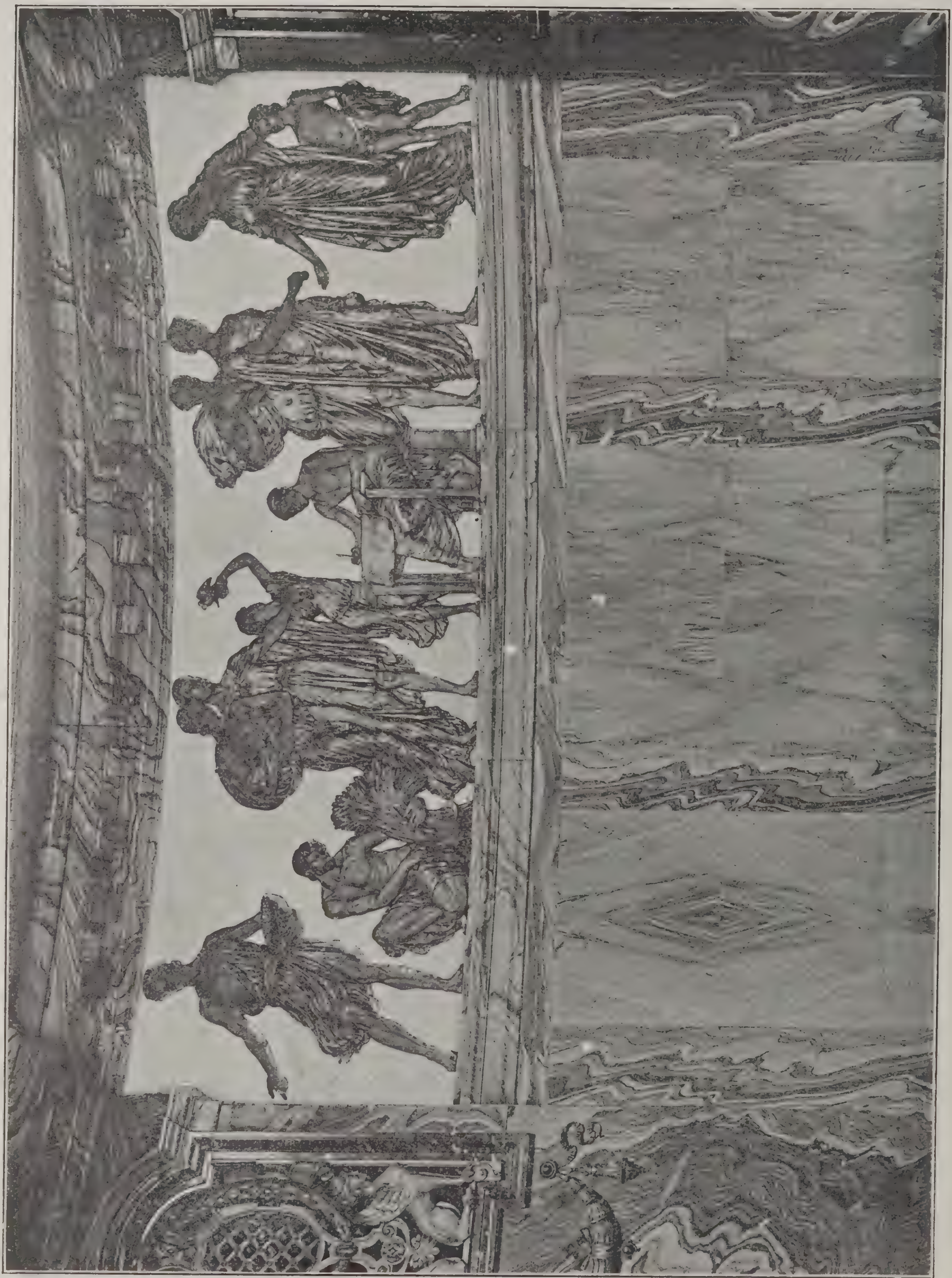
WEDNESDAY,
OCTOBER 12th, 1910.

Volume XXXII. No. 819.



There are two of these keystones on the building. They are similar, but not of identical design. Mr. Broadbent, of Fulham, was the carver.

CARVED KEYSTONE, LINCOLN'S INN HOUSE, KINGSWAY. E. L. LUTYENS, F.R.I.B.A., AND PILDITCH, CHADWICK, AND CO., JOINT ARCHITECTS.



The figures are of ormolu bronze, on a background of Penteli statuary marble. The panel shown represents "Providence," and was designed by Mr. F. Lynn Jenkins.

FRIEZE IN THE GENERAL OFFICE OF THE UNITED KINGDOM PROVIDENT INSTITUTION.
HENRY T. HARE, F.R.I.B.A., ARCHITECT.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

OCTOBER 12th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 819.

Note: The List of Contents will be found on Page V of the front advertisements.

The Town Planning Exhibition at the Royal Academy.

THE exhibition of town-planning drawings at the Royal Academy, which fills the whole of the rooms, is almost bewildering in its extent and variety; the more so, as on Saturday, when the rooms were open to the Press, the catalogue was not altogether complete, and the system of numbering not very systematic, so that in some cases it was rather difficult to identify some of the works described in the catalogue, and in one instance, at least, we found the plan of a street design in one room and the perspective view illustrating its proposed effect in another room. A great deal had to be done in a short time, however, and on the whole the arrangement is as good as could have been expected under difficulties.

In Gallery I. we commence with a number of plans of Rome from the sixteenth to the nineteenth century, illustrating the changes which have taken place up to modern times. One of these, a very large bird's-eye view of Rome at the end of the sixteenth century, is of interest as showing St. Peter's with towers or cupolas at the angles of the entrance façade; whether this really represents what existed at the time is not certain, though it is known that one such tower at any rate was built, and taken down again. The latest approved plan, of 1909, for street improvements in Rome, shows that one object of the scheme is to provide wider and more direct lines of approach to some of the bridges; the plan is probably laid down in a purely utilitarian spirit, otherwise we should certainly have expected to see some attempt to provide a wide street leading up axially to St. Peter's, to which there is at present no good approach. Indeed, there seems to be no care anywhere for vistas, which, considering the exceedingly rambling plan of the Roman streets, would be difficult to obtain without a great deal of demolition. The plan of Turin, which hangs near, is a great and instructive contrast in this respect. Among other exhibits in this gallery Mr. Raymond Unwin contributes restored plans of the layout of the ancient city of Ephesus in connection with the temple of Diana, of which more is known than of most ancient cities; and Mr. Leonard Stokes shows a plan for the approach to St. Paul's Bridge, laid out at right angles to St. Paul's Cathedral, so as to render St. Paul's dome the central object of the vista, an element in the scheme which ought to be strongly insisted on. In Paris there would be no need to insist on such a point; it would be recognised by everyone as indispensable; but London authorities are still blind to these considerations of axial planning, nor is the object much assisted by Professor Pite's bird's-eye view of a street leading up to St. Paul's, as the drawing does not even produce the effect of axial planning, though it is very effective as a study in black and white.

In Gallery II. the prints of old London squares, etc., lent by Mr. Batsford, make an interesting collection, also those illustrating the genesis of Regent Street and Regent's Park, lent by Mr. Ashbridge, the District Surveyor of Marylebone. Mr. Mawson's plan for the grounds in connection with the Peace Palace at the Hague (selected in a competition) is interesting on account of its place and purpose, but is what we should call a very one-sided kind of garden plan, for a situation in which dignity and centralisation would seem particularly called for. Mr. Flockhart's plan for the north side of the Strand (the island site) is shown here, but the fine perspective drawing illustrating it, though entered in the catalogue as here, must be looked for in Gallery I. Messrs. Nicholson and Corlette show the plan, and one or two perspective drawings, for a new square and public building in Kingston, Jamaica. They seem to have had a purely "gridiron" general plan of the city to work on.

In the Water-colour Room (distinguished in the catalogue as "Gallery IIA.") are a number of photographs and plans illustrating existing or intended suburban building and residential sites, of many of which we should say that they hardly represent any system of planning at all, but are of the usual type of building estate plans, with irregular lines of road, and block plans of houses dotted about at different angles, some nearer to the road than others, but with no obvious ruling purpose. Among the exceptions may be mentioned the plan exhibited by the Manchester Society of Architects for "A suburban development suggested by the Town Planning Act." This, which represents a combination of concentric with radiating lines of road, is a suggestive and well-arranged scheme. Mr. Herbert Welch's scheme for a block of cottages in the Hampstead Heath suburb, and the arrangement of the roadway in connection with them, is a good one; and Mr. Gilbert Waterhouse's plan of Jesmond Park Estate shows what we call a really architectural laying out of an estate of this kind, and should be compared with the general type of such plans, which are what we call estate agents' plans. Mr. R. C. Fry's plan of the Park Langley estate at Beckenham errs in the opposite direction of being too geometrical; it is a circular plan with a garden in the centre, which looks very good as a general scheme, but the circular planning has led to very awkward angles and corners in the detailed planning of the houses; not unavoidable, perhaps, but at all events they have not been avoided here; and a circular garden surrounded by houses is not the most hygienic arrangement for obtaining free circulation of air. Passing through into the small room generally known as the "Black and White Room," we find one of the most interesting series of drawings in the exhibition, which should not be overlooked—those illustrating the progress and development of Edinburgh, got up under the direction of Professor Geddes, President of the Edinburgh School of Sociology, by Mr. F. C. Mears, architect. In these we can trace the development of Edinburgh from the days when it was nothing but a solitary castle on a hill dominating the surrounding country; and it is curious to see how the first rude tracks across the plain and up the hill retained their direction as the subsequent lines of the principal streets. Another point that is brought out in these plans is the change made in the condition and surroundings of the new town by the introduction of railways. As at first laid out, the new town appeared to extend its growth as far as the demand for new residential streets increased; but as soon as the railways came in, the outskirts of the new town were pressed upon and confined by industrial buildings, and at present its streets and squares are being deserted for residences further out of the city; an object-lesson on the necessity for confining industrial buildings to quarters in which they can have free development without injuring property of another class.

But the great attraction of the exhibition is the series of splendid drawings which form a selection only from Mr. Burnham's studies for Chicago improvements. Chicago in general plan appears to be largely on the "grid-iron" system, with some wide avenues intersecting the system; this seems to be becoming the favourite principle in American town-planning; indeed, one of the drawings, showing a bird's-eye view of these miles of intersecting streets bounded by flat-roofed houses, has rather a terrible appearance; but it must be remembered that it is not really seen from this point of view, except by aviators. But the great points in the scheme are splendid; the "bird's-eye view at night of Grant Park, the Façade of the City, and the lagoons of the proposed Park on the South Shore," is almost like a dream city. What strikes one is that such good use has been made of the position of the city on the shore of a great lake; the plans seem all to be considered with reference to that position, including the fine idea of the chain of "lagoons" in the waterside park. We must confess, however, that the elevation of the domed building to form the "civic centre" is a little too tremendous, and shows what comes of too great a devotion to the Ecole des Beaux-Arts, whose students abound in these dreams of architectural megalomania; but we should have thought an architect of Mr. Burnham's experience had outlived that. In the same gallery is an almost equally fine and striking collection of drawings of the improvements, part of them, we believe, in the process of being carried out, in the city and park of Washington, which are on a magnificent scale, and when completed will make Washington one of the most stately cities in the world. A difficulty in the landscape has evidently been the immense obelisk forming the Washington Memorial, which by some oversight in l'Enfant's plan was placed out of axis with the Capitol; the obelisk is too colossal an affair to be taken down and rebuilt; apparently the difficulty has been approximately solved by the planning of a great avenue axial with the Capitol and the monument, and ignoring the fact that the obelisk is slightly askew to the central line, which in a general view would hardly be noticed. The whole series of plans deserve attention; they represent the finest scheme for producing a stately city effect since the vista of the Tuileries gardens and the Arc de l'Etoile was produced.

The remaining galleries contain for the most part grouped plans of the improvement schemes of various foreign cities, which it is impossible here to do more than mention; in fact no visitors will be able to do more than select the groups they most wish to study, as the collection is too varied and intricate to admit of complete study during the time that it will be on view. Gallery IV. contains a good many American schemes, including those for New York and Boston, and those, on a smaller scale, for Amsterdam and the Hague, by Herr Beslage; the Hague plan is a very good one, but here the town, with its canals and avenues, is already a kind of garden city, and lends itself easily to a decorative scheme of extension. Gallery V. is largely occupied with Vienna improvement schemes, and Gallery VI. with Berlin and other lesser German towns. There is a curious-looking model here in which the comparative amount of tramway traffic in the different Berlin streets is graphically shown by slips of wood raised in proportion to the amount of traffic or the numbers carried, mounting up to a kind of tower in the centre of the city; it is a new and rather effective way of illustrating traffic. The remaining galleries up to X.A are almost entirely occupied with the improvement schemes of German towns, showing how wide-spread is the town planning movement in Germany. Gallery XI. is occupied with French schemes—those of the Ministry of Fine Art, and of the Prefecture of the Seine; numerous plans of Paris improvements contributed by M. Hénard, city architect of Paris; and those of Havre, Lyons, and Nancy. Mr. Simpson lends various old views of Marli, Versailles, and Paris. M. Augustin Rey exhibits "astronomical studies, to serve as a basis for the laying out of towns of the future"; this is a rather new idea, at all events as reducing to a system considerations of orientation which have hitherto only been taken into account piecemeal (if at all) in regard to separate sites. He gives observations of the time during which the direct rays of the sun, on December 21st, strike on the buildings with relation to their orientation in ten of the largest towns in the world. It is worth while to quote his conclusions:—

> "The penetration of the sun's rays being the primordial condition for the healthiness of buildings, the astronomic study which has been shown in these general lines leads us to conclude that, for our temperate climates: (1) Streets running north and south are eminently healthy; (2) streets at an angle of 30 degrees to a line drawn north and south are healthy; (3) streets inclined at an angle of 45 degrees to the line north and south are moderately healthy; (4) streets running east and west are notoriously unhealthy.
>
> None of the great cities of the world which have been made the object of this study have ever pre-occupied themselves with the all-important question of the orientation of the streets."

The models of towns and suburbs exhibited are mostly rather crude in execution, and hardly show more than a plan and section would have shown, but there are two models in the galleries which merit attention, though not exactly connected with the main object of the exhibition. One is Mr. Gilbert Bayes's model of an equestrian statue, in Gallery X., on account of the unusual and effective architectura ldesign of the pedestal; the other is Mr. Holiday's model, in the centre octagon hall (VI.A), of the restored Acropolis at Athens, with the Propylæa and temples complete, and the colossal gilded statue of Athenè on her pedestal. Although there is nothing in this that is not familiar to all students of architectural history, it is really useful as giving the general visitor an idea of what the Acropolis was in its complete state.

The whole exhibition is a most remarkable one of its kind, such as we shall not perhaps see again in London, and every attention should be given to it while the opportunity remains.

The Town Planning Conference Programme.

THE programme of the papers to be read at the Town Planning Conference certainly promises a thorough consideration of the subject from all sides. We begin with the cities of the past, far back in antiquity; the planning of Greek cities by Professor Percy Gardner; town planning in the Roman world by Professor Haverfield and Dr. Ashby; and the development of town-planning during the Renaissance by a German visitor, Dr. Brinckmann. By the time these words appear those papers will have been read (on Tuesday morning), and we shall be in a position to say how much light the study of antiquity can throw on the subject. We feel rather sceptical as to the practical value of the attempted study of Hellenistic town-planning. Of Roman town-planning we know a good deal, but how are we to estimate Greek town-planning? We know a good deal about the town walls from Thucydides and other historians, but not much about the streets, except perhaps of Ephesus and its columned way; most of the sites are altered or laid waste. We have no doubt, however, that Professor Gardner will have made the subject interesting; all members of the Hellenic Society are aware of his ability in that respect.

Wednesday morning is devoted to the "cities of the present." Professor Baldwin Brown treating of "Town planning and the preservation of ancient features," on which latter point he is an enthusiastic and at the same time enlightened conservative; the city of the present "as a transition of urban developement," by Mr. C. G. M. Robinson, is not a very intelligible title. M. Bonnier's paper on "les Architectures obligatoires de Paris" we hope will have attention, as we presume it deals with the important subject of the legal control of street architecture, a subject much neglected and little understood in this country. A subject which is somewhat allied to that is the paper by Mr. Richardson Evans on "the restraint of advertising," on Wednesday afternoon, for that also is concerned with preventing by law the disfigurement of town architecture.

On Thursday morning the subject of "City development and extension" brings up what is really the central object of the Conference. The papers on this subject promise to be of value, particularly that by Dr. Stübben, "Recent progress in German Town Planning," for Dr. Stübben is perhaps the first authority on the subject, and Germany is known to have done more in scientific town planning than any other country. We shall be also interested to hear M. Augustin Rey on the subject. M. Rey, who made a great success some few years ago in a French model dwellings competition, is both a practical man and an artist, and capable therefore of considering every side of the subject. At the afternoon meetings on Thursday—in the afternoons all the meetings are double and simultaneous—the prevalent subject will be the ornamental side of town-planning; gardens and parks and "civic ornamentation"; the latter subject to be treated by Mr. Rickards, who will doubtless have something original and to the point to say on it.

Friday morning is devoted to the consideration of "Cities of the future," treated by an Englishman, a Frenchman, and an American—Professor Reilly, M. Hénard, and Mr. Burnham. This is a subject which will, at all events, afford scope for the imagination.

Saturday is devoted to the distant visits—Bath, Oxford, Cambridge, etc., and there will be no business done.

We cannot help thinking it would have been better to have arranged, as is always done at the Congress of French Architects, that the dinner should have taken place on the last evening of the Conference, as the close of the whole function, instead of on Wednesday, in the middle of the proceedings. A festive occasion of that kind comes better as a farewell meeting, after the serious business has all been got through.

Mr. Lloyd George and the Builders.

THE value of organisation was well seen in the invitation by the Chancellor of the Exchequer to the officers of the National Federation of Building Trades Employers to a "business talk" with him on the provisions of the Land Bill. The Federation was well represented by Mr. Smethurst, the president; Mr. J. W. White, the vice-president; and Mr. A. G. White, the secretary; but, as Mr. Smethurst pointed out, the three or four days' notice given was much too short to admit of anything like adequate presentation of the case for the builder. In the circumstances, however, the deputation did exceedingly well in placing before the Chancellor, in a plain and practical manner, certain apprehensions (Mr. Lloyd George was inclined to regard them as misapprehensions) with regard to a supposed double charge on the transactions of acquiring land, building on it, and afterwards transferring the underlease; with regard to the considerable increase in the law charges involved; and with respect to the supposed unfair incidence of the increment value duty; and with regard to the expensive complication of the whole machinery of transfer. Mr. Lloyd George thought that the builders, whose whole business, as he said, is involved in the Act, had become a prey to exaggerated alarms. Nevertheless, he virtually admitted that the deputation had proved to him that there was good ground for enquiry and review; and we think that these gentlemen are to be warmly congratulated on having created an excellent impression, and a more sympathetic atmosphere, in such high quarters. What is most strongly apparent is the enormous advantage, both to the Government and to the industry, of the existence of a reputable, responsible, and influential organisation to which, in momentous crises like the present, reference can be made for the discussion of the issues at stake. The incident, in fact, is in every respect highly creditable to the National Federation of Building Trades Employers, and Mr. Lloyd George's consultation with its officers is a most significant recognition of its position and power.

Liverpool Cathedral.

IT is of some interest to learn that a considerable alteration, which we conclude will be a great improvement, is proposed to be made in the plan and design of Liverpool Cathedral. The object is to provide a larger central space for great popular services, and with this alteration in the plan will be combined the feature of a central tower. According to the published report, it appears that the West Towers are to be abandoned if this scheme is carried out; but why should this be so? The combination of a great centre tower with two western towers subordinate to it is the typical English cathedral design, and everything will be gained by adhering to it. It appears that the architect's proposal, though it has not been formally accepted, was so far approved that he has been requested to make a perspective drawing of it for further consideration. But we again say—maintain the west towers as well. We only wish that at the same time some street improvement scheme could be taken in hand which would give a central and axial approach to the cathedral, instead of leaving it, as already observed, in the position of a cathedral round the corner.

"Town-Planning" at Monaco.

THE Principality of Monaco is to be laid out afresh. Boulevards are to be cut through, open spaces planted with trees, a magnificent sea-front is to be built and arranged as a public promenade, the works on the harbour are to be completed without delay, the gasworks are to be removed from the entrance to the harbour to a less conspicuous site, the famous terrace walk of the Casino is to be extended, and new post-offices are to be built. Much of the work has been already taken in hand, notably the completion of the harbour. There is no taxation in Monaco, municipal service being subsidised by the Monte Carlo Casino, whose allowance from this year is being increased by £40,000.

The Liverpool Sketch-Book.

THE School of Architecture of Liverpool University has recognised the twofold value—to him that gives and him that takes—of periodical publication. The Sketch-Book, of which the first number is before us, is at once a revelation of the excellent work that is being done by the students who are so fortunate as to have come under the direct influence of Professors Reilly and Adshead, and is also, it may be well supposed, a stimulus to the students themselves; for the ever-present knowledge that their work may be submitted to the public eye can hardly fail to put them on their mettle. The work shown is mainly that of present students, but designs by Professors Reilly and Adshead are included, as well as some measured drawings by travelling students. Elmes, Cockerell, Gandon, and Gibbs are the English masters who have been followed, and a few of the great Italians are also represented. There are, in addition, some original designs of considerable merit. Altogether, this Annual Sketch-Book of the School of Architecture of Liverpool University affords striking evidence of the forward movement in architectural education in which that institution is so well seen. The drawings are for the most part skilfully executed, and have been finely reproduced on art paper in a handsome quarto volume, which, issued at a popular price, affords an excellent means of extending the good work of the University far beyond its own confines.

The Ironmongers' Almshouses.

IT is gratifying to notice that the Shoreditch Borough Council have resolved to contribute £6,000 towards the purchase of the Ironmongers' Almshouses in Kingsland Road. An amendment that the matter should be deferred until the public subscription reached the sum of £3,000 was defeated. The local subscription towards the preservation of the almshouses has reached £1,643, and the balance now required is only £357, which it is expected the City Corporation will assist in contributing. It will be remembered that in 1908 the Charity Commissioners declined, in the public interest, to sanction the proposed demolition of these not unpicturesque old almshouses, which, with their acre of land planted with fine old trees, and their 200-years old garden, form part of "the last remaining garden city feature in an area where the density of population is 540 persons per acre." There is, besides, some degree of architectural interest in a building which, while opinions may differ as whether or not it is intrinsically beautiful, is nevertheless sufficiently characteristic of its period to warrant a keen desire for its preservation.

The Architect of the Scott Monument.

IT is noteworthy that there have been rival claimants for the honour of being the birthplace of George Meikle Kemp, the architect of the Scott Monument. Mr. Gilbert Rae, in a letter to the "Scotsman," establishes a good case for Hillrigs; and we are rather sorry that he has done it, or, rather, we are sorry that it should have been thought necessary to drag to light certain parish church records which, while they certainly afford some degree of presumptive evidence as to the place of the architect's birth, reveal also the bitter poverty and painful distresses into which his parents had fallen when the future architect was five or six years old. All the more honour to the genius that could emerge triumphant from such unpropitious circumstances; but nevertheless we wish that they had not been made public in a newspaper. Perhaps the feeling in regard to such matters is different in the North, where "honest poverty" is even praised by the bards; but in the South we are apt to believe that such matters are best buried in oblivion. Consequently we could have wished that Mr. Rae, in adducing his evidence from the records of Walston Parish Church, had been able to suppress what he calls the "pathetic interest" of the documents that he has examined. Still, there is no great harm done by the revelation of mere poverty; and any little indiscretion in the manner of making it is perhaps atoned for in the discovery that in Scotland the birthplace of an architect is a subject of popular interest. Whether the curiosity, piety, or local vanity, it were graceless to enquire.

Refuge Assurance Company's Building, Manchester.

(*See Centre Plate.*)

THE illustration of the Refuge Assurance Co.'s premises forming one of the centre plates included in this week's issue, shows the internal courtyard, which is a portion of the large additions which Mr. Paul Waterhouse is now adding to the already large building previously designed by his father, the late Alfred Waterhouse, R.A. The exterior of the original buildings is finished in red terra-cotta of a special hard glazed variety. The extensions have necessarily been executed, with respect to the outward elevation, in the same material; but in order to relieve the large mass of uniform colour, Mr. Paul Waterhouse has carried out the internal courtyard in two shades of buff, approaching in some cases almost to white. The courtyard is entered by an archway at the base of a massive tower over 200 ft. high, which forms the central feature between the old block and the new. The present contractors are Messrs. Armitage and Hodgson, of Leeds, in succession to Messrs. Normanton and Sons, and Messrs. W. Brown and Sons, who carried out in turn earlier portions of the additions. The clerks of works have been Mr. W. Robson and Mr. E. Kemp. The terra-cotta of the outer elevations is by Messrs. Doulton and Co., and Mr. J. C. Edwards, of Ruabon. The interior courtyard and the top of the tower are by Mr. Alfred Whitehead.

The Royal Palace occupies a large site on the island formed by the division of the Spree, an area characterised by the usual mediæval type of irregular plan.

UNTER DEN LINDEN, WITH ROYAL PALACE.

NEW DEPARTMENT OF TEXTILE INDUSTRIES, CITY OF BRADFORD.

(See Centre Plate.)

This block of buildings, now in course of erection for the housing of the Textile Industries Department in connection with the Technical College, are from the designs of Mr. Reginald G. Kirkby, F.S.I., A.R.I.B.A. The Education Committee, having in view the great importance of the industry in the commercial life of the city, decided that the department should be one of the best equipped educational centres for this work.

The frontage to Carlton Street is occupied by a three storey block, which is devoted to class rooms, exhibition and designing rooms, together with a large entrance hall and staircase. To the rear of this block are the combing, spinning, warping, and weaving sheds, which occupy an area of 16,000 superficial feet; adjoining which are the dyehouse, bleaching, singeing, and drying rooms, and storage and scouring rooms in the basement.

The power station is a separate block of buildings, further to the rear, and is connected to the main building by a covered corridor. This block consists of a power house, boiler house, accumulator room, stores, chimney (120ft. high), etc.

The buildings are faced with local stones with ashlar dressings. Special attention has been given to the façade to Carlton Street, the central portion of which is illustrated by the drawing. The floors and staircases throughout are of reinforced concrete, the class rooms and corridor being finished in wood blocks. The roofs are covered with slates, the glazed portion of the shed roofs being in patent glazing. The heating to the front block is by means of low pressure hot water, the sheds, dyehouse, and finishing rooms by low pressure steam, the dyehouse having in addition an installation of heating by hot air.

The building is now nearing completion, and since Mr. Kirkby's retirement from the position of City architect, the supervision of the completion of the work is in the hands of the present City architect, Mr. W. Williamson, Licentiate R.I.B.A.

THE LIVERPOOL KING EDWARD MEMORIAL SCHEME.

It is with unqualified satisfaction that we note the withdrawal of the project involving the mutilation of the south elevation of St. George's Hall.

On Wednesday, October 5th, the Liverpool City Council on the motion of Mr. Harmood Banner, M.P., unanimously agreed to the Finance Committee's proposal that the original resolution should be rescinded. The scheme had been launched little more than a week, but the storm of protest and criticism which resulted had convinced the Committee of the necessity of abandoning it. Their decision in the matter had been announced through the Press some days before, and received the warm approval of the Liverpool Architectural Society. The Council of the Society has in consequence passed a resolution expressing appreciation of the Finance Committee's action in withdrawing the recommendation in respect of the proposed memorial to the late King. A second resolution has been forwarded to the chairman of the King Edward Memorial Committee of the Corporation, suggesting the advisability of giving time for the expression of public opinion upon any subsequent proposal before placing the commission for the work, and further that before the proposal was made public an opportunity should be given for an expression of the opinion of the architectural profession. In support of this the Council point out that the placing of an important memorial in proper relation to its surroundings is essentially an architectural problem.

A lay suggestion, which, we understand, is in some danger of being considered seriously, on account of the extent to which it has been voiced in the correspondence columns of the local press, is to the effect that the King Edward Memorial should occupy the present site of the Beaconsfield statue, between the statues of the late Queen Victoria and the Prince Consort on the east side of the Hall, and exactly opposite the middle of the great colonnade. The monument to Disraeli, it is argued, could be removed to St. John's Gardens, on the opposite side of the building.

For our own part, we feel that this proposal has only a sentimental value to recommend its adoption. It is no doubt an attractive enough conception to place the Memorial between those already existing of the late King's illustrious mother and father, but artistically it would be scarcely less appropriate than the original scheme. The whole effect of the magnificent portico on the east façade is preserved by the open area in front. The new Memorial would certainly be a large affair, high, and occupying a great deal of space, and would degrade the Corinthian peristyle into a mere background of columns. In virtue of its position it would inevitably monopolise all attention, and we cannot but regard St. George's Hall as too beautiful and perfect an erection in itself to be put to any such subsidiary uses.

We sincerely trust that the Liverpool authorities may be prevailed upon to select a site for their Memorial anywhere rather than in the neighbourhood of St. George's Hall.

COMPETITIONS.

The Queen's University of Belfast.

Sir Aston Webb, R.A., has announced his awards in this competition as follows: 1, W. H. Lynn, Donegall Square North, Belfast; 2, Henry Tanner, F.R.I.B.A., and F. Dare Clapham, F.R.I.B.A., 12, Regent Street, London; 3, A. Marshall Mackenzie and Son, 13, Waterloo Place, London. All designs will be publicly exhibited in the Examination Hall of the University for seven days beginning on Tuesday, 11th October. The following is the Assessor's report:—"I have very carefully examined the 57 designs sent in in competition for this work. The majority of the competitors follow very closely the suggestions made to them, as representing the views of the Senate, for the placing of the blocks; but one competitor, the author of the design marked No. 12, has very largely availed himself of the provision in clause 3 of the conditions that competitors were "free to suggest any other sites they may consider preferable," and he places one of the new blocks for physics, zoology, etc., on the south side of the existing quad, and the other block on the west side internally, thus completing the quad and concentrating the buildings. This arrangement, he points out, permits the library to be extended on the west side, thus leaving the entrance from University Square uninterfered with, and he further suggests a site for the hall, as a pendant to the library on the other side of the main buildings. The whole scheme is, in my opinion, a very masterly one, and the best submitted in the competition. The author suggests housing portions of the physics and other departments in the existing buildings; this may be may not be desirable, but, as he also provides the two blocks asked for, this can be decided later in conference with those concerned. The President's house would remain with certain alterations, and his outlook for the present would be undisturbed. I further consider that the second best design submitted is that numbered 32, and the third that numbered 48. I have had the advantage, on the question of cost, of the advice of Messrs. W. H. Stevens and Sons, surveyors, who have made an independent estimate of the probable cost of these three designs, and who are of opinion that (exclusive of any special foundations) either of them could be executed within the ten per cent. margin of the sum mentioned in the conditions of £52,000. I therefore advise that, subject to the conditions laid down in the clauses 12 and 15 in the conditions and instructions to competing architects, the author of the design marked No. 12 be appointed architect to the new buildings, that the author of design marked No. 32 be paid a premium of £150, and that the author of design No. 48 be paid a premium of £100."

Denbigh Public Hall.

The following awards are announced:—1, Porter and Elcock, Colwyn Bay; 2, A. Farndale, Kilton Lodge, Brotton, S.O., Yorks; 3, Macintosh and Newman, Birkbeck Bank Chambers, High Holborn, London.

LIST OF COMPETITIONS OPEN.

OCTOBER 31, ETC., ROMFORD GARDEN SUBURB. Competitions in six classes for architects and in one class for builders for the best cottages, etc., erected in the Town Planning and Modern House and Cottage Exhibition, Gidea Park, to be held in June and July, 1911. Prizes amounting to £1,050. Particulars of the Secretary of the Exhibition, 33, Henrietta Street, London, W.C.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in last week's issue.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in last week's issue.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. The Manchester Corporation invite architects and others to submit competitive plans, specifications, and estimates for the laying-out of their Blackley Estate. Plans of the estate, etc., from the City Surveyor's office, Town Hall, Manchester. Deposit three guineas.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in last week's issue.

DEC. 14. DOUGLAS (ISLE OF MAN).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas, together with the erection of public hall or pavilion, and such additional rooms and accessories as each competitor may in his design suggest as in his opinion most desirable for a high-class pleasure resort. An estimate of the total cost of carrying out the whole of the works, accompanied by a general specification, must be submitted with the plans and designs. The sum available to be spent on all the work for which designs are now invited is £16,000. A sum of £200 will be awarded as a first prize, and two other prizes of £100 each. The successful plans and designs to become the absolute property of the landowners. Should one of the successful competitors be selected to carry out the works, the premium payable to such competitor will merge in his remuneration. Application to be made to Mr. Frank Cottle, borough surveyor, on a sum of £1 1s. being deposited with Mr. Alexander Robertson, town clerk, Town Hall, by December 14th.

NO DATE. ARMAGH CHURCH HOUSE AND SYNOD HALL. The committee having charge of the building of the Church House, to be erected on a site adjoining the Cathedral, invite correspondence from competent architects with a view to the preparation of plans. Full information will be given by Rev. C. K. Irwin, B.D., Brantry Glebe, Dungannon, Co. Tyrone, Hon. Sec. to the committee.

THE TOWN PLANNING CONFERENCE.

MR. JOHN BURNS'S OPENING ADDRESS.

Mr. Leonard Stokes received the members of the conference at the R.I.B.A. premises in Conduit Street on Monday morning, and at 12.30 he opened the exhibition at the Royal Academy, of which an account is given at the beginning of the text-pages of the present issue. In the afternoon, the Lord Mayor welcomed the members of the conference at the Guildhall, where the Right Hon. John Burns, M.P., who is president of the conference, delivered the inaugural address. In the evening a conversazione was held at the Institute. Tuesday's papers were as follows:—*Morning*: Prof. Percy Gardner, LL.D., "The Hellenistic Period"; Prof. H. J. Haverfield, M.A., F.S.A., "Town Planning in the Roman World"; Dr. Thos. Ashby, "Rome," and Dr. P. A. Brinckmann, "The Development of Town Planning During the Renaissance." *Afternoon*: H. Chaloner Dowdall, M.A., B.C.L., "The Growth of Legal Control over Town Development in England"; C. H. B. Quennell, F.R.I.B.A., on "Town Planning and Land Tenure"; Prof. Patrick Geddes on "The Civic Survey"; and Sir William Richmond, K.C.B., R.A., on "Some Factors in Town Planning." To-day (Wednesday), the readers and papers are: *Morning*: Prof. Baldwin Brown, M.A., on "Town Planning and the Preservation of Ancient Features"; Charles Mulford Robinson on "Cities of the Present as Representative of a Transition of Urban Development": Louis Bonnier, "Notice sur les Architectures obligatoires dans la Ville de Paris"; and Mr. H. V. Lanchester, F.R.I.B.A., on "Cause and Effect in the Modern City." *Afternoon*: Dr. Ing. Lilienberg on "Town Planning Work and Legislation in Sweden during the last Fifty Years"; Prof. S. D. Adshead, F.R.I.B.A., on "City Improvements"; G. L. Pepler, F.S.I., on "Greater London"; Richardson Evans, M.A., on "The Restraint of Advertising." On Wednesday evening, annual dinner of the R.I.B.A., at the Hotel Cecil, 7.30. The later dates are given under "Coming Events," page 374.

The Conference Opens.

The inaugural meeting of the Conference was, as indicated above, held on Monday afternoon at the Guildhall, when the delegates were briefly welcomed by the Lord Mayor.

Mr. Leonard Stokes proposed a vote of thanks to the Lord Mayor and Lady Mayoress, and remarked that it would interest them to know that the maiden name of the Lady Mayoress was Pugin.

The Lord Mayor, in reply, observed that his wife was the granddaughter of Augustus Pugin.

It was agreed to send the following telegram to King George: "The Town Planning Conference of the Royal Institute of British Architects assembled at the Guildhall send assurances of devoted loyalty to their patron."

Mr. Leonard Stokes on the Architect's Standpoint.

Mr. Leonard Stokes, in a few introductory remarks, said that town planning interested all citizens, but it was particularly interesting to those who were expert citizens. They architects thought the Town Planning Act did not go far enough, and they would have liked to have seen precautions taken to secure effective planning from the architect's standpoint. As they were meeting in the largest and richest city in the world, he hoped he might be allowed without offence to suggest that they would most carefully consider the lay-out of the great new bridge which it was intended to build across the Thames. He knew the Corporation intended to have the bridge properly designed, but the approaches were just as important.

MR. JOHN BURNS'S SPEECH.

The Right Hon. John Burns said that as their honorary president, he would like, on behalf of the Prime Minister and the Government, to welcome that large, distinguished, and international Congress to that old and beautiful hall in the ancient City and County of London. He would like to thank sincerely the Royal Academy for their generous assistance in providing what he considered the most human and useful exhibition he had ever seen within its walls. On previous occasions when he had wandered as Sam Weller would have said promiscuously around he had thought all was vanity and vexation of spirit, but this exhibition transcended in dignity any display for a human and beneficent object of this character that he had ever seen before. He wished to use this opportunity to thank all the governments, their officials, architects, engineers and surveyors who had contributed to make this exhibition the brilliant success he was sure they would all regard it, when they saw it.

The London that Wren Beautified.

Architects, he knew, wanted no reminding that this was the London that Wren beautified with his 55 churches, his great cathedral, his Chelsea and his Greenwich hospitals—and as a humble layman he (Mr. Burns) thought that in many respects Wren was not only our greatest architect, but also a master builder of whom the British race could be reasonably proud. He had a right to say that, because his birthday was on the same day as Wren's. They welcomed that Conference to London because it was the City which William Blake, the artist and the poet, idealised in his wonderful phantasy as a London, in his own words, "builded over with pillars of gold, and there Jerusalem pillars stood." He had another reason for quoting those beautiful words of Blake, for his wife came from Battersea. The Conference was meeting in London, which John Milton described as the Mansion House of liberty—a good political town planning phrase—a London which William Dunbar 400 years ago described in quaint language as "gem of all joy; London thou art the fairest of cities all."

The Dignity of London.

It must have been in many ways a beautiful city to have evoked Milton's words, Dunbar's eulogy, William Blake's dreams, and the cunning of Wren's brain and hand. That was the London which the poets saw and of which they wrote; but there was another London. Coming from the artistic and the architectural to the severely engineering, the delegates would see some magnificent structures worthy of the greatest men of any country of all time. They would see Rennie's great bridge, Waterloo, so grand, so dignified, so beautiful in its scale and poise; they would see Bazalgette's beautiful embankment; one of the finest pieces of work in any country from the engineering point of view; and do not let them forget that the engineers of the London County Council (and he was one of them) had tried to make even tunnels clean and decent and as beautiful as tunnels could be made. Rotherhithe and Blackwall tunnels were steps in the right direction. Then he would put in a word for Robson's and Bailey's fine schools, and it was only fair to that distinguished architect, Mr. Riley, and his splendid staff, that he should draw special attention to the fire stations that were now being dotted all over London. If the delegates wished to see London as it could only be seen from the artistic and architectural point of view, they must get up early in the morning.

A Cleaner London.

In his own time, thanks to the architects, he had seen the great City become increasingly clean, and had seen arise fine commercial palaces and banks, which some nations might do well to copy. The cost of the government of this great City amounted to £25,000,000 per annum, and the question was, "Is the work done worthy of the money?" He believed that the appearance of their roads, streets, buildings, and City as a whole justified the money spent, and whether they agreed with him or not, in his opinion it was a wise insurance for a big city to make to spend money for the improvement and development of the environment of its citizens. Some might say, could we not have too many bridges, too many wide roads, and too many beautiful buildings? To that he would say that he did not think the average citizen was sufficiently alive to the effect of structural environment, good buildings, and pleasant homes, upon the character, temperament, disposition, and energy of the people. To the foreign delegates he would say that some of the buildings which they would be privileged to see embodied the traditions of the best qualities of our race.

The Witchery of Westminster.

There was a witchery about Westminster, which he was sure would appeal to the foreign delegates. The history and mystery of its wonderful Abbey, the spacious dignity of the glorious Westminster Hall, would, he was sure, impress them as it impressed him when he was a Westminster apprentice. The history of Westminster Hall was history in tabloid of event. Of Westminster Hall it could be said that William Rufus put in the walls, Richard II. the roof, Sir Thomas a'Becket paid for its repairs, and Geoffrey Chaucer, the father of English poetry, was its Clerk of Works. Above all, it was the place where Richard Wallace was tried, where Cromwell was installed, and Charles I. was sentenced. Alternately palace and prison, Parliament and justice seat; nowhere in the world could there be seen a greater or a more magnificent and dignified building than Westminster Hall, which the delegates would proceed to visit.

London's Garden Squares.

He came now to another feature which might be seen in London, but nowhere else—he referred to the 400 garden squares, gardens and crescents, some open and some closed to all uses of eye and ear, the happiest, healthiest, and the luckiest bit of town planning ever done by any body of men. Inspired by enlightened self-interest, private owners had given to London a priceless heritage, which private owners must maintain, and which public authorities responsible for London's development must do everything within their power to secure every square yard and every blade of grass therein. Environment had a great deal to do with the character of a people. Let them walk through dignified Lincoln's Inn, as he did on the previous Thursday, or with mighty Verulam in Gray's Inn, and through the Temple—that beautiful possession for a busy city.

Venerable and Beautiful Buildings.

The reflection that remained with him on visiting those spots was that in no small measure the depth and breadth of the English law, and the respect it invoked in every country of the world, was due to the spacious serenity of its Inns of Courts, its old halls, and the old-world dignity of its schools, colleges, and meeting places. He referred to those venerable and beautiful buildings not as mere structures of brick and stone, or as centres for commerce: they were something more than a mere ancient nexus. They were places where utility, comfort, and beauty could be and ought to be combined so that the passer from what he saw could feel something to which his sense of beauty and his domestic comfort could respond, so that he should be all the better for having lived in and seen beautiful buildings every day of his life—he meant places which, by their beauty, their amenity, their grace, and, above all, their greenery, should create a joy in life.

How Mr. Burns Conceived the Town Planning Act.

Numbers of people had given a reason why he (Mr. Burns) was the author of the Town Planning Act, but they were all wrong. He would give them the real reason. As he had said, he was a Westminster apprentice, and he used to eat his breakfast on Mowlem's wharf overlooking Lambeth Palace. In his dinner hour he used to wander through the cloistered precincts of Westminster Abbey, and when he wanted leisure he would go and play in beautiful Battersea Park. Those early days did more to produce a Town Planning Bill 35 years after than all the criticisms and ridiculous objections of those gentlemen who thought they knew more about his Act than he did himself. This, of course, was a serious question, because it cost money.

Effect of Environment.

He believed that the people of our poorer towns suffered not only from lack of means, but from poverty of spirit. Their dismal temperament was often caused by their squalid environment. A cheerful spirit was very difficult in Tabard Street in the Borough. Hope was not very cheerful in Hard Street, Walworth, and they did not get much of the buoyant temperament in Old Peter Street, Westminster. They had all seen every day children's characters spoiled, and their natures stunted by the depressing circumstances under which they lived, and some of them thought that the town and district in which the money was made ought to be as cheerful as the town where it was too often foolishly spent. The spoiled life, and the soiled home in the slatternly street were too often the causes of drink, degredation, loafing, and dependence in many of our big cities.

The Soul-destroying Slum.

When a slum vanished a brewery failed, and public-houses disappeared, and to the ratepayer he would say that there was a greater reason than architectural symmetery and artistic appearance in a town planning scheme. Fifty per cent. of our total pauperism and more than 60 per cent. of its total cost, much of our lunacy, and a great deal of our crime, debility, and dependence were due to sickness. We could not avoid disease unless we let in the sun and air into our houses and streets. So long as the casual labourer was forced to live in squalid courts and ugly dwellings, so long would we continue to turn out nervous mannikins, instead of enduring men. Motherhood, childhood, youth, society, and the race demanded the demolition of the soul-destroying slum. It asked for the pleasant town, the comfortable and dignified city.

Domestic Architecture Our Pride.

It wanted its architects, and it would not be happy until it had got them. He thought it was quite possible for this to be done. We were making great strides in this movement in England—considering our ancient difficulties we were making greater strides than any country in the world. That was not to be surprised at, because domestic architecture had been our pride. The architect had been able to provide pleasant, comfortable, and beautiful houses for the upper classes. The middle classes, too, had been supplied with spacious and comfortable, if not always beautiful houses, and he would ask every architect not only to go to the Hampstead Garden City and Bournville and Port Sunlight, but to pay a quiet visit to Wadham Gardens and Elmsworthy Road, Hampstead, and see some of the most beautiful domestic architecture that could be seen in any part of the world. Therefore the upper and the middle classes were being fairly well provided for. The artizan jumped up and said he wanted something more than a slum—he wanted a home, and they had also to think of those even lower than the artizan. This great town planning movement must not end in a few large cities. In London the East End wanted West-Ending in its reconstruction. Wigan had got to be taken in hand as well as Westminster; the Potteries as well as London; and Bermondsey needed it more than Belgravia. The extending village wanted it as much as the large city. The growing town clamoured for town planning, and most of all, the straggling suburb gave them a stimulus for doing that which they ought to have done years ago.

Town Planning Means Better Housing.

For industrial, social, commercial, and imperial reasons, town planning must go hand in hand with better housing, wider roads, higher wages and increasing sobriety. Hitherto the owner, generally without foresight, and dull of outlook, had been really wasteful because he had mistaken parsimony for economy, and therefore he had narrowed the streets, and looked upon a beautiful vista as the eighth deadly sin. All that had to be altered. It was no good pitching into the jerry builder too much, for the jerry builder was creeping up. They saw that wherever a garden city was started it was surrounded by houses built by builders who were trying to live up to the example set in their midst. They had only to put their heads out of the railway train where no garden city was, and they saw ranges of buildings which made them ask, "Did Raymond Unwin have anything to do with that; has Professor Geddes been here; or has the Royal Academy had a garden party close by?"

The Inspiration of Garden Cities.

Garden Cities were magnificent in themselves, but they were a hundred times more useful for the inspiration they created and the example they gave. The philistine was being taught that houses, roads, bridges, and other utilities could be made and should be made, without loss of money, to harmonise with beauty. When that was done he believed the owner with imagination, instead of suffering, would benefit; and the community would also benefit enormously if these men would take courage with imagination in both hands, and do the thing as the best architects were now advising them to do it.

The Aims in View.

And what was their object? It was comfort in the house, health in the home, dignity in our streets, space in our roads, a lessening of the noise, the smoke, and the smells, and the nuisances that accompanied the city without a plan. Modern communities had little to learn which the ancients did not teach them in design, situation and town planning.

Our Ugly Railway Stations.

But the Ancients were better off in one respect than the mechanical modern. Rome, Florence, Salamis, and Athens did not have imposed upon them the vandal disabilities that the modern town now had as a burden. Athens did not have 6,000 miles of railway like London, built on ugly viaducts, and creating *culs de sac* of mean and poor streets. It did not have 500 ugly railway stations, spoilt and ruined by vulgar advertisement; no gas works and none of the 7,000 public-houses, nearly all at street corners, and occupying the best places, which ought to be occupied by banks, post offices, and police stations. Probably if they got rid of the 7,000 public-houses they would not want the police stations. Therefore they modern mechanicals, laboured under a disadvantage in having all the burdens of light, heat, smoke, traction, and rapid locomotion which the Ancients did not have. But the measure of their difficulty ought to be the extent of their inspiration and determination to grapple with these abominations. If they went to the top of the Monument and looked westward they saw Cannon Street Station hiding the river and city; and might he suggest to the City Corporation that in spending the 2½ millions they were going to probably spend on the new bridge, they should kill two birds with one stone, or three if they liked. Let them get rid of Southwark Bridge, and of Cannon Street Station; let them put Cannon Street Station on the southern side, and have a handsome bridge. He would be willing to draft a plan at once for that. Then standing on Westminster Bridge, where Wordsworth wrote that wonderful line, they saw that ugly iron railway bridge between them and Waterloo Bridge. They ought to put Charing Cross Station on to the other side of the Thames, and have a new Waterloo Bridge over the Thames there. They had Lambeth Bridge again, and he was wearing crape for the bumbles who allowed that monstrosity to last another week. And in regard to this district some Chelsea artists made the most gigantic blunder architecturally ever made in London, when, so that they might see the brown sails on the river by their studio windows, they prevented the early County Council from carrying the Embankment right the way to Hammersmith. Instead of a magnificent embankment they had the four tall square chimneys of the electric lighting station, out of scale, out of proportion, which ought to be down at Barking near the sewage works.

The Growth of Greater London.

It seemed incredible, but it was a fact that in 30 years 550,000 houses had been built in Greater London, and 8,500 new streets had been formed, but only 23 squares had been created. Then, coming to the country, every 15 years 500,000 acres were abstracted from the rural domains in agricultural England for new houses, railways, factories, and workshops. He thought that in a country of such a limited size as England they had no right to have this enormous tract of land and houses added to their cities and subtracted from the rural domains unless they had more organisation than they now had. Therefore he hoped the local authorities would work hand in hand in a neighbourly way; and the great merit of the Act was that they could commence at once. The Act had not been in operation six months yet, and the Local Government Board had not moved except to consult with competent authorities, but already 26 local authorities were preparing schemes, and many others were seeking advice.

The City Various.

As regarded the planning of towns, they must remember that cities should be as varied as the peoples who lived in them, and they ought not too to slavishly copy any body. Wide roads were good, but they did not want too wide roads, if it was at the cost of the tenement behind. Then in their wide roads they must be careful not to litter them with endless kiosks, posts, refuges, and other things. There was often a danger in space. He thought Trafalgar Square too small, and the Place de la Concord too large, beautiful although it was. He thought there were too many trees in Toronto, and not enough in Berlin.

Striking the Happy Mean.

What they had to do was to strike the happy mean and get the artist and engineer to co-operate with the medical officer to bring these things before a council, which should be guided by the highest artistic taste. Let them remember that London was a river, and they wanted the river opened up more than it was. In that respect, Paris and Berlin could teach us a magnificent lesson. It might be said that the taxpayer stood between all these necessary improvements, but he believed that the taxpayer was willing to pay the cost, because generally he endorsed the view that he (Mr. Burns) took, that such an expenditure was a good investment that had been too long delayed. The architect could help by converting the layman and the economist, who could be converted if only they would take the trouble to teach him. He looked upon that Conference as the very best thing the London architects had ever done for the glory of their city, and the dignity of their profession.

SHEAR-STRESS SAFETY IN BEAMS.

By PROF. ROBERT H. SMITH.

In this article Prof. Robert H. Smith calls attention to an interesting subject to which the text books have paid very little attention, and his exposition of it by means of the accompanying text and diagrams will therefore be widely welcomed. It embodies the application of the "new theory."

IN consequence of the new knowledge respecting the determining cause of fracture in structural material that has been acquired from recent experiment upon shear stresses, it has become of first-class importance to investigate the positions of the sections subjected to maximum shear stresses and the intensities of these stresses. The most important of the applications of the new theory is that to the strength of beams.

The beam-sections at right-angles to the neutral axis are those most easy to subject to stress analysis, and they have consequently been always selected for this purpose. The tensive, compressive, and shear stresses upon them have been calculated in all the ordinary mechanical text-books upon the generally accepted basis of "perfect elasticity," or constant linear proportion between strain and stress. But because the shear stresses so calculated have been always deemed of comparatively small importance except close to the points of support, where, for other reasons, there is always provided an excess of section, not much attention has been paid to the details of the shear-stress calculations. Thus, while tables of the "Moment of Inertia" of the various shapes of sections in use are found broadcast over the pages of text-books and engineering pocket-books, and the symbol I for this quantity is familiar to every tyro in mechanical design, the other quantity needed for the estimation of shear strength is hardly mentioned at all, and no special symbol for it has been adopted in English technical phraseology. I is the sum of the products of each small part of the sectional area by the square of its distance from the neutral axis. This other quantity is the similar sum of the products of each small part of sectional area by the first power of the same distance from neutral axis. In this article it will be symbolised by the letter J. If h be the distance from neutral axis of any one small strip of area of breadth b and depth dh, then $J=\int bhdh$. Only sections symmetrical above and below neutral axis are dealt with here, and the total depth of section is called H. It is necessary to find this sum of products not only for the whole section, but also for each part of it included within each depth h above, and h below neutral axis. The result of this partial summation is here called J_h; the J without suffix meaning the total of the whole section.

The intensity of pressure or tension at the distance h from neutral axis is $\frac{M}{I}h$. where M is the bending moment of external forces. This acts on the strip area bdh; so that, since $\frac{M}{I}$ is the same for all strips, the total pressure on either half of the section above or below the axis $\frac{M}{I}\frac{J}{2}$; and the total on the part lying between each edge and the strip at h from the axis is $\frac{M}{I}\frac{J-J_h}{2}$. Now take two sections a minute distance dl apart, and assume that the sections have the same dimensions, or that they differ so little that their difference produces no effect; then the difference of the above thrust on the two sections is wholly due to change in M, the bending moment. It is a matter of well-known proof that this change in M equals Fdl, where F is the total shear load upon the whole section. The difference of normal thrusts upon the two partial sections lying outside h, is, therefore, clearly $\frac{J-J_h}{2I}$ Fdl This difference produces shear upon the horizontal section parallel to neutral axis, and lying between the two vertical sections. The area over which this shear stress is exerted is bdl. Dividing the above shear force by this area we find the intensity of shear stress to be

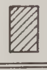
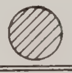
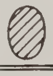
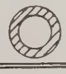
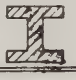
$$s=\frac{J-J_h}{2bI}F$$

This calculation explains the need of knowing the quantities J and J_h, in order to solve the problem of the shear-stress safety in beams, The values of I, J, $J-J_h$, $\frac{J-J_h}{2bI}$, $\frac{J}{2bI}$ and $\frac{J-J_h}{b}$ for the symmetrical sections in common use are given in Table I, printed below.

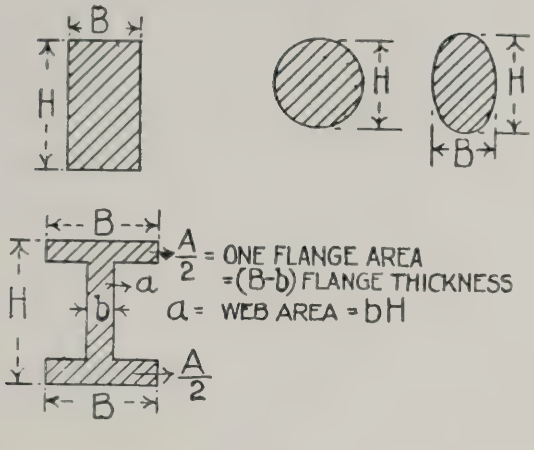
This shear stress is exerted equally on horizontal and vertical sections at each point. On these it co-exists along with the normal compression or tension $\frac{M}{I}h$. The two have to be compounded in order to find the "principal" or maximum normal stresses and the maximum shear stress. This latter exists upon the planes inclined 45 degress to those of the principal normal stresses. In the concrete and steel section of the "A. and B. Journal" of 5th January, 1910, there were given very simple diagrams whereby this compounding of stresses can be carried out graphically. These diagrams give the magnitudes of the principal stresses and maximum shear stresses, and the positions of the planes on which they act. The diagram suited to the present case is Fig. 1 of that article, because in beams p_2, or the compression or tension on planes parallel to neutral axis, is either zero or negligibly small. This Fig. 1 is here reproduced for convenient reference.

This maximum shear stress, upon which, according to modern experimentation, the risk of fracture mainly depends,

TABLE I

LINE	SHAPE OF SECTION						NOTES
1	MOMENT OF INERTIA $I = 2\int bh^2dh$	$\frac{1}{12}BH^3$	$\frac{\pi}{64}H^4$	$\frac{\pi}{64}BH^3$	$\frac{\pi}{8}tH^3$	$\frac{1}{4}(A+\frac{1}{3}a)H^2$	FOR TUBE SECTION t=THICKNESS FOR I SECTION a=WEB AREA
2	MOMENT OF AREA $J = 2\int bhdh$	$\frac{1}{4}BH^2$	$\frac{1}{6}H^3$	$\frac{1}{6}BH^2$	tH^2	$\frac{1}{2}(A+\frac{1}{2}a)H$	I SECTION WEB AREA $a = bH$ " " TWO FLANGE $A = 2(B-b)$ THICKNESS
3	PARTIAL DITTO $J_h = 2\int_0^h bhdh$	Bh^2	$\frac{1}{6}\{H^3-(H^2-4h^2)^{\frac{3}{2}}\}$	$\frac{1}{6}\frac{B}{H}\{H^3-(H^2-4h^2)^{\frac{3}{2}}\}$	$tH\{H-(H^2-4h^2)^{\frac{1}{2}}\}$	bh^2	FOR I SECTION b IS THE WEB THICKNESS
4	$\frac{J}{2bI}$	$\frac{3}{2BH}$	$\frac{16}{3\pi H^2}$	$\frac{16}{3\pi BH}$	$\frac{2}{\pi tH}$	$\frac{2A+a}{3A+a}\frac{3}{2bH}$	HERE b IS THE WIDTH AT NEUTRAL AXIS
5	$J-J_h$	$\frac{1}{4}B(H^2-4h^2)$	$\frac{1}{6}(H^2-4h^2)^{\frac{3}{2}}$	$\frac{1}{6}\frac{B}{H}(H^2-4h^2)^{\frac{3}{2}}$	$tH(H^2-4h^2)^{\frac{1}{2}}$	$\frac{1}{2}AH+\frac{1}{4}b(H^2-4h^2)$	IN TUBE SECTION AT HEIGHT h, WIDTH $b = 2tH(H^2-4h^2)^{-\frac{1}{2}}$
6	$\frac{J-J_h}{2bI}$	$\frac{3}{2}\frac{H^2-4h^2}{BH^3}$	$\frac{16}{3\pi}\frac{H^2-4h^2}{H^4}$	$\frac{16}{3\pi}\frac{H^2-4h^2}{BH^3}$	$\frac{2}{\pi}\frac{H^2-4h^2}{tH^3}$	$\frac{AH+\frac{1}{2}b(H^2-4h^2)}{(A+\frac{1}{3}a)bH^2}$	HERE b IS THE WIDTH AT HEIGHT h. $16/3\pi = 1\cdot69765 = 1\cdot7$
7	$\frac{J-J_h}{b}$	$\frac{1}{4}(H^2-4h^2)$	$\frac{1}{6}(H^2-4h^2)$	$\frac{1}{6}(H^2-4h^2)$	$\frac{1}{2}(H^2-4h^2)$	$\frac{AH}{2b}+\frac{1}{4}(H^2-4h^2)$	HERE b IS THE WIDTH AT HEIGHT h
8	$\frac{2J}{bH}$	$\frac{1}{2}H$	$\frac{1}{3}H$	$\frac{1}{3}H$	H	$\frac{A}{b}+\frac{1}{2}H$	HERE b IS THE WIDTH AT NEUTRAL AXIS.
9	$2J-bH^2$	$-\frac{1}{2}BH^2$	$-\frac{2}{3}H^3$	$-\frac{2}{3}BH^2$	0	$(A-\frac{1}{2}a)H$	HERE b IS THE WIDTH AT NEUTRAL AXIS
10	$\frac{H}{4I}$	$\frac{3}{BH^2}=\frac{3}{\text{Area}\,H}$	$\frac{16}{\pi H^3}=\frac{4}{\text{Area}\,H}$	$\frac{16}{\pi BH^2}=\frac{4}{\text{Area}\,H}$	$\frac{2}{\pi tH^2}=\frac{2}{\text{Area}\,H}$	$\frac{1}{(A+\frac{1}{3}a)H}$	

SHEAR-STRESS SAFETY IN BEAMS.



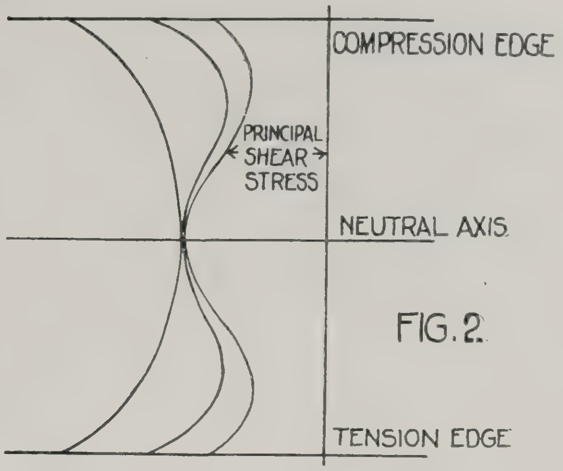


FIG. 2.

SHEAR-STRESS SAFETY IN BEAMS.

will here be called S. It has the value

$$S=\sqrt{\tfrac{1}{4}p^2+s^2}$$

Inserting here the values given above for beams subjected to bending, there results

$$S=\frac{F}{2I}\sqrt{\left(\frac{Mh}{F}\right)^2+\left(\frac{J-J_h}{b}\right)^2}$$

The values of $(J-J_h)\div b$ for various shapes of section are given on line 7 of Table I.

Naturally, the first enquiry made by the practical man is whether this S is greater at the neutral axis or at the top and bottom edges of the section. For a century past the strength of beams has been considered in terms of the tensions and compressions at the edges; and when the shear strength is considered, as at the points of support, the shear at neutral axis has commonly been taken, as a matter of course, as the most dangerous.

The above expression shows the values of S at neutral axis, and at edges to be

At neutral axis $S_n=\frac{J}{2bI}F$:

At top and bottom edges $S_e=\frac{H}{4I}M$

The values of $J/2bI$ are found on line 4 of Table I., and those of $\frac{H}{4I}$ on line 10 of the same. The first depends wholly on F, the shear load on the section; the second wholly on M, the bending moment. If the bending moment is greater in proportion to the shear load than a certain limit, then the shear stress at the top and bottom edges is greater than that in the centre of the section. This limit is

$$\frac{M}{F}>\frac{2J}{bH}.$$

The values of $2J/bH$ are found on line 8 of Table I. Thus, for a solid rectangular beam, if $\frac{M}{F}$ is greater than $\frac{H}{2}$ the edge stress is the greater; for solid circular and elliptical sections the limiting ratio is $\frac{H}{3}$; for a round thin tube section it is H.

Fig. 2 (above) gives the limit of $\frac{M}{F}$, above which the shear stress at the edges is greater than that at neutral axis.

TABLE II.

Edge shear-stress greater when

$$\frac{M}{F}> \quad \frac{H}{2} \quad \frac{H}{3} \quad \frac{H}{3} \quad H \quad \left(\frac{A}{b}+\frac{H}{2}\right)^*$$

The respective sections being in the order shown (1 to 5) in the accompanying diagrams.

*N.B.: Here b is the web thickness, and A is the area of both flanges reckoned on width (B-b), or (flange width—web thickness).

To illustrate the meaning of this result, take the simplest possible case of loading, namely, that of a single load W at the centre of the beam-length, this being supported "freely" at both ends. Here $F=\frac{W}{2}$ at all points of the span, and $M=\frac{W}{2}l$ at a section l from one end. Thus at l from the points of support $\frac{M}{F}=l$; and, if the section be a solid rectangular one, at all points further from the ends than half the depth of section $\left(\frac{H}{2}\right)$, the more serious shear stress occurs at the top and bottom edges. Only though the short lengths $\frac{H}{2}$ from either end is the shear stress at neutral axis more serious.

To further illustrate, let the span L be uniformly loaded with w per foot run. Here $M=\frac{1}{2}wl(L-l)$ and $F=\frac{1}{2}w(L-2l)$: so that $\frac{M}{F}=\frac{l(L-l)}{L-2l}$. This has the following values at different points of the span.

$\frac{l}{L}=$	$\frac{1}{10}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{2}{5}$
$\frac{M}{F}=\frac{l(L-l)}{L-2l}=$ Lx	9/80	4/15	3/8	2/3	$1\frac{1}{5}$

Near the centre the ratio becomes very large. Thus it is seen that for all solid sections the portions of the span over which the neutral axis shear is the more dangerous are limited to very short lengths at each end. For an I-girder section the neutral axis shear is the greater over longer lengths, and an example of this case will be found lower down.

In order to make the physical meaning of this important result still clearer, and in a general manner irrespective of the distribution of the load along the span, it should be noted that in pure beam action—that is, where the resultant of all the loads and supporting forces is parallel to the beam cross section, and where there is no superposition either of strut action or tie-bar action—the total shear load F is the resultant of all these external forces applied to either part of the beam lying on one side of the section considered. F is therefore the resultant force that exerts the bending moment M. Therefore, $\frac{M}{F}$ is the leverage of that resultant force; that is, $\frac{M}{F}$ is the average distance from the section of all the downward and upward forces acting on this one part of the beam. It is the ratio of this average distance or leverage to the depth of the section that determines whether the central or the edge shear stress is the greater.

It will be instructive to investigate in the next place the distribution of maximum shear stress over the depth of the section at those points of the span where the central and edge stresses are equal. There are usually two such points. At each $\frac{M}{F}=\frac{2J}{bH}$. At these points, therefore, the formula for maximum shear stress at each distance h above and below neutral axis reduces to

$$S=F\frac{J}{2bHI}\sqrt{4h^2+H^2\left(\frac{J-J_h}{J}\right)^2}$$

Illustrating by the case of the simplest form of section, namely the solid rectangle BH, this simplifies to

$$S=\frac{3F}{2BH}\sqrt{4\frac{h^2}{H^2}+\left(1-4\frac{h^2}{H^2}\right)^2}$$

Both at the centre where h=0, and at the edges where $h=\frac{1}{2}H$, this is easily seen to yield the same value, namely $\frac{3F}{2BH}$ a formula well known in scientific treatises on stress. An elementary use of the differential calculus shows that the rate at which S increases (in this special case) with h is proportional to

$$h(8h^3—H^2).$$

For small values of h near neutral axis this is negative, or S decreases from its value at the axis; while near the edges it is positive. At

$$h^2=\tfrac{1}{8}H^2 \text{ or } h=\cdot3535H$$

or just over $\frac{1}{3}$H, the decrease changes to an increase, the rate of change at this depth being zero. Here the shear stress S reaches its least value, which equals

$$S_{\text{minimum}}=\frac{\sqrt{3}}{2}\cdot\frac{3F}{2BH}=\cdot866\times\frac{3F}{2BH}$$

or just under $\frac{7}{8}$ of the maximum.

For any shape of section at this limiting point of the span where central and edge stresses are equal, the rate of increase of S with h is proportional to

$$h\left\{2J^2—H^2b\left(J-J_h\right)\right\}$$

At neutral axis this is always zero, because of h=0: so that here S always reaches either a maximum or a minimum value. It is a maximum, as in the case of the solid rectangular section, if the quantity within brackets is negative at neutral axis; but a minimum if this be positive. The value at neutral axis is $hJ(2J—H^2b)$ and the value of this latter factor within brackets is given in line 9 of Table I. It will be seen that it is negative for rectangular, solid circular and elliptic sections, and zero for *thin* **tube sections.**

This thin tube section, has the very remarkable mathematical property of making

$$2J^2-H^2b(J-J_h)=O$$

at all points of the depth of the section; so that, in this case, the maximum shear stress S at this point of the span is uniform over the whole section.

Returning now to the consideration of the general value of S at all points of the span, and at all depths in each section, we find that its rate of increase with the distance h from the neutral axis is proportional to the following fairly simple functions of h in the various shapes of section.

For section 1 $\frac{dS}{dh}$ proportional to

$$h\left\{\left(\frac{M}{F}\right)^2-\tfrac{1}{2}\,(H^2-4h^2)\right\}$$

For section 2 and 3 $\frac{dS}{dh}$ proportional to

$$h\left\{\left(\frac{M}{F}\right)^2-\tfrac{2}{9}\,(H^2-4h^2)\right\}$$

For section 4 $\frac{dS}{dh}$ proportional to

$$h\left\{\left(\frac{M}{F}\right)^2-2\,(H^2-4h^2)\right\}$$

For section 5 $\frac{dS}{dh}$ proportional to

$$h\left\{\left(\frac{M}{F}\right)^2-\frac{AH}{b}-\tfrac{1}{2}\,H^2-4h^2)\right)\}$$

In each case $\frac{dS}{dh}$ increases with h, Therefore, if its second term within $\{\ \}$ starts from neutral axis (h=o) with a zero or positive amount, it remains positive throughout, and the edge value of S is certainly the greatest anywhere over the section. On the other hand, if its second term within $\{\ \}$ starts with a negative value, this negative value decreases towards zero; it reaches zero at a certain value of h, where the value of S dips down to its minimum; beyond which point it increases positively, as also does the value of S. In this case again S increases out to the edge, where there is found its greatest amount outside the $\pm$ depths where the minimum is reached. It then only remains in this case to examine whether this edge value or that at the neutral axis is the severer stress. This is to be done by the formula already given, namely, $\frac{M}{F}$ greater or less than $\frac{2J}{bH}$ where b is the width of section at neutral axis; see line 8 in Table I.

It may be remarked in passing that this comparison by help of line 8, Table I., suffices in all cases. There never occurs a maximum between neutral axis and edge: only in some cases a minimum, whose amount is of comparatively little practical interest. The variation of S between centre and edge is always of one of the three sorts shown by the curves in Fig. 2.

Thus, the whole problem reduces to one of extreme simplicity, namely, to calculate the two stresses $\frac{J}{2bI}$ F for neutral axis, and $\frac{H}{4I}$ M for edge, and to ascertain that neither of these is dangerous. In line 10 of Table I, $\frac{H}{4I}$ is expressed in terms of the sectional area. It is always of the form $\frac{n}{\text{Area } H}$ where the numerical factor n depends on the shape of the section. $\frac{M}{H}$ is the force that would exert the moment with the leverage H, that is, each of a pair of opposite forces concentrated at top and bottom edges of section that would produce the actual bending moment. This force distributed over the section area and multiplied by the factor n gives the magnitude of the chief shear stress at the edge. Throughout nearly the whole length of most girders this is the most dangerous shear stress occurring over the whole of each section.

Moreover, it is easy to show that, although close to the supporting ends, the stress at neutral axis is the greatest on these sections, still it is less than the stress at the edges near the middle of the span, if the section be uniform throughout the span.

Thus, a beam of uniform rectangular section supported at both ends and loaded by a single load W at centre is exposed to a shear stress at neutral axis of amount $\tfrac{3}{4}\,\frac{W}{BH}$ at the ends; but at the centre of span the shear stress at the edges is $\tfrac{3}{4}\,\frac{W}{BH}\,\frac{L}{H}$, which is greater than the other in the proportion L/H. If the load be uniformly distributed along the span, this ratio is L/2H for rectangular section, and L/4H for a thin tube section. For an I-girder section this ratio is $\tfrac{3}{4}L/\left(\frac{2A}{b}+H\right)$.

Here $\frac{2A}{b}$ may be looked on as the height of a strip of web thickness which would have double the two-flange area; for example, if flange and web thickness were equal, and flange width were B, then $\frac{2A}{b}+H=4B+H$ nearly. Needless to say that it is rarely the case that $\tfrac{3}{4}$ of the span is not much longer than this.

ARCHITECTURAL ASSOCIATION.

POINTS FROM THE PRESIDENT'S ADDRESS.

Mr. Arthur Keen, F.R.I.B.A., delivered, on October 10th, his presidential address to the Architectural Association, from which the following extracts are taken:—

I urge you to make yourselves masters of all that can be taught in the schools about the material of design; all about windows, piers, columns, tracery, parapets, vaults and arches and pediments; about the placing of sculpture, the uses of ornament, and its scale and forms. How the Romans built their vaults and arches and the 13th century masons theirs, and what the value of each kind was when done. Learn how spires are placed on towers, and how each method affects the outline and wherein the outline of a good steeple varies from a bad one, and how the difference has been achieved. Learn how heraldry should be used, and what relation it should bear to other decorative work. Learn why foliage should be formal and conventional in some places, and free and natural in others. Study until you know it as a matter of instinct where animal forms or figure sculpture may be full size or more, and when they should be small. Learn how far the disposition of a mediæval cathedral is due to its uses and how far to its structure, and how each may need to be modified in the present day to meet altered conditions without violating principles of design or construction.

When you have mastered such things, and so made them part of your equipment as to use the knowledge of them without conscious effort, then and not till then will you be able to make your art adapt itself to the new methods, materials, and requirements of progressive civilisation. But it is in this respect that you will enjoy greater advantages than the men of the generation before you; you will have greater ease and adaptability, more confidence in treading new paths, and more certainty of success in solving new problems.

With regard to styles, Mr. Keen said: I hope to see the Classic revival producing men who will rival the buildings of Elmes and Barry, teachers who will speak with the authority and conviction of Morris, sculptors with the resource and power of Alfred Stevens, and writers who will do for it what Sir Walter Scott did for the mediævalists.

I believe myself that the soundest basis from which to work is a thorough knowledge of Greek work. There is a quality of adaptability in it that gives an instinctive impression that the Greeks would have been better qualified to deal successfully with the problems of present-day methods, requirements, and materials, than any who preceded or succeeded them.

The features of conventional Classic—the columns and entablatures, plinths and pediments, and other elements of it are entirely out of scale with modern units of measurement, and the result is that all kinds of subterfuges are resorted to in order to secure the necessary dimensions without depriving buildings of light or convenience. This is found even in the work of such a master as Sir Christopher Wren, and at Greenwich Hospital there are to be found rooms lighted by tiny openings that are simply ridiculous and inadequate. I feel confident that the Greek artists would have met our conditions in a natural, unaffected manner, and with perfect success from the architectural standpoint, and it is in the study of the methods and attitude of the Greeks that our best hope for the future lies.

In commending to attention the series of lectures on town planning to be given by Mr. Raymond Unwin, Mr. Keen said: They are school lectures, but in view of the London Congress bearing on the subject it has been decided to throw them open to the general body of members and to interested non-members. The near future will see such great developments in the arrangement and re-arrangement of towns and suburbs and villages, that the subject is obviously one in which architects should be well grounded. The value of the art of town planning speaks for itself. It is painful to think of London's shortcomings and how few good buildings there are here, comparatively speaking, that can be really well seen. The Athenæum Club, the Alliance Assurance Offices, St. Martin's Church, the Royal Exchange, are a few that stand out in favourable contrast to the multitude of finely designed structures of whose existence one is scarcely aware; and the new buildings in the Strand illustrate the good effect gained by a well studied lay-out of new ground. Lost opportunities, however, abound in all directions. Think how grand must have been the effect of the steeple of St. Magnus Church when it stood over the actual footway of the old London Bridge approach, or what a fine view the spire of St. Bride's Church is as seen from Fleet Street at the end of the narrow turning that leads down to it, although even that view was greatly injured by closing it to some extent a few years ago; and then consider what a difference to the aspect of London would have been made if mere details of town planning such as these had received due attention in the past. Our squares are being ruined at the present time by new buildings utterly out of keeping with the old ones; the Marble Arch has been made ridiculous; wide streets are belittled by buildings far too high in proportion to them, and good skylines are spoilt by horrible erections towering up from the back of buildings as if architectural design in cities were a matter of front elevation and nothing else. It is time that errors of this kind were checked, and if town planning is properly studied and followed up by architects public opinion will soon follow, and these matters will receive proper attention and proper control. I commend these lectures as a preliminary exercise in a most valuable study.

THE IMPORTANCE OF SYSTEM IN BUILDING WORK.

AMERICAN METHODS OF REINFORCED CONCRETE CONSTRUCTION.

BY MORITZ KAHN

In a paper entitled "American Methods as applied to Reinforced Concrete Contracting," read before the Institute of Builders on October 5th, Mr. Moritz Kahn described very clearly and instructively the methods by which the American builders secure such remarkable results in reinforced concrete construction; his experience in both countries enabling him to institute many valuable comparisons. It will surprise many contractors in this country to know that, in spite of the heavier cost of labour and materials in America, the unit costs of American construction are generally lower than with us. The refinements of organisation which ensure this result are lucidly described.

THE object of this paper is to review some of the American methods of carrying out reinforced concrete contracts. No suggestion is made that such methods are better than those adopted in this country; on the contrary, there are many details in English contracting which would prove of inestimable value if they could be inaugurated in the States. The methods of different countries have their own characteristic features, and comparisons are not only interesting, but often beneficial. In the limited time available, however, it will not be possible to do more than to touch on various interesting points presented by so wide a subject.

Comparative Unit Costs.

The unit costs of American constructions are generally lower than unit costs here, notwithstanding the higher rate of wages paid and the greater cost of materials in America. It may be granted that buildings here, in many instances, are of a more substantial character, but the difference in cost is not so much due to that consideration as to the saving of waste labour and materials by superior organisation. Competition in the States is as keen as in this country, and probably more so, for contractors spring up so rapidly there. The reason of their success under such keen conditions is invariably a question of fine organisation and rigid supervision. The idea that the American contractor is only anxious to fulfil his contract in the shortest time with the greatest amount of profit, paying no attention to the quality given the owner, is quite a mistake; for, like the English contractor, he is jealous of his reputation for doing good work; and if at times quality is sacrificed for the sake of speed in construction, it is due to conditions which are forced upon him.

The Plant Employed.

The investigation of contracting methods begins with the question of the plant employed. The reputation of a contractor may be fairly gauged by the completeness of his mechanical equipment. It is his object to reduce manual labour to the utmost limit, for the trade unions are so strong in many localities that the employer is merely the servant of the employee. The more efficient the mechanical equipment of the contractor, the less he is subject to the exactions of trade unions, the leaders of which do not hesitate to call a strike for the most insignificant of causes.

Mechanical Mixers

are used wherever possible; and even in constructions which involve as little as £1,000 worth of work, at least one concrete mixer is installed, sometimes several. Having a choice of many kinds, he instals the one most suited to the needs of the particular job in hand. The handling and mixing of concrete governs the cost to a great extent, and the use of a batch mixer is always advisable. When the concrete is mixed by hand it is turned from six to eight times, but in a mechanical mixer it is turned at least twenty times in a much shorter period, and with a considerable saving of expense. The cost of hand-mixed concrete varies from 2s. 6d. to 4s. per yard cube; the same concrete will be mixed by machine at a cost of 6d. to 1s. 6d. per yard cube; so one can readily see the economy of using a mechanical mixer (Fig. 1). The plant, whenever possible, is laid out so that the raw material can be dumped into storage bins, the aggregate into one, and the sand into another. From the storage bins each is spouted into a measuring hopper, whence it is again spouted into the mixer. Such an arrangement eliminates considerable manual labour. The concrete is mixed very wet; this not only gives a better finished surface and a denser and stronger concrete than a dry mixture, but it is also more economical in the placing, as it will pack itself.

Testing the Cement.

All cement used in the construction is tested on arrival. An up-to-date contractor will have his own apparatus, making his tests for his own satisfaction, apart from the requirements of the specification. He pays for a certain quality, and by repeated testing determines for himself whether he is getting his money's worth; besides which, frequent testing saves the contractor any future trouble arising from the use of poor materials.

Depositing the Concrete.

When deposited in mass, as for foundations, trenches, walls, etc., the concrete is trucked to the points where required; when it is used in small batches hand barrows are used. The American barrow is quite different from the English barrow, the latter being generally made of wood in a substantial heavy manner, with a capacity of from one to one and a half cubic feet of concrete. The American barrow, on the other hand (Fig. 2), is wholly or partly constructed of iron, in the latter case in the form of a metal tray on a wooden frame, which saves weight, and the construction is such that the load is well balanced on the wheel, with the result that a greater quantity of concrete can be handled with no extra exertion on the part of the workmen. Ordinarily, this barrow has a capacity of four cubic feet. The English barrow may last longer than the light metal barrow, but the saving in cost of the former is soon lost in the lesser amount of work performed.

Hoisting the Concrete.

The means of hoisting concrete is carefully studied. Several methods are used, but never by single barrows with the three-chain attachment at the end of a cable, so often seen in England. Elevators or cages in duplicates are frequently used, one hoisting a loaded barrow, the other lowering an empty one. The advantage of the double over the single elevator type lies in the fact that the workman who brings the full barrow, immediately returns with the empty one, whereas in the single elevator type he must wait until the elevator has made a complete round trip for this same operation. Preference, however, is generally given to the method of hoisting concrete by means of self-dumping buckets (Fig. 3). The entire batch of concrete is spouted from the mixer directly into the bucket, which is hoisted up a tower and automatically dumped at the proper level into a hopper, from which the material is fed into hand barrows and delivered to its final position.

Characteristic Plant.

Following is the operation of a characteristic plant. At the extreme left you see the bank of raw material which is shovelled into hand barrows and taken to a bucket let into the ground. When properly gauged it is mechanically raised to the required level, and dumped into the shoot which feeds the mixer. In this instance a batch consists of a half cubic yard. After passing through the mixer, the concrete is spouted into a second bucket, also sunk in the ground, as shown on the right of the mixer. The second bucket is then joisted up a tower, being automatically dumped into a hopper at any desired level. A man in charge of a gate or valve at the hopper fills the barrows as they are brought up. Attention should be drawn to the fact that whenever hand barrows are used, as shown here, two runways are employed, the

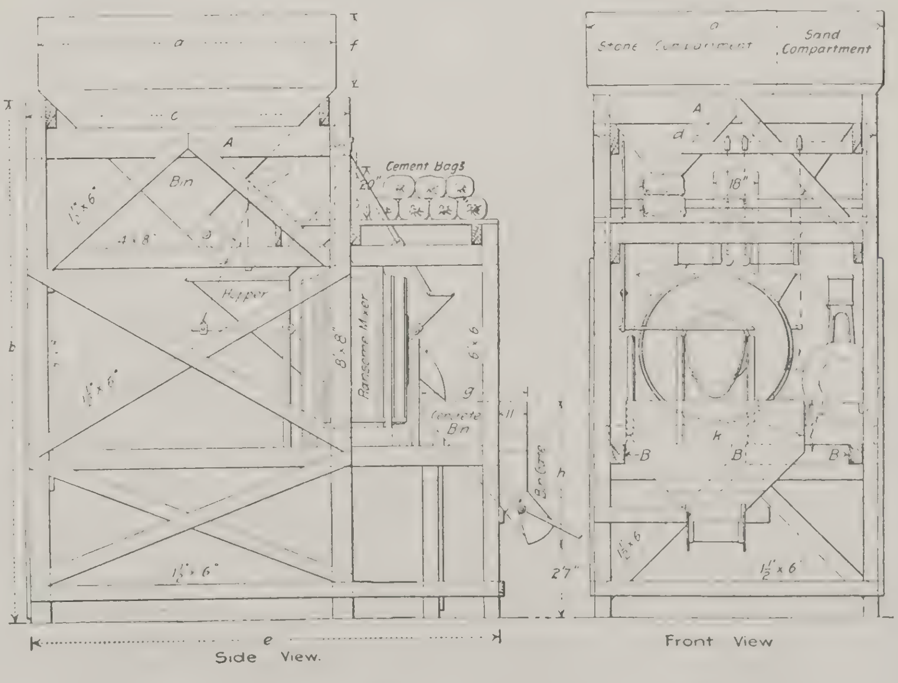


FIG. 1.—TYPICAL AMERICAN CONTRACTING PLANT.

men coming to the hopper with their empty barrows on one runway and leaving the hopper with a loaded barrow on a second. Thus a continuous string of men move about without the interference which would take place on a single runway. This plant handles 125 cubic yards a day. The only manual labour consists of feeding the raw material bucket on the ground, and delivering the mixed concrete from the hopper on the floor level into the forms. One boiler and engine runs the entire plant, and with the service of twelve men, 125 cubic yards of concrete are mixed, hoisted, and placed in position in a day of eight hours. The average cost for all the labour involved is 1s. 4d. per yard cube. It should be noted that on this particular building four complete plants, as described, are used, and from this can be seen how much plant a contractor will instal in order to eliminate hand labour.

Wherever possible, advantage is taken of natural conditions at the site for arranging an economical plant. In the construction of a large coal storage bin at Scranton, Pennsylvania, there was a hill close by, on the top of which was placed the mixer. The raw material arrived in trucks at the foot of the hill, was unloaded and carried to the top by means of a belt conveyer; passing through the mixer, the material was discharged on to a second belt conveyer, which was slung up on a gin pole in such a manner as to be flexible and movable from point to point. The concrete was carried along by this belt conveyer to a spout at the end, which fed the material directly into the forms. Fig. 4 shows the detail of the spout, where the material is seen being deposited into the forms. In this instance the concrete was mixed and placed at a cost of 1s. per cubic yard. One does not always have such favourable conditions, but this plant is described merely for the purpose of showing the ingeniousness of the superintendent in taking advantage of that state of affairs which he found at the site.

Erection of Centering.

The erection of the centering is carefully studied in large works. The design of its construction is not left to the superintendent in charge (or foreman, as he is called in England), but is schemed out at the head office before the work is commenced, so as to give the greatest economy. The amount of timber used is of secondary consideration to the amount of labour involved. The forms are generally built in panels to enable their being repeatedly used on different portions of the work. The are erected so that the supports of the decking slabs, together with the beam sides, can be removed first, leaving the beam bottoms with their props in position for a longer period. In centering for the columns, the four sides are built up complete, and the concrete is poured in from the top; instead of the three-sided centering so commonly seen in England, where the concrete is poured in from the side of the column, the fourth side being boarded up as the concrete work proceeds. A hand hole is left open at the foot of the column so that all wood blocks, shavings, etc., which may have fallen into the form can be removed before the concreting is begun. Pouring concrete into columns from the top is more economical than placing it from the side. In column centering, bolts or clamps are used to a considerable extent. For walls, the centering is also built in panels which are held together by bolts and kept the correct distance apart by means of braces. This arrangement enables the centering for walls to be struck in three or four days' time for use in succeeding portions of the work. The bolts are removed from the concrete, and the holes so left are patched up with cement mortar. The actual work of placing the concrete is not commenced until a considerable area of centering has been constructed, as the laying of the former involves much less time than the erection of the latter, and with a large portion of centering completed, opportunity is given for working the concrete plant to its fullest capacity, which gives the best and most economical results.

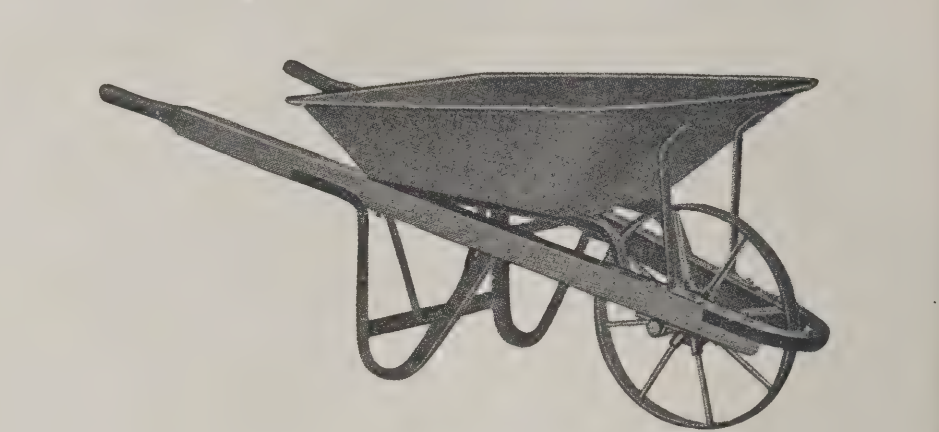


FIG. 2.—CONTRACTORS' IRON WHEELBARROW.

The American Scaffolding

is entirely different from the English—low buildings are sometimes scaffolded from the ground, but in the higher buildings, which are the rule, the scaffolding is raised from floor to floor. When it is necessary to lay brick or stone work from the outside, the scaffolding is cantilevered from the windows at the various story heights. It should be noted that high buildings are always built on the skeleton type, the supporting columns and all the floors being erected first. The walls, which are built afterwards, generally consist of thin panels from 9ins. to 13ins. thick, supported by the external columns and beams. Apart from the economy arising from the decreased thickness of the wall, the advantage of this form of construction lies in the fact that after the skeleton is erected, the contractor can carry on his mason work at two or three different levels, which is convenient when the time of erection is limited. It also obviates the necessity of waiting for any particular material; should the delivery of cut stone work for one level be delayed, the brickwork can be started on a different level with no disadvantage. The Hotel Traymore, Atlantic City, is an example, carrying out a reinforced concrete construction with stone walls. The elimination of external scaffolding not only saves a considerable amount of money, but its construction would prove impractical, even impossible. in the highest buildings, which run to thirty and forty storeys high.

For Scaffolding Internal Walls,

the Gilbreth method is probably the best. An illustration of this scaffolding is shown in Fig. 5. The scaffolding itself consists of three platforms, the one used by the men with their barrows supplying the materials to the masons; the second carries the materials required; the third is for the use of bricklayers. These three platforms are carried on a high trestle. As the brick wall goes up, the labourers raise the three platforms up the trestle by means of the lever shown on the illustration, the lever being operated by the men on the scaffolding. By the use of this scaffolding the labourers with their barrows all move in the same direction, going up the scaffolding platform at one end of the building, walking along to feed the masons at the different points, and coming down at the other end, and there is no confusion due to men moving in opposite directions. With this method of scaffolding, all the internal walls of a good sized building can be constructed in a single day. Economy and speed of construction not only depend upon the number of men employed in actually placing the material, but also in the system of feeding the material to those men with the least possible confusion. Thus speed of bricklaying is sometimes governed by the rate at which the bricks can be brought to the workman, in the same way that the speed of laying a concrete floor is governed by the speed at which the concrete is hoisted to the required level. Many a construction which has proved unsuccessful from a financial point of view, would have turned out differently had this condition been better provided for.

The Reinforcing Steel

is handled in large quantities, both in unloading it from the carts and in hoisting it to the different levels. For this purpose it is generally bundled into one ton lots, mechanical appliances unloading it from the carts and hoisting it to position. In the selection of the system of reinforcement used, the contractor has a choice of many kinds, and he adopts that system which, in his opinion, involves the least amount of manual labour at the site of the construction. Any difference in the cost of the various forms of reinforcement is always considered in conjunction with the amount of labour involved in fabricating and placing it in position. The use of a complicated system not only increases the cost of placing the steel, but it increases the cost of placing the concrete as well, and this fact demands considerable attention. Another consideration in the selection of reinforcement is that the system which requires the least amount of manual labour at the site results in speedier construction, and, probably less difficulties with the Trade Unions.

Keeping Track of Progress.

A simple and effective method enabling the principal at the head office to ascertain the state of progress at any time, is the use of what are called "Diagram Sketches." When a contract is started, the resident engineer is supplied with a quantity of small, single-line diagrams showing sections and plans of the building. As the work progresses he sends to the head office, with his weekly report, one of these diagrams tinted in various colours to show the amount of work done during the preceding week.

Staff Organisation.

Probably the greatest difference between the English and the American contractor lies in the appointment of the staff. High salaries for important men are never begrudged, as the earning power of any firm depends entirely upon the efficiency of the men employed. The superintendents in charge are responsible for the making or losing of the money, and this responsibility necessitates their being well paid; the salaries range from £10 to £20 per week according to the importance of the construction in hand. The superintendent has generally received a technical training at some University, and devoted a certain amount of time to field work after graduation. In as much as the trade unions are such important factors to contend with, attention is paid to the diplomatic abilities of the superintendent in charge. The American workman is so independent that the superintendent at times has difficulty in securing respectful obedience. It is different here, where the foreman commands the respect of the men because, generally speaking, they cannot afford to lose their work. Large contractors often select for superintendents men who were football captains at their University. In their games these men show ability to plan attacks and handle players, and get experience in the command of their fellows. These football captains are carefully marked, some of them being booked by contractors immediately upon graduation. As a rule they develop into capable chiefs. In addition to the superintendent, the staff consists of a timekeeper, accountant, resident engineer, and the several squad foremen. In order to obtain the maximum amount of work, the workmen are divided into squads, each being under the charge of a foreman. Such a division of men results in the greatest amount of speed with the least amount of confusion. The men on the staff are called "steady pay men," and are not paid by the hour but by the week. Should stoppage occur through inclement weather, lack of material, or any other cause, incidental work is found for the permanent staff, such as the making and preparing of trestles, repairing engines and plant, putting handles on shovels and other tools, cleaning up sheds, adjusting the transits, levels, and other instruments, checking lines and levels, checking dimensions of steelwork, window and door frames, and so forth. These incidental jobs help to cover the cost of the steady pay men, and at the same time the employment keeps them out of mischief. On every construction ordinary workmen will be found who work faithfully and prove themselves of general value to the firm. When these men are paid off at any time, their names are recorded on what is called "the white card list." These cards are filed at the head office and are referred to when good men are required on future constructions. As any business grows, the employee loses his individuality with the employer, which is discouraging to a man who is desirous of having his efforts appreciated. The white card list tends to eliminate this difficulty, as preference is given in new work to the employment of known men who are thus enrolled. The system has a further advantage in that when a few white card men are scattered amongst a large party of workmen, they are effective in preventing general dissatisfaction and strikes. The hours of working are from 8 to 12 in the morning, and from 1 to 5 in the afternoon, with half a day on Saturday. The men are expected to start work promptly when the whistle blows and to stop work just as promptly. This is another result of the trade unions, which have ruled that when an engineer on a hoisting engine is compelled to work five minutes overtime, he is entitled to two hours extra pay, and if compelled to work half an hour overtime he is entitled to half a day's extra pay. It can be seen, therefore, that it is necessary to have the men stop when the whistle blows, but as a rule there is little difficulty in getting them to lay down their tools when this welcome sound is heard.

Estimating Cost.

The American method of estimating the cost of construction for tendering purposes is open to considerable criticism. Instead of a quantity surveyor being employed, as is the case in England, each contractor has his own estimating clerk, who prepares the quantities from small scale drawings supplied, together with specifications describing the work. Very often on account of the meagreness of the information given and the short time allowed, the preparation of the quantities is based on judgment instead of measurement, and under such conditions contracting becomes more or less of a gamble. While the lack of scheduled quantities has disadvantages, it has the advantage that extras and changes very seldom occur. Without a schedule of prices the owner or architect is loth to make any changes, the pricing of which might prove bones of contention. Therefore, when a contractor has once planned his method for carrying out the work, he proceeds with the execution of it with little interference from the owner or architect, and it is carried out exactly as shown on the signed contract drawings.

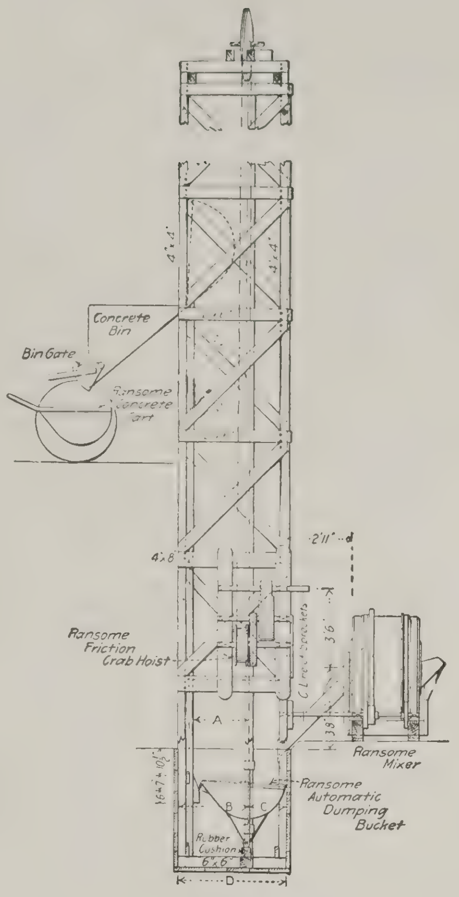


Fig. 3.—Hoisting Gear.

Checking Costs of Labour and Materials.

Careful records are kept to show the total cost of all labour and materials used up to Thursday of each week. Thus the principal of a firm can definitely determine on any Saturday morning, the cost of the construction up to and including the preceding Thursday. He does not wait until the job is finished to determine whether he has made or lost money, but ascertains this weekly by comparing the total cost sheet with the original estimating sheet. From this weekly examination any leakages are traced before any large loss results. The daily time-sheets are so arranged that the cost clerk can find out accurately therefrom the unit price of any labour performed. All unit costs are recorded and become valuable information for future tendering purposes. The system of recording costs must necessarily be complete, as contractors work over a large territory and execute structures of various types—one building is erected in one State, another perhaps a thousand miles distant; one may be a factory and the other a city skyscraper.

The Handling of Men

under conditions such as these calls for a completeness of organisation and a comprehension of effective systemisation, which make for results in the strenuous competition which obtains in the trade. Many contractors in building up their organisations record all instructions given from time to time. These instructions are later gathered together and published in book form for the use of employees. Large concerns are the result of growth and continuous development, and therefore it is important to record all knowledge gained in such a manner that the organisation is dependent upon no one man. The ideal organisation is one in which any important man can fall out at any time, with little or no inconvenience to the rest of the staff; and when all instructions are printed in book form, a new man entering upon his duties can immediately fall into line and take advantage of his predecessor's experience. Thus the organisation becomes like a machine of which sufficient details are kept to duplicate, in the shortest time, any part which fails or wears out. When a contracting company is so conducted that the knowledge gained from experience is stored in the mind of any one principal or leading man, the concern is dependent on that man, and the loss of him at any time throws considerable hardship upon the firm.

Systematic Estimating.

Reference has been made to the gambling tendency which results in hurriedly estimating and tendering on a lump-sum basis. To eliminate this two systems of contracts are now being extensively used, viz., the cost plus a percentage, and the cost plus a fixed sum or premium contract. The former has its advantages and also its disadvantages, but the latter seems to have only meritorious qualifications. Under this system, the contractor becomes a professional man, who, like any other expert, is employed to administer and conduct the enterprise in its executive department, being paid a fixed fee for his services. When an owner adopts this system he selects his contractor at the same time that he appoints his architect. The architect secures the advantage of the contractor's practical experience from the very start. Each considers the same problem from a different point of view, and the preliminary estimate as to the probable cost of the work can be determined with greater accuracy. The specifications are prepared, not only from a technical, but from a practical point of view. All questions regarding the supply of labour and material, seasons and weather, and the physical difficulties which are apt to present themselves, are thoroughly discussed and the entire proposition is then laid before the owner in a comprehensive manner at the outset. He has the benefit of two trained minds, the one scientific and the other executive; the one furnishes his knowledge of design, the other his practical knowledge of what the man in overalls can do. The owner secures an economical construction, whilst the fixed fee paid the contractor assures him of a reasonable profit. This being determined beforehand he has no motive for increasing the cost of work. On the contrary it is to his interest to keep the cost of construction as low as possible, thereby retaining the owner's clientage. Thus the contractor's interest is identical with the owner's. Contractors who simultaneously carry out many works under a fixed sum contract often find it impossible to pay for the materials supplied until they receive their payments from the owners, and thereby lose the benefit of cash discounts. Under the form of contracts herein discussed the owner defrays the cost of all materials, and by paying cash can take advantage of any special discounts, making a considerable saving. Again, alterations in the ordinary contract are always causes of annoyance, and under this system that annoyance is removed, as the owner pays merely the cost of any changes he may wish to have carried out. The contractor having been selected, he can commence excavating immediately, and proceed with the work as the drawings are supplied by the architect, saving the time which is ordinarily lost in waiting for the drawings to be entirely prepared before starting. The owner, at all times, has full control over the number of men employed, and thus regulates the speed of the construction. It is his desire to secure his structure as soon as possible consistent with economy and the exigiencies of the situation. Likewise, it is the contractor's desire to finish as soon as possible; and herein their interests are again mutual. When a lump-sum contract is entered into, the contractor employed is generally the one who submitted the lowest tender, and sometimes an irresponsible firm is selected. Under the new system, however, the owner makes his choice from a representative list of contractors, finding it possible to employ the best firm at no extra cost. It is in the contractor's interest to perform the work in the best possible manner; he must achieve a certain reputation before he can hope to get work of this character, and he must keep up to that reputation, or he will get no subsequent orders. He cannot afford to be wasteful, extravagant, or inefficient. The entire object of this form of contract is to give the owner an economical construction, carried out in the best possible manner and in the shortest space of time, with the further object of seeing that the contractor has a fair profit for his services. When once the owner realises that a suitable profit is due the contractor, the gambling element will be eliminated, and that feeling of distrust which has so long been associated with the name of contractor will be removed. It is not right or fair that any such feeling of distrust should exist, as the contractor's business is a legitimate and an honourable one. It is built up by men of education and ability, and should receive that recognition from the public which it deserves. The merits of the system of contracting herein outlined are too numerour to discuss at length, and are only briefly mentioned, but it would be well worth while for the English contractor to make some concerted movement in the same direction.

CORRESPONDENCE.

Copyright in Architecture.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL

SIR,—In the leading article on "Copyright in Architecture" in the current issue of your paper, I read that the object of the Copyright Bill is to protect "not architectral merits," but "artistic character, whether good or bad." Surely the word artistic is out of place? I cannot help thinking that many supporters of the proposed Bill feel that somehow or other it will benefit the art of architecture, whereas it will only give to architects who consider themselves aggrieved by any real or imaginary reproduction of a building designed by them, the right to appeal to the Law Courts, and to claim damages. Let us consider what the value of this privilege is likely to be in pounds, shillings, and pence. To judge from the cases put in as evidence from the experience of Continental countries where architectural copyright exists, the total injury inflicted on architects in purse and reputation seems to amount to a paltry few hundred pounds. Mons. Maillard, the French *avocat* who gave evidence in favour of the proposal, is reported as saying that in France the copyright law of 1902 has given rise to no litigation. Apparently there was no need for the law, and I venture to say that architects will think twice before rushing to the law courts for infringement of their designs, knowing full well that the better the design the easier it will probably be to put in evidence against them examples from which it will be suggested that they have drawn their inspiration, and which a clever advocate will use with deadly effect to their undoing. By an easy progress we soon reach the *reductio ad absurdum* that the more a design is produced by the mere light of nature, ignorant of and untrammelled by any standards or traditions, the more likely its triumphant vindication at the hands of the intelligent jury—and thus we shall hall-mark as of peculiar merit the mistaken originality and eccentricity which is the curse of so much modern architecture, and which already possesses a quite fictitious value in the eyes of the great British public.

That elusive quality which, if present in the humblest structure or the greatest monument, gives to it character and artistic value cannot be copyright; and, while it may be possible to protect combination of features and details, do we not run the risk of reducing the art of architecture to the level of tradesmen's registered designs, trademarks, etc., in the vain hope of raising it in the estimation of the public The Bill, if passed, will prove a two-edged sword. As Professor Blomfield points out, it would as framed confer the right of veto on the proprietor, and the architect might be compelled to seek permission to copy his own design—and, forsooth, why not? Surely a client would have a distinct grievance if, having commissioned and paid his architect to design a house. he found him producing a replica on the other side of the street, or, for that matter, anywhere else. I sincerely trust that the Institute will give no further official countenance to this or any other Bill.

FRANK W SIMON, F.R.I.B.A.

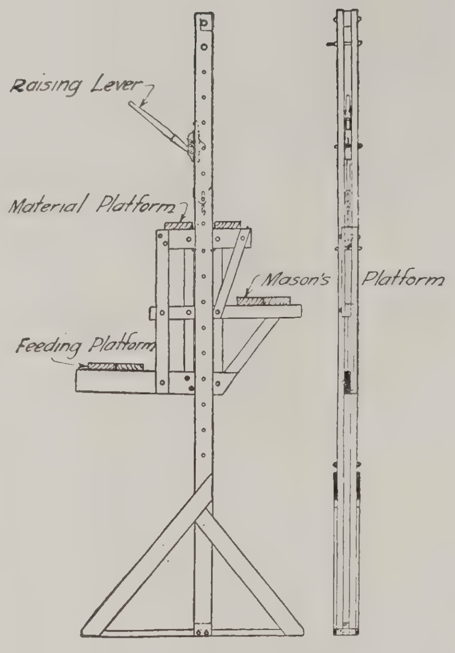


FIG. 5. THE GILBRETH METHOD OF SCAFFOLDING.

(See "Importance of System," page 371.)

COMING EVENTS.

Thursday, October 13.

UNIVERSITY COLLEGE, LONDON.—H. V. Lanchester, F.R.I.B.A., on "Town-planning: City Developments at the Present Time." 6 p.m.

Friday, October 14.

YORKSHIRE BUILDING, SANITARY, AND ALLIED TRADES' EXHIBITION.—Sheffield

GLASGOW TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY.—John Bowman delivers presidential address. 8 p.m.

TOWN PLANNING CONFERENCE.

(For earlier dates see p. 366.)

Thursday, October 13.

Raymond Unwin on "The City Development Plan"; M. Augustin Rey; W. E. Riley, F.R.I.B.A., on "City Development"; Dr. Ing. H. J. Stübben on "Recent Progress in German Town Planning"; Prof. Dr. R. Eberstadt on "The Greater Berlin Competition." R.I.B.A. Great Gallery, Conduit Street Entrance, 10.30 a.m.

Col. Eustace Balfour, F.R.I.B.A., on "The Town Planning Act and Open Spaces." Basil Holmes on "Open Spaces, Gardens, and Recreation Grounds." R.I.B.A. Great Gallery, Conduit Street Entrance, 3 p.m.

T. H. Mawson, Hon. A.R.I.B.A., on "Public Parks and Gardens"; E. A. Rickards, F.R.I.B.A., on "The Architect and Civic Ornamentation; Col. G. T. Plunkett, C.B., on "Open Spaces and Running Waters." R.I.B.A. East Gallery, Maddox Street, 3 p.m.

Friday, October 14.

Prof. C. H. Reilly, M.A., F.R.I.B.A., on "The Immediate Future in England"; Eugène Hénard on "Les Villes de l'Avenir"; Daniel H. Burnham; L. Cope Cornford on "Cities of the Future: their Chances of Being." R.I.B.A. Great Gallery, Conduit Street Entrance, 10.30 a.m.

H. Heathcote Statham, F.R.I.B.A., "A Suggestion for the Treatment of Trafalgar Square"; Arthur Crow, F.R.I.B.A., on "Town Planning in Relation to Old and Congested Areas." R.I.B.A., East Gallery, Maddox Street, 3 p.m.

W. H. McLean, on "The Planning of Khartoum and Omdurman"; John Sulman, F.R.I.B.A., on "The Federal Capital of Australia." R.I.B.A., Great Gallery, Conduit Street Entrance, 3 p.m.

Saturday, October 15.

Visits to Bath, Oxford, Cambridge, etc.

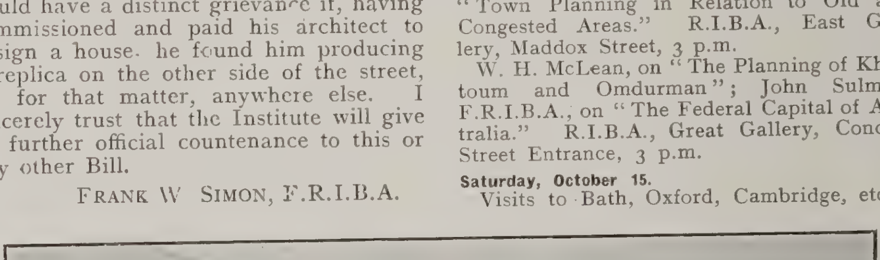


FIG. 4. PINE HILL COAL BREAKER, SCRANTON, PA.

(See "Importance of System," page 371.)

CONCRETE AND STEEL SECTION

(MONTHLY.)

Strength of Beams. The strength of reinforced concrete beams depends not only on the amount, kind and position of the steel, but upon the adhesion existing between the steel and the concrete. If the contact between these two materials is imperfect, or if the adhesion is insufficient or imperfectly distributed, the rods may slip and the failure of the beam may result. This is especially true of plain round rods where the resistance to slipping is due entirely to adhesion. With deformed bars the bond is greater, and of a different nature, yet even here proper contact between the reinforcement and the concrete is of great importance. Plain square rods have the lowest value in adhesion, and this is one of the reasons why they are so little used in reinforced concrete construction.

Beams with Square Rods. Recently in a series of test beams reinforced with plain square rods, the contact between the underside of the steel and the concrete was examined after the tests had been made, by removing the concrete layer underneath the rods, and in several cases it was found that the concrete and lower surfaces of the rods had not been in contact at many places. In the extreme case there was no contact on the underside for a length of 18in. Either air had collected underneath the rod, due to improper tamping, or, the concrete in settling had shrunk away from the steel. In most structures where adhesion plays such an important part the rods are placed horizontally as in beams, and the tamping is done at right angles to the length of the rods.

Columns. In columns, however, where adhesion is of relatively less importance, since safety would seldom if ever depend entirely upon it, the tamping is parallel to the rods. It is quite evident that the bond of union would be different in the two types of structures, namely, those in which tamping of the concrete is carried on at right angles to the rods, and those in which it is parallel thereto. It seems proper, therefore, that in making laboratory experiments to determine working values of the bond of union, this should be taken into account by preparing some specimens in one way and some in the other. Most experiments thus far recorded have been made by determining the amount of pull necessary to withdraw an embedded rod from a block of concrete, and from this the adhesion per square inch is computed; the assumption being made that the adhesion is uniform over that part of the rod's surface in contact with the concrete.

Adhesion for Tamping. In the reports of these experiments it is not generally stated whether the concrete is tamped parallel with, or at right angles to the rod, but in most cases where this information has been given the tamping was parallel to the rod. From tests recently made, but not yet published, it seems that the adhesion for tamping at right angles is only about one-half that for parallel tamping. Recent tests to determine the adhesion by means of short beams are along the right direction, for it is not good engineering to obtain data from tests, and then apply them to designs where the conditions are entirely different. If rods are to be used horizontally in a beam, then by all means let them be placed in a similar position in the tests which determine the adhesive values that are used as a basis on which the beam is designed.

REINFORCED CONCRETE IN ENGINEERING.

INSTITUTION OF CIVIL ENGINEERS' PRELIMINARY REPORT.

The Institution of Civil Engineers have favoured us with a copy of the Preliminary Report upon the inquiry undertaken by the Institution into the conditions of the employment of reinforced concrete in engineering structures. The Committee desire to draw special attention to the fact that up to the present stage their work has wholly taken the form of inquiry into the conditions under which reinforced concrete has been employed hitherto in engineering works in various countries, the views of engineers who have had special experience of its use, and the data so far available as to the result of such experience and of investigations which have been accessible to the Committee.

The Committee are not yet in a position to put forward recommendations or a pronouncement of views upon the subject, such as they hope to draw up later; but they consider it desirable and advantageous that the results of their inquiry up to the present time should be now communicated to the Institution; and, whilst they have taken every practicable step to verify the statements contained in their Report, they refrain from accepting responsibility for these.

Interim Report, June, 1910.

The Special Committee appointed by the Council of the Institution, on December 15th, 1908, "to inquire into the use of reinforced concrete, with a view to a more accurate knowledge of its preparation, strength, properties, and use in engineering work being arrived at," beg leave to submit this Preliminary Report of their proceedings up to the present time.

The Committee assembled on February 1st, 1909, and have met frequently since then. At the outset of their proceedings, it was resolved to collect in the first instance precise information of the principal systems of reinforced-concrete construction now in use, setting forth their chief features and the general advantages claimed for them.

The Committee then prepared a comparative analysis of specifications for work in reinforced concrete adopted by various leading manufacturers who employ the foregoing systems. There was also assembled for their consideration a summary of official rules for the use of reinforced concrete in use in various countries.

General Principles.

Proceeding to consider the nature of the information as to the actual facts bearing on the subject which the Committee should aim at procuring, it was decided that the following particulars in relation to the materials used and the calculations employed for reinforced concrete should be regarded as of primary importance.

(1) Materials.—Composition of Concrete and nature of aggregate; regulations as to mixing and placing; precautions in placing the reinforcing bars; quality of steel reinforcing bars, whether of mild, medium, or high-elastic-limit steel; special notes of the use of indented, twisted, Kahn, or other patented forms of reinforcement; tests required in specifications of concrete and steel; requirements as to time allowed before removing moulds or centerings, and whether these depend on temperature at the time; particulars of any loading tests of finished reinforced-concrete works, and of any observations of stiffness or deflection; notes of the use of any special moulding machines for reinforced concrete, such as "mono-concrete machines."

(2) Calculations.—Notes of any special methods of approximate calculation adopted; stresses allowed: for concrete—in compression, in bending, in shear, adhesion or bonding stress, for steel—in tension and compression; methods of calculating the distribution of stress to concrete and reinforcing bars in columns; methods of calculating the lateral staying of longitudinal reinforcing bars in columns, and distance apart of stays; rules adopted as to ratio of length to least lateral dimension in columns; rules for flat slabs adopted, for instance, such rules as that the greatest bending moment is assumed at WL/12; methods adopted in calculating beams—where the neutral axis is taken to be, what kind of distribution is assumed for the thrust on the concrete—arrangement of reinforcement over supports when beams are continuous; drawing of any interesting details, such as junctions of beams and columns.

The Committee next proceeded to review the published experimental data bearing upon the properties of materials employed in reinforced concrete, and also those bearing upon the strength of beams and columns. A synopsis of these data, which is the result of some considerable scrutiny of the literature of the subject, is given in the report.

Application to Works.

The next phase of the Committee's inquiry was to obtain information as to the general conditions under which reinforced concrete is now employed in engineering works, and the results of experience as regards the efficiency, stability, and permanence of such works.

For the sake of convenience, the various works in question were classified under the following ten heads:—Class I., foundation walls, piled foundations, distributed or floating foundations; Class II., retaining walls; Class III., dams; Class IV., marine works: piers, jetties, and quays; Class V., reservoirs and tanks; Class VI., road-bridges; Class VII., railway-bridges; Class VIII., culverts; Class IX., warehouses, i.e., buildings in which the structure is subjected to statical loading with but little vibration; Class X., factories: i.e., buildings in which machinery is used, and where considerable vibration occurs.

It was thought advisable at this stage to seek direct information with regard to the execution of reinforced-concrete works, from engineers who had considerable practical experience in carrying out such work; accordingly, the Committee invited, and were favoured by, the attendance of a number of experienced engineers, who gave evidence upon the following general questions, so far as these had come under notice in the course of their experience:—

(1) The conditions under which contracts for reinforced-concrete works carried out have been let.

(2) The arrangements made with specialists, and the extent to which these furnish information on which contracts are based.

(3) The responsibility of the specialists who furnish these data.

(4) Experience as to the effect of use and age on reinforced-concrete structures carried out by them.

(5) The present condition of such works.

(6) The extent of repairs and reinstatements which have been found to be necessary since the works were completed.

(7) The loads on the works.

(8) The tests applied, and how the proportions of the structures were determined to comply with the conditions to be provided for.

A synopsis of the evidence given before the Committee and a full report of the evidence and information given on special points of the inquiry are presented in Memoranda.

A REINFORCED CONCRETE BRIDGE.

A reinforced concrete bridge, consisting of three 80ft. spans and having a total length of 318.24ft., has been completed recently to carry Seventh street in Los Angeles over the Los Angeles River. The structure is at a 10 degree skew, with the centre line of the channel of the river, and is built to carry a 56ft. roadway, with a 5ft. 9in. walk on both sides, the width from curb to curb being the same as on the 80ft. street, of which it is a part. A combination bridge on masonry piers originally crossed the stream at this point, but this structure was wrecked some years ago when one of the piers carrying it was washed out. The opening of the new bridge, therefore, provides an entrance into the business section of the city for a large residential district, which heretofore could be reached only by an indirect route. The bridge carries two street railway tracks located in the centre of the roadway.

The highway portion of the bridge was designed for a concentrated load of 24 tons on two axles, 10ft. apart on centres, and placed in any position on the bridge, with a uniform live load of 150lb. per square foot on the balance of the roadway. The railway portion was designed to carry a uniform load of 4,000lb. per linear foot on each track. This loading provides for a series of 120,000lb. electric locomotives on either track. Each locomotive is assumed to be 30ft. in length, and to have two four-wheel trucks, with a spacing of 7ft. between the axles of each truck and of 9ft. between the adjacent axles of the two trucks, the load on each axle being 30,000lb. The live load provided for is about double that of the cars now crossing the bridge, but as a concrete structure is presumably permanent, it was thought wise to provide for a liberal future increase in loads.

A temperature allowance of 20 deg. Fahr. rise and 30 deg. Fahr. fall from the normal was provided for in the design. The extra 10 deg. of fall over the amount of rise was allowed as provision for a possible settlement of the abutments. This temperature allowance has proved ample, as observations made by embedding thermometers in the crown and haunch concrete of another arch bridge built in Los Angeles have shown a variation of 18 deg. either way from the average at the crown and 14 deg. at the haunch. The concrete in the arch ring was permitted to be stressed to 500lb. per square inch in compression. Plain, round rods of mild steel, having an ultimate breaking strength of 55,000 to 60,000 lb. per square inch, were used, the allowable working stress on them being 16,000 lb. per square inch.

Each arch ring has a three-centre extrados and an elliptical intrados, the latter having a rise of 21ft. The thickness of the arch ring is 18in. at the crown for the highway portion, and 24in. for the railway portion, from which it is increased uniformly toward both haunches. The arrangement of the reinforcement of the highway rib is shown in the accompanying illustration. The reinforcement in the railway rib is similar, but the longitudinal rods in intrados and extrados are 1in. in diameter, spaced 10in. on centres. Laps were made 50 times the diameter of the rods. The same section of arch ring was used under the sidewalks as under the main roadway portion. Over the piers and abutments ½in. expansion joints, filled with deadening felt, were left in these walls to provide for any deflection of the arches that may occur. At these joints the horizontal rods in the walls also were broken to permit the movement of the latter as may be required.

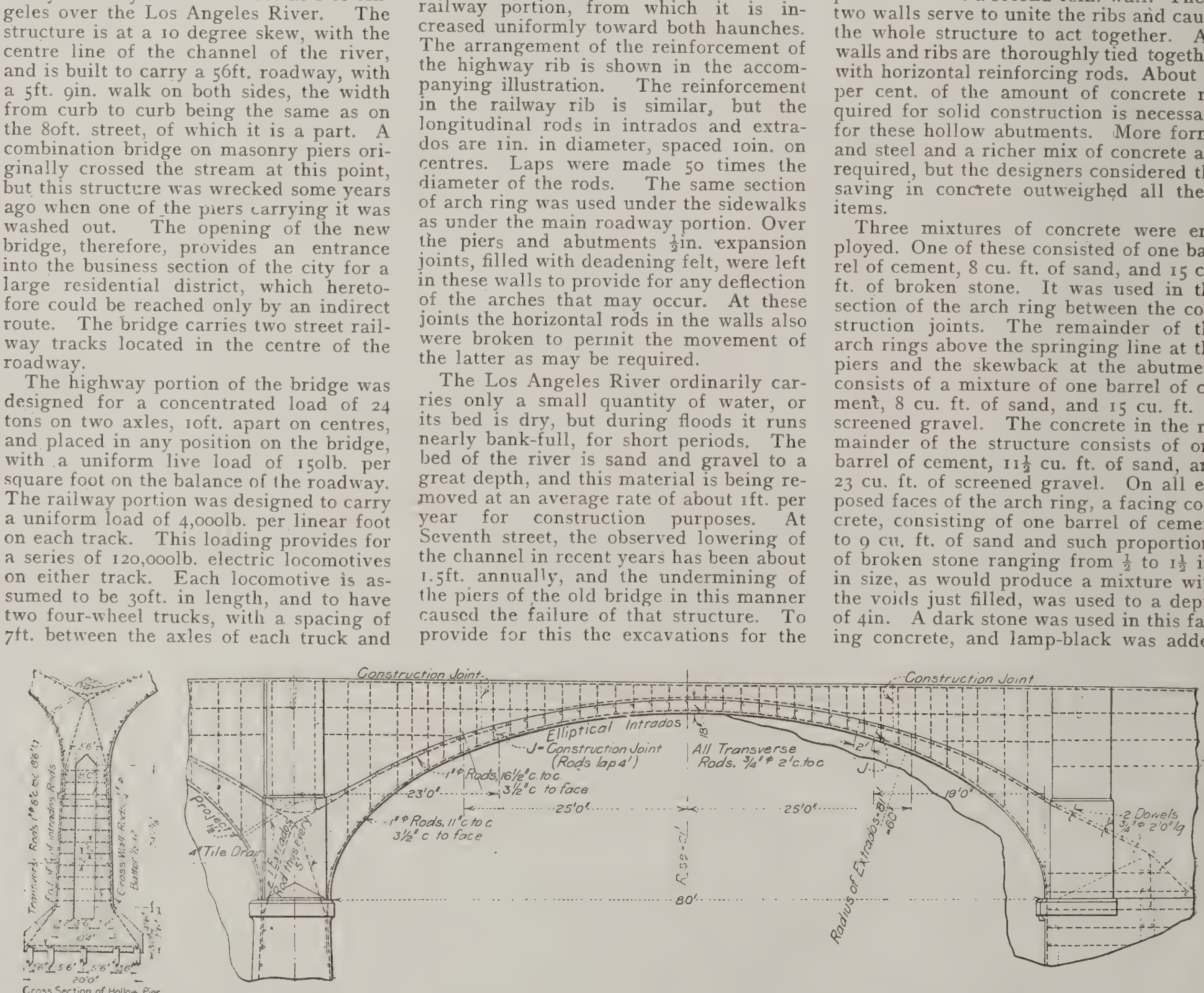
The Los Angeles River ordinarily carries only a small quantity of water, or its bed is dry, but during floods it runs nearly bank-full, for short periods. The bed of the river is sand and gravel to a great depth, and this material is being removed at an average rate of about 1ft. per year for construction purposes. At Seventh street, the observed lowering of the channel in recent years has been about 1.5ft. annually, and the undermining of the piers of the old bridge in this manner caused the failure of that structure. To provide for this the excavations for the piers were carried 30ft. below the lowest point of the channel, and 25ft. below for the abutments. Piles were driven in these excavations to refusal, which occurred at an average depth of 13ft. below the bottom of the concrete.

A considerable economy was effected in the piers and abutments by making them hollow; the pressures on the footing also were thus reduced considerably. The pier design is shown below. The hollow space has 12in. cross ribs at intervals of about 7ft. 4in. separating it into compartments. The cross walls are reinforced horizontally, as shown.

The hollow abutments have a broad base, 3ft. 5in. thick, built normal to the line of thrust from the arch. The piles were cut off at the angle of the slope of the base, and the latter were reinforced heavily, directly over the pile heads. Some reinforcing also was placed in a plane near the top of the base to distribute the loads brought on the latter.

The hollow portion of each abutment between the top of the base and the springing line consists essentially of a series of 2ft. concrete ribs, spaced 7ft. 4in. apart on centres, and covering the entire width of the abutment base, so as to distribute the pressure on the latter. The front face of the abutment is a heavily reinforced 18in. wall; and back of it 9ft., and parallel to it is a second 18in. wall. These two walls serve to unite the ribs and cause the whole structure to act together. All walls and ribs are thoroughly tied together with horizontal reinforcing rods. About 50 per cent. of the amount of concrete required for solid construction is necessary for these hollow abutments. More forms and steel and a richer mix of concrete are required, but the designers considered the saving in concrete outweighed all these items.

Three mixtures of concrete were employed. One of these consisted of one barrel of cement, 8 cu. ft. of sand, and 15 cu. ft. of broken stone. It was used in the section of the arch ring between the construction joints. The remainder of the arch rings above the springing line at the piers and the skewback at the abutment consists of a mixture of one barrel of cement, 8 cu. ft. of sand, and 15 cu. ft. of screened gravel. The concrete in the remainder of the structure consists of one barrel of cement, 11½ cu. ft. of sand, and 23 cu. ft. of screened gravel. On all exposed faces of the arch ring, a facing concrete, consisting of one barrel of cement to 9 cu. ft. of sand and such proportions of broken stone ranging from ½ to 1½ in. in size, as would produce a mixture with the voids just filled, was used to a depth of 4in. A dark stone was used in this facing concrete, and lamp-black was added



This bridge, which has been erected over the Los Angeles River, California, comprises three 80 ft. spans, and has a 56 ft. roadway, with a 5 ft. 9 in. walk on both sides.

A REINFORCED CONCRETE BRIDGE.

to the mortar in the proportion of 4lb. per barrel of cement used. A dark gray colour was thus given to the exposed faces of arch rings. The spandrel walls were made of a concrete with 1in. broken stone aggregate in such proportions as to produce a mix without excess of mortar. The thickness of the layers of wet mixtures was not allowed to be over 18in.

The concreting was so conducted that no plane of weakness, or construction joint resulting from the stoppage of work at the end of a day should occur in a place where it was detrimental. The ribs and cross walls of each pier and abutment were all constructed simultaneously. Wherever a bond was necessary between one day's work and the next, it was secured by embedding boulders for one-half their depth in the surface of concrete to be bonded.

The method of constructing the arch ring was as follows: Near the quarter points in the arch ring, or at / on the drawing, there can be no tension under any condition of loading. The haunch sections below the points / were each built in longitudinal ribs about 15 to 20ft. wide, each rib containing from 175 to 200 cu. yd. and being completed in one day. The crown sections above the points were postponed until after all the haunch sections were in position, so as to permit any possible shrinkage to take place before closing the arch. Each crown section was then completed for the entire width of bridge in one day for each span.

The centering was struck 30 days after the completion of the arch-ring concrete. The spandrel walls were not built until after the centres were struck, as any deflection taking place in the arch ring on striking centres would otherwise have produced undesirable secondary stresses in the spandrel walls. In practice this proved a needless precaution, as no appreciable settlement took place in the arch rings on striking centres. The spandrel filling was started immediately upon the completion of spandrel walls, and was built up uniformly from all piers and abutments, so as to avoid stresses in the arch ring due to unbalanced loads.

Special care was exercised in the design to secure a harmonious appearance of the finished structure. During construction the concrete work was handled so as to produce a satisfactory finish on all exposed surfaces. The facing concrete was placed simultaneously with the arch-ring concrete. Immediately after the forms were removed from any part of the work, all small cavities or pockets of stone in the exposed faces were filled with cement mortar mixed in the same proportion as that used in the body of the concrete, and unsightly ridges and lips were rubbed down with a stone. The surface of the spandrel walls was washed immediately after the forms were removed with water and a stiff wire brush. The labour cost for this was about 20 cents. per square yard.

The faces of the arch ring and of the eight pilasters on the piers and abutments, excepting a 4in. band all round, were picked with a sharp tool, so as to roughen the entire surface and give the concrete the appearance of roughly dressed stone. This tooling was not allowed to be done until the concrete had set for 30 days.

An artificial stone coping and balustrade were cast separately. Over each pier and abutment, two heavy pylons were placed in the railing to enhance the architectural effect, and as supports for a pair of 18in. frosted glass globes for ornamental lighting.

The bridge, which is described and illustrated in the "Engineering Record," was designed and construction started under the direction of Mr. Homer Hamlin, city engineer, by the late Mr. H. G. Parker, formerly bridge engineer of Los Angeles. After the latter's death, Mr. F. W. Crocker succeeded him as bridge engineer, and was in charge of the completion of the work. The bridge was built under contract by Mr. Robert Beyrle, of Los Angeles, the contract price being 105,000 dollars. The coping and railing were built by the California Ornamental Brick Company, of Los Angeles, for 4,830 dollars.

THE ARCHITECT, THE ENGINEER, AND THE STEEL STRUCTURE.

A paper on "The Architectural Element in Steel Structures," read by Mr. Robert Boyle, B.Sc., before the Architectural Section of the Royal Philosophical Society of Glasgow, is now published in pamphlet form. It deals largely with the architectural treatment of bridges, but there are also sections in which the æsthetical principles enunciated are applied to other classes of buildings. The author treats, for instance, in section iv., on "Roofs and Buildings," in which he says that at the present day the engineer and architect come more directly in contact in the erection of large roofs and buildings than ever they have done. Indeed, more of the work now seems to fall within the province of the engineer. The evolution of the modern roof, like that of the bridge, has been very gradual up to very recent times. The simplest, and probably earliest construction, was that which roofed in an excavation made out of the solid rock or earth. In the time of Vitruvius, roofs were covered with reeds, and sometimes a mixture of clay and stones; and, according to Pliny, the shells of tortoises were also used for the same purpose. The early Egyptian roofs were almost flat, the pitch increasing as the latitude becomes more northerly. The characteristic timber roofs of the middle ages were of high pitch. They were supported on abutment walls, and had no horizontal ties. This was exemplified in the roof over Westminster Hall, completed about 1399. The general effect was to impress the beholder with the strength, beauty, and lightness of the structure. The modern factory is constructed almost entirely of steel and glass. The French and other common types of steel roof trusses are carried on light lattice girders resting on built up steel columns, while the side covering may be brick filling, weather boarding, or corrugated sheeting. The cast iron column is gradually dying out. The general appearance is light and graceful, and there is little to be desired, and little that is advisable in the way of external ornament. The addition of flimsy and elaborate trimmings of cast or wrought-iron or of geometrical tracery is seldom an æsthetic success, even in railway stations and other buildings where appearance receives greater consideration.

The steel-frame building or "skyscraper" is the most recent product in the evolution of buildings. The steel frame system originated in the magnificent iron frame cage built by Paxton for the Exhibition of 1851, which is still in existence as the Crystal Palace. It is in America, however, that the idea has been developed by the architect and the engineer. The steel frame building is so essentially different from a brick or masonry structure that new rules are necessary for its æsthetics. There are two main types: the "steel skeleton" building which has ordinary outer walls and an interior framework of iron or steel to carry the floors, interior walls and roof; and the "steel cage" framework in which all walls are inserted as a filling, and which is a perfectly stable and self-supporting structure in itself. A fundamental point to be observed in the æsthetic treatment of all steel buildings is that *the structure must be evident to the intelligent beholder*. Where the outer walls are brick or masonry the position of steel columns should be emphasised by vertical lines, and floors by horizontal lines. The internal construction then becomes apparent by the clothing of the structural lines, the eye is pleased, and the mind is satisfied.

The employment of iron and concrete in building demands serious consideration from the æsthetic standpoint. The offices of the "Morning Post" consist of a beautiful granite building, behind which is an elaborate framework of steel. There are buildings with an enormous floor space carried by a few columns bearing immense loads, and there are buildings in which the reinforcement is so clothed as to reveal eloquence of its structural meaning. A construction may be revealed though the structure is covered. The more the mind becomes trained, the more it will take cognisance of internal construction from a few outward details, but some evidence of the structure must appear externally.

In the design and erection of stations and station buildings, the services of the architect and the engineer are both required. It is not a question of the engineer completing his design and sending it for architectural treatment. The architect should be consulted at the very outset. The province of the engineer is first of all to give to the structure the correct statical form, as in static correctness lies more real beauty than it is ever possible to gain by the application of extraneous ornament. Having settled on the form which is theoretically correct, the whole question is one of adaptability to purpose combined with elegance in appearance. We do not want mediæval porches or Byzantine details. The incongruity of engineers' architecture is sometimes remarkable. We find classic columns side by side with pointed arches, not to mention more common instances of blundering.

There are four main requirements in the construction of railway stations:—

The height of the roof must be relatively great.

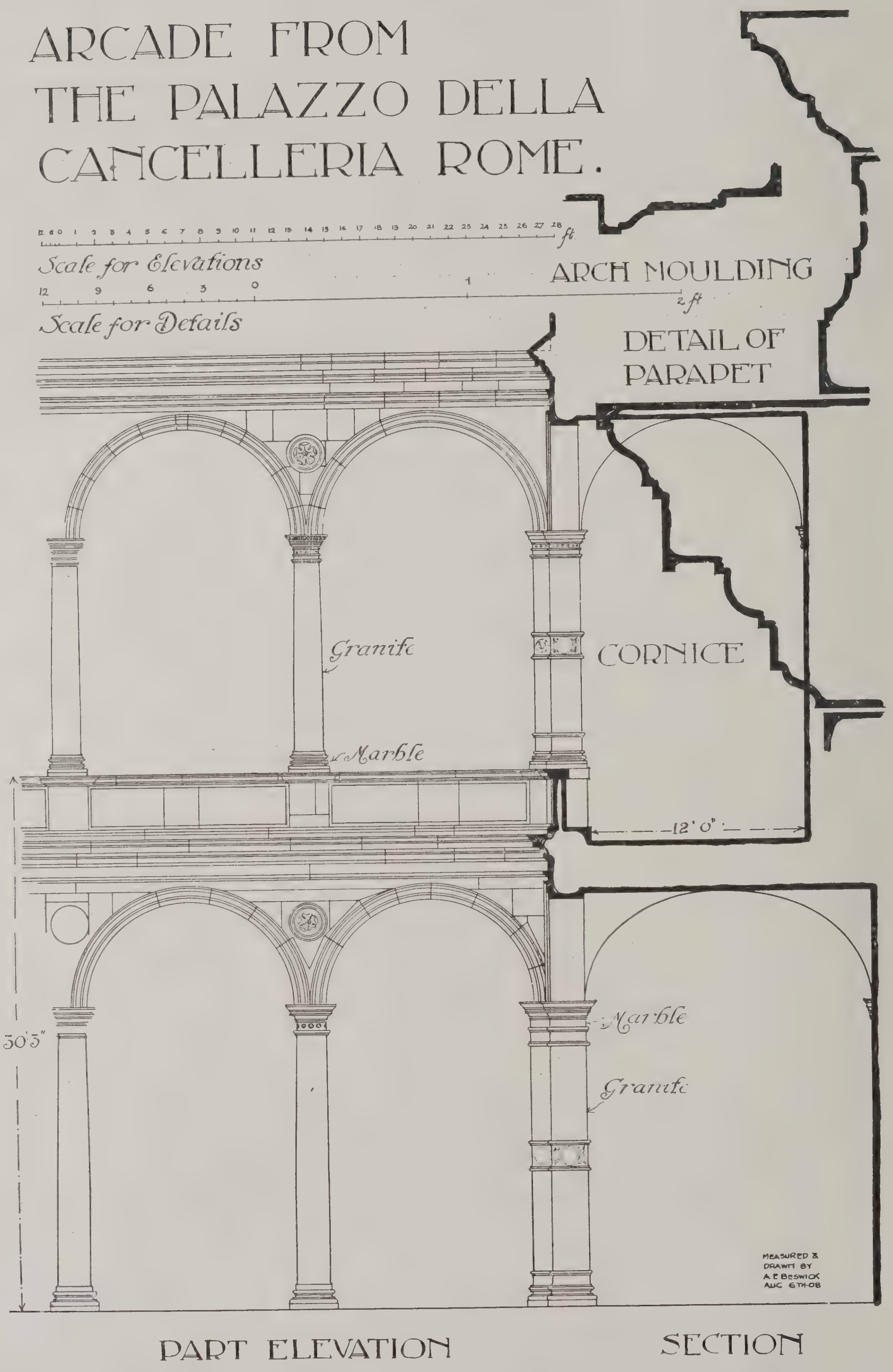
There must be an abundance of roof light.

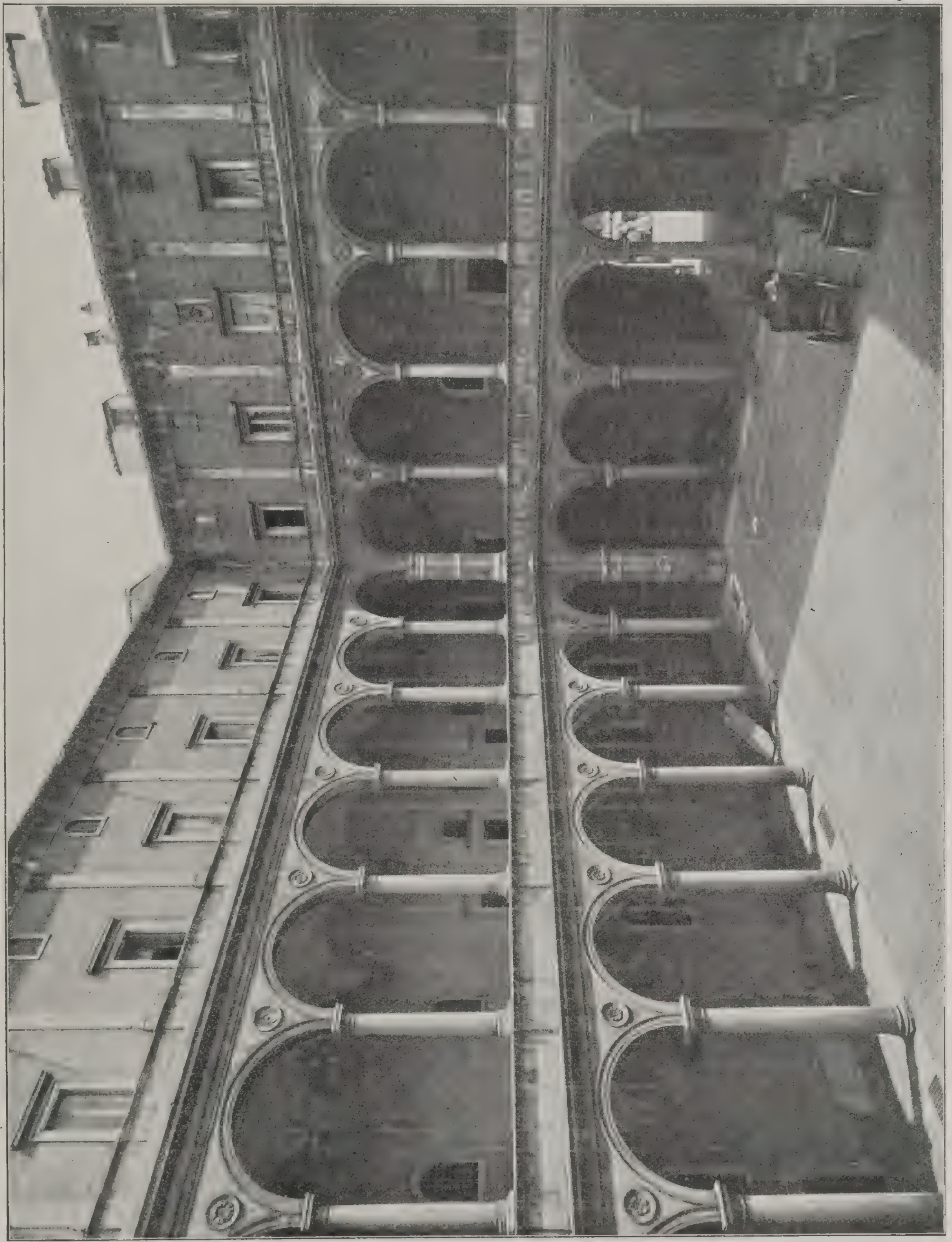
The uninterrupted floor space must be a maximum.

The materials must be fire resisting as far as possible.

The appearance from the interior is largely dependent on the form of the roof. The modern steel arch, partially covered with glass, gives a light, airy, and impressive appearance. We have an excellent example of this at St. Enoch's. The Midland Station of Bradford is covered by a Warren girder roof. The width is 175ft. from wall to wall, and there is a row of columns in the centre of the station. The columns are square and are moulded, panelled and fluted, cast in one piece, and provided with ornamental caps and corbels. This system, however, is not suitable for the largest roofs. The arched roof is undoubtedly best both for headroom, width, and unencumbered floor space. It is a mistake to overload the small umbrella

ARCADE FROM THE PALAZZO DELLA CANCELLERIA ROME.





The Cancelleria Palace was erected in the years 1495 to 1505. As a whole, it is not one of Bramante's finest designs; but the cortile, with its superposed arcades, is singularly daring in conception.

CORTILE OF THE CANCELLERIA PALACE, ROME. BRAMANTE, ARCHITECT.

trusses or cantilever roofs common in small stations with cast-iron ornament and scroll work. The Central Station at Newcastle possesses many excellent features, but the imposing portico might be mistaken for the entrance to a ducal residence or a theatre. Though the style is grand, it does not seem the ideal entrance to a railway station. The simple arrangement at the Central Station and St. Enoch in Glasgow, and at Reading Station, is more expressive of the immediate purpose to be served in the arrival and departure of passenger traffic. Princes Street at Edinburgh is undoubtedly one of the finest railway stations from the architectural point of view. The main public entrance is 65ft. long, and the offices with the central tower give a magnificent effect. The design is classic, and the station is the product of both engineers and architects. Beauty in architecture is derived from constructional fitness, not necessarily from the application of traditional canons. Archæology is not architecture. The material has also considerable influence on the result. The detail which is appropriate to brick architecture might be too elaborate for masonry construction. The detail which is best for granite might be too simple and severe for sandstone or brick. There should be a meaning for all ornament. An ornate entrance to a first-class booking office, a less ornate one to a second or third-class office would be expressive of a particular function. That station building will be the noblest, that construction will be the best which simply expresses in a plain, honest, solid and truthful way the most useful, the most appropriate, the most economical, and, therefore, the most beautiful result. There is such a thing as architectural expression which is at its best when combined with perfection in material and perfection in workmanship.

CENTERING FOR FIREPROOFING STEEL COLUMNS AND ARCHES.

The importance of so constructing and shoring the wood forms used in concreting the members of a reinforced concrete structure that they will bear the weight of the materials and men to be placed upon them is urged by Owen B. Maginnis, writing in the "Building Age." He advises that centering be built of inch spruce boards and submits sketches to guide the builder. Fig. 2 illustrates his method of constructing and erecting arch forms for use in floors between steel channels, the concreted arch, with wood nailing strips, being shown in Fig. 1. The reinforcement is not shown, as the writer does not go into the matter of steel and its placement. Fig. 3 illustrates a simple form of tamper, easily constructed. The form for concreting the steel column shown in Fig. 4 is illustrated in Fig. 5.

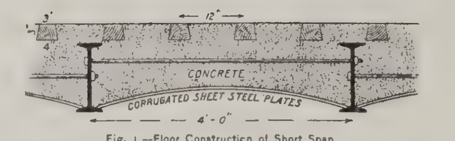


Fig. 1.—Floor Construction of Short Span

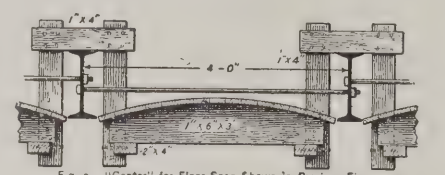


Fig. 2. "Center" for Floor Span Shown in Previous Figure

B. R. Pike, Erie, Pa., has another method of hanging arch centering between steel I-beams. The figures explain themselves in all important details. The scantlings above and below the steel beams may be cut at each beam if desired, making each section independent from adjacent sections of centering. The subcarriers, *a*, Fig. 6, and *a*, Fig. 7, may be made of 2in. by 4in. stuff, as indicated, and the arch flooring may be nailed to them. However, he prefers to make the arch floor in two or three sections, the boards fastened together as shown at *b*, Fig 7, and let them lie loose upon the sub-carriers. The binding cleats on floor sections should lap at least 1in. from one board over the next, to make the section rigid. The 5-8ths in. bolts supporting the forms are easily removed when the arch is strong enough to support itself. This method is much better, Mr. Pike believes, than the system of wooden hangers suggested by Owen B. Maginnis. It seems to him that after striking centers under his system, the arches would be full of holes left by the wooden form hangers, which would have to be filled with concrete.

CEMENT IN SEA WATER.

At the fifth Congress of the International Association for Testing Materials, held in Copenhagen, a paper on the above subject was handed in, consisting of an abstract from a report on trials commenced in 1896 on the recommendation of the Society of Scandinavian Portland Cement Manufacturers, the report having been submitted by Mr. A. Poulson, Chief Engineer of the Danish State Hydraulic Works. It contains tabular statements, diagrams, etc., and presents conclusions which will be noted with great interest in this country.

The tests were so carried out that the preliminary and the concluding operations only took place in the laboratory, a fact which enhances their practical value.

The tests in question may be said to be two-fold, in that they apply to cubes of mortar, about 3,500 in number, and to concrete blocks which number over 100, 2/3 m^3 (235 cubic feet) in volume. The blocks were made on the sea-coast off which they were to be deposited, i.e., at Thyboron, at the entrance of the Limfjord into the North Sea, near the town of Lemvig. The cubes of mortar have the usual surface of 50 cm^2 (755 square inches) to enable them to be broken in the machine in the laboratory; they were made in the laboratory. The committee acknowledge with thanks the assistance they received from the State Laboratory, Copenhagen.

From the laboratory, the test specimens were sent, for exposure to the action of sea-water and climatic conditions, to the Vardo harbour at the extreme North-eastern point of Norway; to Esbjerg harbour at the extreme South-western point of Denmark, and to Degerhamn harbour, on Oland Island, near the South-eastern point of Sweden, in the Baltic Sea. At Degerhamn care was taken that the test specimens should not be exposed to frost, by placing them sufficiently low under water level; the sea water at that point has but a low percentage of salt (½ per cent.).

At Vardo and Esbjerg, a series of specimens was similarly placed below the lowest sea level. A second series was placed at the average tide level, thus being exposed twice every day to climatic effects, especially to frost and the summer heat, which alternate with the sea-water action; the water at these points contains 3½ per cent. of salt. The specimens are thus caused to thaw twice a day during

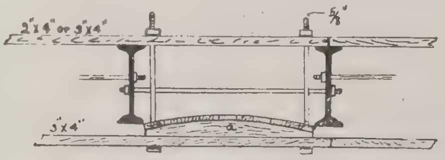


Fig. 6.

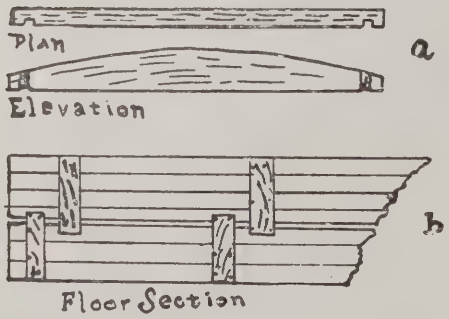


Fig. 7.

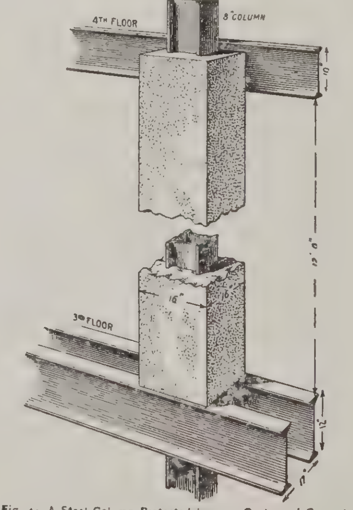


Fig 4.—A Steel Column Protected by a 4 Coating of Concrete

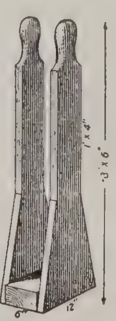


Fig. 3.—Style of Tamper Used

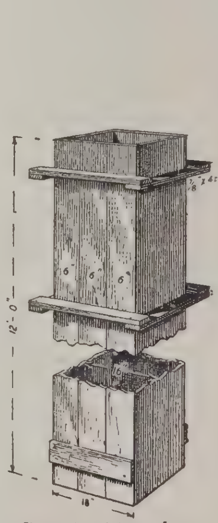


Fig. 5.—View of Wooden Form Used in Concreting a Steel Column

Figs. 1 to 5, Maginnis's System. Figs. 6 and 7, Pike's Suggestion.

CENTERING FOR FIREPROOFING STEEL COLUMNS AND ARCHES.

the winter months. The tides at Vardo have a height of 4 m (13 ft.), and at Esbjerg a height of 1.5 m (5ft.). The average temperature at both harbours, and these may be considered as ice-free, is 7½ degrees C. (45 degrees Fahr.), at Esbjerg, and about 0 degrees C. (32 degrees Fahr.) at Vardo; these are the temperatures both of the water and the atmosphere. Thus it will be seen that specimens of mortar were deposited for test in five different spots, each series containing about 700 cubes.

Long before the tests were commenced, it had been noticed that concrete work had to a large extent deteriorated at Esbjerg and Vardo. Concrete tests of a similar nature have also been made at a place where the use of concrete had given unfavourable results. Among the conclusions presented were the following:—The chemical actions of salt water are not alone able to deteriorate mortar; Portland cement appears to be almost intact. The deterioration of the mortar tests specimens was due mostly to the mechanical effect of frost. The deterioration of concrete blocks is also explained by climatic effects. The 1.3 mixture of mortar is too poor for use in the sea in Scandinavia.

The sand used in mortars should be mixed sand of different degrees of fineness, the greater portion, however, being fine sand (1/3 to 2/3); specimens having the denser mixture were not those which lasted longest. The addition to the cement of a material crushed fine (trass, or ordinary sand) is advantageous. In conclusion, it is stated that the tests in question mapped out to cover a period of twenty years have, so far, only covered half that period. The results, therefore, are not yet complete, and cannot be considered as final.

BUILDERS AND THE FINANCE ACT.

Interview with Mr. Lloyd George.

On the invitation of the Chancellor of the Exchequer, a deputation from the National Federation of Building Trades Employers of Great Britain and Ireland, consisting of the President (Mr. S. Smethurst, J.P., Oldham), the Senior Vice-President (Mr. J. W. White, Sunderland), and the General Secretary (Mr. A. G. White) attended at the Treasury on the 6th inst. Mr. Lloyd George said that he had received a number of communications from different parts of the country with reference to the way the provisions of Part I. of the Finance Act, which deals with Increment Value Duty and the Tax on Undeveloped Land, was thought to affect the interests of those builders who took up land for the purpose of development. These communications seemed to show that some misapprehension existed in the minds of the writers as to the provisions of the Act, and he desired to confer with representatives of the General Body of the Building Trade with a view of removing any unfounded misapprehensions, and of remedying, in this year's Finance Act, any real grievances as far as possible.

Mr. Smethurst.

Mr. Smethurst thanked the Chancellor for his courteous consideration, and while he regretted that owing to the shortness of the notice it had not been possible to consult his membership in regard to any points they wished to raise, he and his colleague, being themselves interested in the development of building estates, were in a position to place before the Chancellor some cases which he thought might be considered as typical of the way in which the Act worked in their parts of the country.

The following is a short summary of the cases mentioned by the President, and of the discussion thereon.

The Position of Sub-Leases of Property of Under £500.

(a) The Finance Act provides that no Increment Value shall be charged on properties of under £500 in value, but an increased Stamp Duty is levied on a transfer of interest by lease.

The practice in Lancashire is for the builder to take up land subject to a Ground Rent, and to sell the property he erects thereon, subject to an increased Ground Rent; this involves sub-leasing, and there is consequently an increased Stamp Duty to pay on such transfers which, in effect, acts as a tax on property of under £500 in value, which under Part I. of the Act is intended to be exempted.

Mr. Lloyd George said he had heard of this point already from a correspondent, and it was his intention to provide a remedy therefore in this year's Finance Act.

The Position as to Roads.

(b) In many parts of the country it is usual when land is to be developed for the builder to lay out roads, sewers, etc., prior to any building thereon being done; but in Lancashire the usual practice is to build right away and leave the making of the roads, etc., until most of the building is done, when the cost is apportioned among the owners on each side of a street. The Finance Act provides that if the roads, etc., are done, no Undevoloped Tax shall be chargeable for a period of 10 years, even though no further development work has taken place. Mr. Smethurst pointed out that this quite fairly met the first case where the roads are made at the outset, but would not meet the second case where they are made at the end of the development.

Mr. Lloyd George noted the point, and promised to consider what could be done to meet the special circumstances of Lancashire in regard to this.

No Tax on a Builder's Enterprise.

(c) An actual case was instanced where about 30 acres of land in the neighbourhood of Rochdale had been taken up at a specially low price, with a view to development on Garden City lines for workmen's and artisans' housing purposes; much time and expense had been gone to in obtaining information, preparing plans, and getting approval for a site planning scheme under the Town Planning Act. Rapidity of development was an essential to success, and any success gained would owe absolutely nothing to any surrounding circumstances; it was necessary to a successful issue that the ultimate margin between the original cost of the land and the price for which the developed property would sell should not be less than £300 per acre; the question that was exercising the builder who had the scheme in hand was whether any of that £300 an acre would be deemed to be subject to Increment Value Duty.

Mr. Lloyd George said, "Not a penny of it." It must be clearly understood that it did not matter what the builder had spent on developing his land, nor what his profit on his outlay and effort might be, these would not be taxed for Increment Duty. Whatever might be the value created by his intelligence, capital, and effort, the whole of such value was deductable before arriving at the site value; but should it happen that the result of the development in question was to increase the selling value of adjoining land, an increment value, within the meaning of the Act, would be created so far as the adjoining land was concerned, and would be subject to duty.

Mr. Smethurst remarked that the Chancellor's explanation was quite satisfactory to him.

(d) Mr. J. W. White dealt with the case of an estate bought some eleven years ago, which had undergone development ever since, and showed how, from the nature of the particulars he gave, it was necessary that the builder should take into consideration the compound interest, so far as it affected the ultimate selling price of the land, on capital sunk during the operation, even though eventually recoverable.

Mr. Lloyd George again emphasised what he had said to Mr. Smethurst under item (c), and satisfied Mr. White that no Increment Value would be charged on any value due to any of the operations of the builder necessary to his development work.

The Period of 10 Years Too Short.

(e) Mr. White then called attention to the period of 10 years allowed for development before Undeveloped Land Tax would be charged, and said it seemed too short; in proof of this, he referred to the estate mentioned above, and showed that it had been developed more quickly than other similar estates adjoining it, and nearer the centre of the neighbouring town, but that in spite of this, circumstances beyond the builders' control, such as a bad state of trade locally, causing a slump in demand for houses, had made it impossible to complete development, and it would be some years yet before it could be completed. He also instanced another case where owing to corporation requirements in regard to certain street levels on the land, a good deal of ground had to be made which necessitated waiting for the ground to consolidate before building could proceed. This delay had caused the builder to miss his opportunity, the slump already referred to had come, and he was obliged to await a revival in demand before he could proceed. He suggested that, either the term of 10 years should be extended to, say, 15 years or 20 years, or that powers should be given to the commissioners to grant an extension of the term under these and similar circumstances.

Mr. Lloyd George said the point seemed to him to be well taken, and that as far as he could see at the moment, Mr. White had made out his case, and he would carefully consider the point and see what could be done to meet it.

In conclusion, the Chancellor thanked the deputation for the practical character of the points they had raised, and for coming to confer with him, and said he would be happy to receive them again, or confer with the General Secretary, on any further points they desired to bring before him.

Mr. Smethurst then thanked the Chancellor for his sympathetic reception of the matters they had brought forward, and the deputation withdrew.

[This summary has been specially supplied to us by one who was present at the interview, and, although the newspapers contained full reports, the above digest will be found more convenient for reference.]

THE PROTECTION OF TIMBER PILES.

Timber, though it will last for an indeterminate period when protected against atmospheric influence by being embedded in earth or mud, is subject to very speedy decay in certain situations connected with earth and water. Many piles have been driven into a water-logged soil which at a later period has had the water drained therefrom by wells being sunk in the neighbourhood, or by the water being drained away by other works, and then rapid decay has set in. The decay of timber seems to occur between wind and water. In the sea, however, timber is subjected to the attacks of the torpedo and other marine borers, and creosoting only slightly increases the life. Now timber piles have been used extensively in the past for the construction of piers and jetties, and if reinforced concrete is displacing it, the reason is chiefly because of the greater life, and not so much on the score of first cost. The necessity of frequently repairing timber piles, too, led engineers to consider the possibility of avoiding the expense of withdrawing the old worn piles and replacing them with new. Various means have been taken, more especially by encasing the piles in concrete. The problem, of course, needs special study. Mr. Cooper Poole, engineer to the Harbour Board, Southampton, had under his charge several piers, wherein the piles had suffered to a great extent, and some means of reconstruction or repair were necessary. Mr. Poole invented a method of overcoming the difficulty. He places slabs of concrete round the timber piles, these slabs taking the form shown in Fig. 2. Fig. 1 shows the way in which timber piles decay when unprotected. The lower portion scored over was originally below the mud, which protected it from decay. Fig. 2 shows how he encased the timber pile with slabs, and then pored in cement grout to fill the space left by the decay of the timber pile. Fig. 3 shows the completed work.

The way in which the work is done is first, on each corner of the timber pile a small angle iron is spiked. The four angle irons form guides for the slab. The slabs are connected up round the pile and allowed to sink into the mud until they take a bearing. The concrete slabs are reinforced with diagonally placed rods, and the loops are slid on vertical rods. The slabs are formed with nibs to interlock. The protection of a pile in detail is seen in Fig. 2. The system may be employed for raising a column in continuation of a completely embedded pile for new work; and Mr. Poole's invention may be used on a rock foundation, a small joist being driven into the rock to form a connection or anchor and to serve as a guide. The slabs are easily handled, and economise in that respect over the ordinary driven reinforced concrete pile, so that a considerable saving is claimed to be effected by their use. Mr. Poole's invention is called the "Ideal Reinforced Concrete Pile." The "Ideal Concrete Slabs" have been used among others for the following:—Railway jetty for the Royal Pier, Southampton, pleasure pier, Southampton Harbour Board, Southampton; piles supporting five-ton crane, Southampton; reconstruction of town quay, Southampton; repairing of the quay at Faidley Beacon, for Southampton Harbour Board; repairing of the quay at Hythe Beacon, Southampton; repairing of wharf at Waisash, River Hamble, Hants; repairing piles at Cowes Pier, Isle of Wight. The system is described in considerable detail in an interesting booklet from which the accompanying illustration has been reproduced.

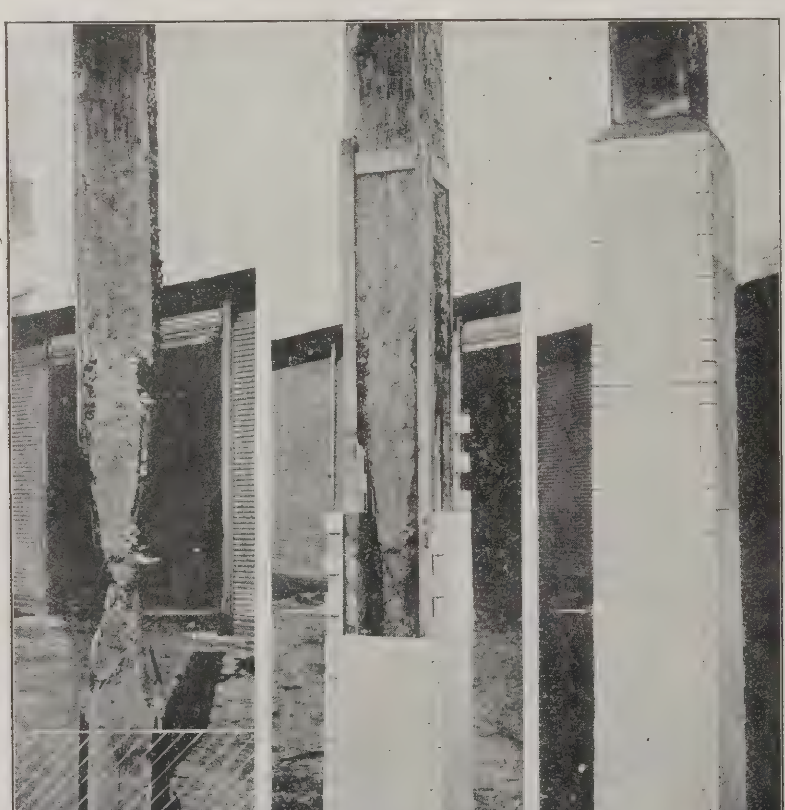


Fig. 1. Fig. 2. Fig. 3.

Fig. 1, shows decay of unprotected pile; Fig. 2, Pile encased with slabs; Fig. 3, complete encasement.

THE PROTECTION OF TIMBER PILES.

CONCRETE: ITS CONSTITUENT MATERIALS.

SOME EXTRACTS FROM A PAPER BY R. S. GREENMAN.

"If the saying that actions speak louder than words is true, then concrete is a material which is being greatly used and which is made by any one who can get a bag of cement and who adds to this cement anything in the nature of sand that he may have at hand, then allows it to stand for a while and calls the result 'concrete.' With such material as a subject for discussion, we would gain no benefit—no more than those who use this so-called concrete. If, however, we believe concrete to be a material which is a complete substitute for brick and stone, and which is to be used in large structures, in buildings or in smaller decorative features, and if, too, we believe that it is made, not by any labourer, but under the direction of a skilled superintendent or engineer, then we have a material for consideration that is worthy of the time and thought of any one who is interested in its making or its use.

"It has been said that the pyramids were built of concrete. I do not know whether this is so or not, but it is known that the Romans of that time had a cement, the art of making which has been entirely lost. It remained for the nineteenth century to produce a material that possesses qualities similar to the cement of the ancient Romans. With the production of this new cement there have developed ways without apparent end for making good use of the new product. It is really only within the past quarter of a century that this new product has been much used, and the extent of its use shows that its possibilities are perfectly enormous.

"Concrete often—yes, usually—is called artificial stone. There is really no doubt that good concrete is an artificial stone, but it is also something more. It has certain characteristics of a stone, but there are some things so decidedly characteristic about concrete that it differs from stone and assumes an individuality of its own. To make a clear distinction is not an easy task, but as we learn more about concrete, we see more clearly how concrete varies from stone, just as stone varies from brick. To make concrete there are certain essential materials. These are commonly listed as cement, sand, and stone. One other material is important —water. For sand and stone there are several substitutes. It is generally acknowledged that the cement for all large works should be subjected to rigid inspection and tests. On very large works the sand and stone also are carefully inspected. On smaller works the cement has sometimes been tested, but the sand and stone have often been given no more than a casual inspection. Invariably the blame for failures has been placed upon the cement. And often these failures have been not only disastrous financially, but have also caused the loss of life. Many failures, doubtless, are due to a lack of proper supervision, but in some cases ignorance of the materials used has permitted the too early removal of the forms and centering. In one case, known to the writer, shavings and small blocks were swept into the forms; a column collapsed and four lives were the cost of this negligence. A post-mortem examination cannot restore life; the best it can do is to suggest some way of using the knowledge gained to prevent future losses. So when concrete fails, a post-mortem examination shows that proper inspection of workmanship and materials would have prevented the failure.

"Modern hydraulic cement is of very recent introduction into many of its present uses. Hydraulic cements have been made for nearly a century, but cement of 50 years ago—yes, of 25 years ago—was not the cement of to-day. The latter-day cement that is most generally used is called Portland. Unless concrete is to be put to some extraordinary use, the cement should have certain characteristic qualities. First of all it should be sound, also it should be ground to a certain degree of fineness; it should not set, or harden, too quickly, and it should show, in tests, a good tensile strength. Generally the smaller users take it for granted that a cement of established reputation will always possess these good qualities, and they purchase and accept cement on the name of the brand. Such a practice can hardly be called safe, for mistakes occur in the best regulated families, and sometimes even the best mill may turn out some lots of poor cement. Cement is unsound usually, because it is green, not having had time to cure. After the cement clinker, or the finished cement, has been stored until the free lime has become hydrated, or slaked, the cement generally becomes a safe cement to use. A future cause for failure in this same cement may be from an excess of sulphuric anhydride or any excess of magnesia. An excess of either of these can ultimately destroy what is apparently good concrete.

Upon the fineness or cement depends to a great extent its strength. It is the fibre particles that have hydraulic activity. The coarse particles are practically inert and act as so much fine sand. It must not be understood that, of two brands of cement, the finer is necessarily the better, but, of the same kind of cement, that which is the finer is apt to produce better results. There is, however, a minimum percentage for the different degrees of fineness, above which all cement should be ground.

"The setting of cement, as defined and limited in specifications, may or may not be important—with one distinct exception. It may matter little in the majority of cases whether or not the cement takes 30 minutes or fours hours to take its initial set, as the large majority of cement users have the concrete well in place within the minimum time allowed, and only in cases where there is some delay does it make a difference. The exception which always does become a matter of importance, however, occurs when the cement takes what is called a flash set—setting hard in a very few minutes. Cement of this nature is decidedly improper, and its use should not be allowed.

"There must, too, be a distinction made between the setting of cement and the hardening, for the latter is of much importance in the making and care of concrete. The setting of cement may be considered as being limited to that time when the cement is undergoing the first chemical action, when the cement crystals are being formed; the hardening of cement takes place at that time when the cement crystals are gaining strength and continuing more slowly the chemical action which began in the setting. It is of vital importance for one to know that he may be using a slow strength-getting cement. The removal of forms or centering, the care of the concrete itself, the time at which it is safe to place a load upon the concrete—all these depend upon the rapidity of the growth in strength.

"The first consideration in the selection of sand is generally that of cost. The contractor may be willing to pay a larger price for his cement, in order that he may be reasonably sure of securing a satisfactory product, but the sand must be the cheapest that can be procured. This demand of cost, however, is gradually assuming its proper place, namely, at least partially subservient to those qualities which will produce required results. What these qualities are depend largely upon the use to be made of the concrete, but, as a general rule, the sand must be composed of hard grains; it must be composed of well graded particles. It must not have too large a percentage of voids, and it must not contain too much loam and organic matter. However, it must be admitted that it is practically impossible to secure an ideal natural sand, but some sands are so far from the ideal that their use is impossible.

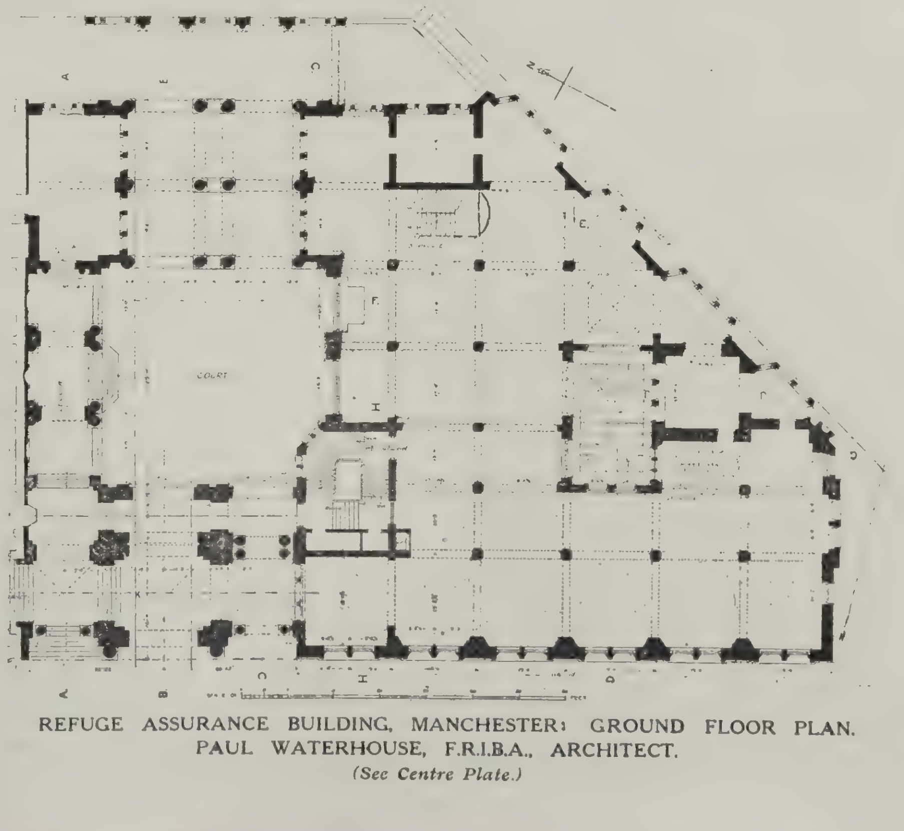
"The character of the sand grains is important. The smaller grains are generally quartz, with occasionally some feldspar. The larger grains are particles from broken down sandstone or are particles of shale. As long as the sandstone grains are not from decaying stone these sands are all right; when, however, they are soft and easily crushed, they will be much weaker than the cement and add no strength to the mortar. Shale grains are apt to be much weaker than the cement, and if exposed to the weather have a tendency to disintegrate, but with a rich mortar each sand grain would thus be protected from the weather. Feldspar should be coated with cement, and the grain also has a tendency to disintegrate and its proportion in sand should not be too great. Such sands as contain much mica do not make good sands for concrete, as the mica greatly reduces the strength.

"If sands are well graded the percentages of voids are greatly reduced. It is possible by artificial mixture to secure materials with very few voids. For special uses this may be done. For general use it is not practical, but such natural sand should be selected as will show the best graduation in the size of its grains. As an illustration, a mortar of the proportion of one cement to three sand, in which the sand is fine and contains 40 per cent. of voids, will have about 7 per cent. of space, filled with only water and air. What then can be expected of some of the lean mortars such as are being used in some modern cement work? It has been generally specified that sand shall be a sharp, clean sand. In very recent years we have come to admit that good cement will adhere toa round surface as well as to a sharp, flat surface. We have just seen that a round-grained sand contains less voids than the sharp sand. The word "sharp" is gradually being stricken from specifications and the words "well graded" are being inserted in its place.

"There is often used as a substitute for sand the finer product of the stone crushed for use in concrete or macadam. This product is called crusher dust, or screening, it often makes a splendid substitute for sand; in fact, it often produces better concrete. This will happen when the particles are well graded, the use of either sandstone or limestone screening proving very satisfactory. It oftens happens, however, that the screenings contain a large percentage of very fine dust, and with this there is also a large amount of particles of about one-quarter to one-half inch size, without a proper proportion of the intermediate grades or sizes. The result is, that, when used in concrete, the cement becomes adulterated with the fine dust and the concrete is weakened. It is true that this fine dust will aid in producing an impervious concrete, but it also makes a more tender concrete—one that will not well stand the shock of impact. There has been introduced into some use within the past few years a waste product that makes a very satisfactory substitute for sand, namely, iron ore ailings. As a rule this is well graded material and produces a very satifactory mortar.

"The question of cleanness is very important. It is almost sure destruction to concrete if the stone is coated with loam. The coating prevents a proper adhesion of the cement to the stone and with this lack of adhesion the concrete becomes similar to honeycomb—sawdust is then just as useful as stone. One of the arguments made against gravel concrete is that there is a great danger of the pebbles being coated with dirt. It is often not only advisable, but necessary to wash the gravel. In this case it might be a better plan to secure crushed stone, as a freshly crushed stone should not be coated with dirt.

"There are certain conditions in the use of concrete that are interesting and deserve consideration, but they do not really come under the head of this paper. However, the question of placing concrete during freezing weather is an important one and, in conclusion, a moment or two may be spared with profit in its discussion. Every one admits that it is better not to do so, but conditions sometimes necessitate doing concrete work in the winter months. If the concrete is not subjected to varying temperatures, that is, if the concrete could be frozen and kept frozen until the winter was over, it could be placed at any time. But in this section of the country we have very variable weather, and since it is not possible to put our concrete in cold storage, we have only the alternatives of not putting it in at all or protecting it against the action of frost. But, as has been said, necessity sometimes de-



REFUGE ASSURANCE BUILDING, MANCHESTER: GROUND FLOOR PLAN.
PAUL WATERHOUSE, F.R.I.B.A., ARCHITECT.
(See Centre Plate.)

mands that the concrete shall be put in. To lessen the harmful influence of the frost, several methods are followed. When the concrete is not to be a decorative feature there is nothing much better than the use of salt. Calcium chloride has also been used in the same way. When it is wished to avoid any possible efflorescence—due to the salts—the aggregates are heated before being used. This latter method becomes effective only when the concrete is protected from the frost until it has acquired a set and has hardened considerably."

FEDERATION NEWS.

Northern Counties Federation.

The quarterly meeting of the Northern Counties Federation was held at the County Hotel, Newcastle-on-Tyne, on September 22nd, Mr. Alex. Ross (South Shields), president, in the chair, when 34 representatives were present.

Arising out of the minutes, Mr. Robert J. Huntley (Sunderland) resigned his position as one of the Federation's representatives upon the Advisory Board of the Federated Employers' Insurance Association, Ltd., and proposed the election of Mr. J. Morice-Wright (the president of the Sunderland Association) as his successor, which was agreed to. Also arising out of the minutes, a discussion took place upon a circular which had been circulated throughout the Federation, notifying the alteration of the rule for the supply of bills of quantities, as it was thought that the sentence: "Contracts for building properties of a speculative type are excepted from the operation of this rule," was rather ambiguous, and should not have been on the circular. Mr. Robert J. Huntley moved an amendment, which was seconded by Mr. R. Johnson, as follows:—"That the rule shall not apply to properties of a stereotype character under £500, but exceeding that amount in the aggregate." Mr. W. S. Davidson moved:—"That the sentence be left as it is."

Mr. Huntley's amendment was put to the vote, and carried, 12 voting for and 4 against. Mr. Davidson's amendment was put to the vote, 10 voting for and 12 against. Mr. Huntley's motion was then put as read, and carried. It was decided that an amended circular should be issued to the members, drawing their attention to the amendment.

The secretary reported that the appeal in the case of Wallace and Douglass would be heard at the commencement of the next sittings. Counsel retained on behalf of the Federation are Messrs. Montague Shearman and Edward Shortt. Mr. Stephen Easten explained that the appeal was lodged in the interests of all parties. Contractors and sub-contractors invariably contracted on similar terms to those used in this case, and their object was to place beyond doubt the meaning of the words commonly used by all.

The position of the proposed alterations to Clauses 30 and 31 of the National Form of Contract was reported upon by the secretary, who drew attention to the references to the New Irish Form of Contract referred to in the "Architects' and Builders' Journal" issue of the 21st September, clause 30 of which apparently provides in a better way for that which was proposed to be obtained by the amendment of Clause 30 of the National Form.

The president (Mr. Alex. Ross) gave an interesting report upon the proceedings at the half-yearly meeting of the National Federation in July last, for which he was heartily thanked.

A report was received in connection with a violation of the Sunderland Operative Stonemasons' working rules by a Federated non-local contractor. The terms of settlement arrived at through the intervention of the Northern Centre Conciliation Board were read. Arising out of the report, Mr. Stephen Easten said that such a rule as that of the Sunderland stonemasons was to the detriment of any of the members of any other local associations who had not such a rule and who desired to carry out a contract in that district, he moved:—"That the attention of the local associations be drawn to the fact that in the opinion of the Federation the present rule of the Sunderland Association or of any other association which has a similar rule is injurious to the members of the Federation, and that an early opportunity be taken to seek the deletion of the rule, and the worked stone rule of the Tyne and Blyth district or a similar rule be adopted in its place." This was seconded by Mr. J. C. Hope and carried, after Mr. F. W. Ranken and Mr. R. J. Huntley both spoke upon the matter and pointed out that it was not only a matter for the Sunderland employers, but for the operatives as well, and it was not improbable that action for such deletion might mean a strike in any town that sought it.

Mr. Huntley moved an amendment to Mr. Easten's resolution as follows:—"That the latter part of the resolution dealing with the Tyne and Blyth rules be deleted, and the following substituted:—"That the members be at liberty to get their stone from any district." No seconder in this was, however, found.

The secretary reported upon the invitation to tender for foundation work for the Gateshead Corporation in connection with their asylum at Stannington, it having been intimated that no tender would be considered without its being accompanied by a priced schedule. The Tyne and Blyth Federation, who considered the question, thought it not opportune to withhold the schedule of prices in tendering for the particular work, but thought the quantity surveyors and architects should be asked to discuss the matter with the contractors, and appointed a deputation to do so. It was thought by that Federation that the request should come from the Northern Counties Federation. The matter was further dealt with by Mr. Stephen Easten, who moved the adoption of the report, and that the letters should be sent by the Northern Counties Federation, which was seconded by Mr. W. Foster and agreed to. It was decided that the deputation appointed by the Tyne and Blyth Federation would be ample.

It was reported that the following rule had become part of the rules of the National Board of Conciliation, and had been accepted by the National Federation: "That members of the various Conciliation Boards who may be members of any Board having considered a case, shall not sit personally on any subsequent hearing of the said case, but shall send substitutes." The report was received.

The question of the further issue of the Federation year book and directory was considered, and, on the proposition of Mr. R. Heslop, seconded by the President, it was resolved: "That the Federation year book and directory be issued for 1911, and that the local secretaries be requested to give active support in obtaining advertisements and in supplying the necessary information."

The National Conference of Secretaries is to be held at Manchester on October 19th next, and it was resolved: "That the Federation secretary attend the conference, and that the local associations be recommended to send their secretaries."

The annual meeting of the Federation was considered, and it was resolved: "That the annual general meeting of the Federation be held at Tees-side within the first fourteen days of December. The place to be decided upon by Tees-side."

Attention was drawn by the National Federation to the Town Planning Conference, to be held in London during the week October 10-15. Mr. Stephen Easten said that the Federation should not leave the matter in the hands of enthusiasts, but should send a representative to the Conference, who should be the secretary, who would glean the necessary information, which would be communicated to the members, and possibly advise them how it affected them. This was agreed to unanimously. Mr. Heslop said that Mr. Easten should be asked to go. Mr. Easten, however, said he expected to be there in another capacity.

The secretary gave a synopsis of the special advantages of the Personal Accident Insurance "Master Builder's Policy," issued by the Federated Employers' Insurance Association, Ltd., and it was resolved: "That a circular be printed showing the special advantages and terms of this class of insurance, and distributed among the members of the Federation."

The secretary drew attention to the Finance (1909-1910) Act, 1910, New Land Values, and read a circular issued by the Yorkshire Federation, dealing with the subject. It was resolved: "That the circular be printed with such alterations as may be deemed necessary, and distributed among the members at once."

The secretary read a newspaper report of a dispute which had arisen between the operative stonemasons and the quarry owners. The report was received.—W. H. Hope, Secretary.

Leeds.

The monthly meeting of Leeds Master Builders' Association was held at the offices of the association on September 13, Mr. W. H. Dews in the chair.

A letter was read from Messrs. Worsnop expressing their thanks for the letter of sympathy and condolence forwarded to them on the death of their esteemed father, the late Mr. Worsnop, slater.

The secretary was authorised to attend the National Conference of Secretaries to be held in Manchester on October 19th.

It was reported that, after several interviews with the Bricklayers' and Labourers' Trade Committee, and two meetings of the Local Conciliation Board, a decision had been arrived at by the latter with respect to winter working hours. Originally the employers had given notice to the masons, bricklayers, and Labourers for revision of the winter working hours, in order to bring about uniformity as far as possible. The operative masons at once agreed to the proposals, and stated that it was their desire to distribute the available work as much as possible, and with this object in view they were in favour of the proposals. The operative bricklayers and labourers, however, laid strong objections on the ground that it would reduce the income of their members. Two meetings of these trade committees were held in order to negotiate a settlement if possible, but although various suggestions were made, none of them met with acceptance. The matter was therefore referred to the Local Conciliation Board. It was pointed out to the Board that, with a view to more effective organisation of work, the employers were desirous of obtaining uniformity in the winter working hours of the various trade sections, and the proposals with regard to bricklayers and labourers were identical with those accepted by the masons. Mr. J. Judge, on behalf of the operatives and bricklayers, stated that the proposals had been carefully and fully considered at a representative meeting of the societies interested, when a resolution was passed that the proposals as submitted could not be entertained. They were, however, of opinion, that the employers' views and intentions would be largely met if the winter time sheet, which had been in existence for some years, came into operation two weeks earlier than hitherto.

A motion was made that the time sheet be brought forward two weeks, and with this exception that the present winter working hours be observed. An amendment was moved that the proposals of the employers for amendment of the winter time sheet be approved.

Both the amendment and original motion were put to the vote, when a tie resulted.

The employers' representatives retired, and, on resuming, Mr. Pickard reported that they were willing, without prejudice, and with a desire to obtain a settlement that evening, to make certain amendments which were formally moved. On being put to the vote, however, a tie resulted.

A motion was made by the operatives' section that the matter be referred to arbitration in accordance with the provisions of rule 16. This also, on being put, resulted in a tie. In order that the position might be carefully considered, a resolution that the meeting be adjourned was unanimously carried.

At the adjourned meeting, emphasis was again laid upon the friendly intentions of the employers' proposals, which were solely actuated by a desire to obtain uniformity in winter working hours. Mr. J. Sharpe thereupon stated, that after careful consideration of the matter, the operatives' societies, who were parties to the Conciliation Board, were prepared to accept the winter working hours at present in operation with the operative joiners, provided that all the parties assented to this course. It was thereupon moved "that the joiners' time sheet be adopted in its entirety by all the societies who are parties to this Conciliation Board." The employers' representatives asked permission to retire. On resuming, Mr. P. Rhodes stated that, although there was some difference of opinion, the employers were willing to accept the proposal. On the motion being put, it was carried unanimously.

The best thanks of the Board were tendered to Mr. W. T. Newlove for his impartial services in the chair.

The revised winter working hours for the four trades parties to the Board are:—For twelve weeks, commencing on the last Saturday in October, work shall commence each day at 8 a.m., and cease at 4.30 p.m., except Saturday; and for the next four weeks work shall commence each day at 8 a.m. and cease at 5 p.m., except Saturday; work shall cease on Saturday at 12 noon. The dinner meal hour to be mutually arranged on the various jobs.—J. Davidson, Secretary.

Liverpool.

The forty-fourth annual general meeting of the Liverpool Master Builders' Association was held on Tuesday evening in last week, when a large number of members attended. The retiring president, Mr. R. Arthur Costain, occupied the chair during the earlier part of the meeting. The annual report dealing with many and various matters of importance to the trade, and the treasurer's statement of accounts for the past twelve months, were read and approved. Mr. James T. Duthie was elected president for the ensuing twelve months. Mr. Duthie thanked the meeting for electing him to the position of president. He also referred to a letter that had recently appeared in the Press signed "Contractor," with regard to complaints against the Education Committee, and also to a letter in reply, signed "Onlooker." Mr. Duthie pointed out that it was well known in all branches of the building trade that this association at all times is prepared to take up any real grievances contractors may have, but in order to do this the members must notify the association of their grievances.

On the proposition of Mr. Chas. Tomkinson, seconded by Mr. Hans E. Hughes, a hearty vote of thanks was accorded to Mr. R. Arthur Costain for the very valuable services rendered by him to the association during the past twelve months. Mr. Costain thanked the meeting for the vote of thanks, and specially urged the members to make full use of the new "Reference List" relating to architects, quantity surveyors, and clerks of works, and also supplemented the new president's remarks with regard to members' grievances, urging members to bring their grievances, whatever they may be, to the association, and they would be attended to immediately, instead of expecting the association to move in certain directions without having the grievances brought to its knowledge.

The following other officers were elected:— Mr. R. Stevenson Jones, senior vice-president; Mr. John Rimmer, junior vice-president, Mr. Thomas McHugh, treasurer; and Messrs. H. E. Dallow and J. Sirett Brown, honorary auditors. In addition to the past presidents who are not serving on the various committees, forty-two members were elected to form the Council for ensuing twelve months. The Council is divided up into seven trade committees, representing the following:—Bricklayers, carpenters and joiners, painters and plumbers, masons, plasterers and slaters, electricians, associate members.

A discussion took place as to the future arrangements with regard to the Builders' Exchange, and some suggestions were considered, and the whole matter was referred to the Standing Committee to carry out. Other matters of trade interest were also discussed.

Mr. H. D. Mathias raised a question with regard to the system relating to technical education for the consideration of the members, with a view to the matter being fully considered at some future date.

On the proposition of Mr. R. A. Costain, seconded by Mr. Wm. Bullen, it was carried unanimously that the best thanks of the meeting be tendered to Mr. Bertram B. Moss as secretary, for his services during the past twelve months.—Bertram B. Moss, Secretary.

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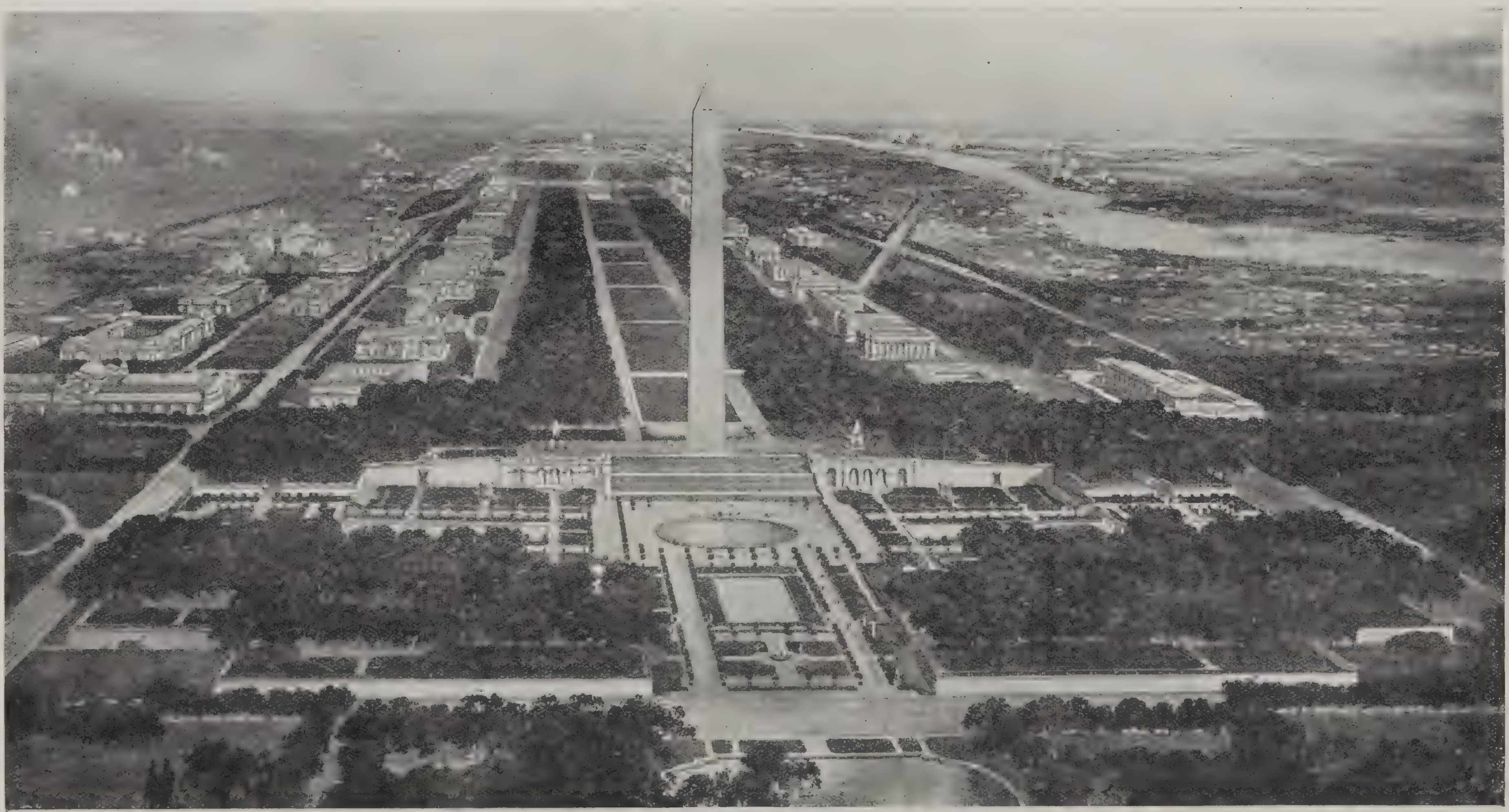
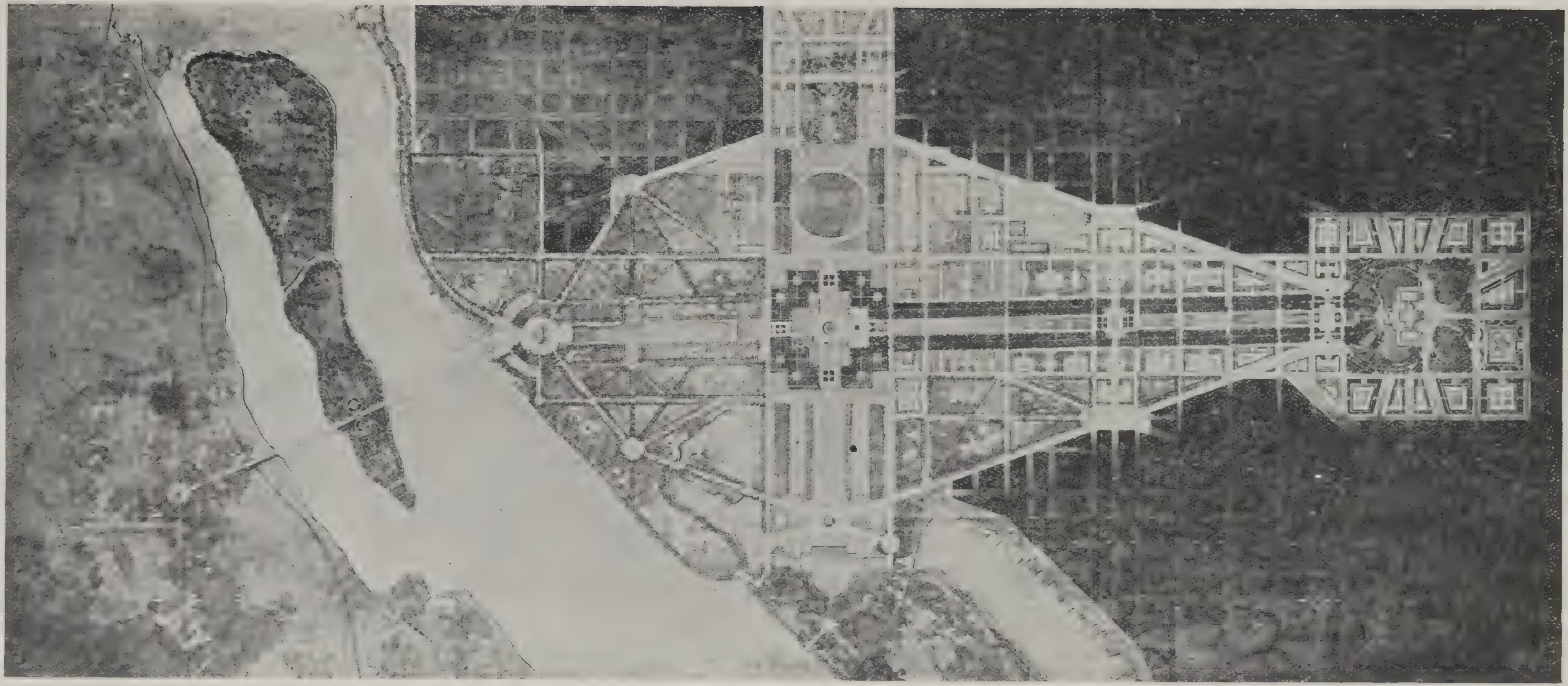
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *October 19th*, 1910.



Bird's-eye View.



General Plan comprising the area between the Capitol and Lincoln Monument, White House and Potomac Park

SCHEME FOR THE DEVELOPMENT OF WASHINGTON. U.S.A.

(Town Planning Exhibition.)

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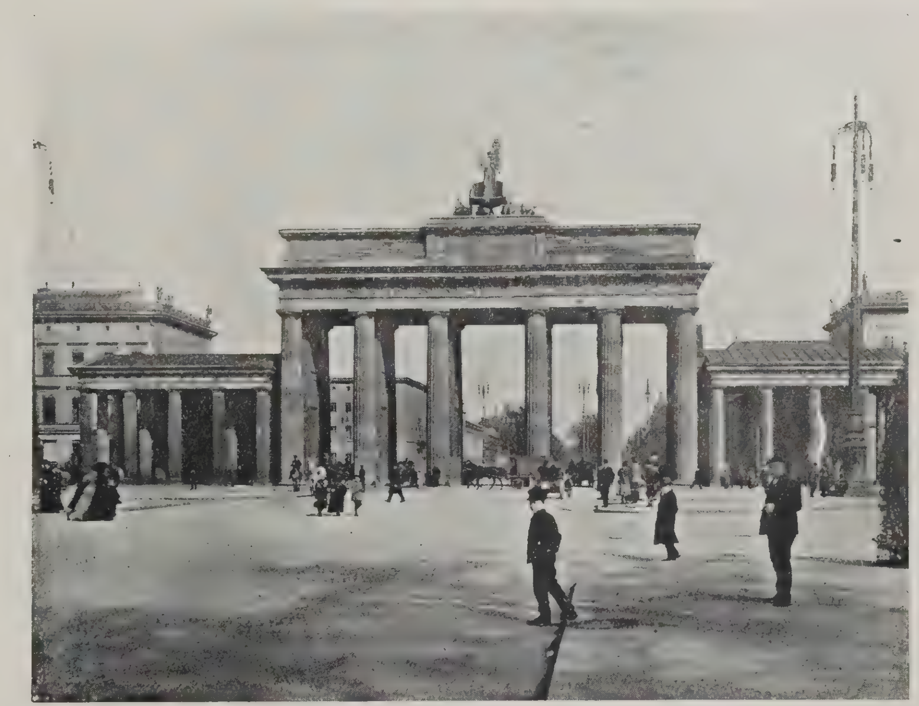
THE ARCHITECTS' &
BUILDERS' JOURNAL

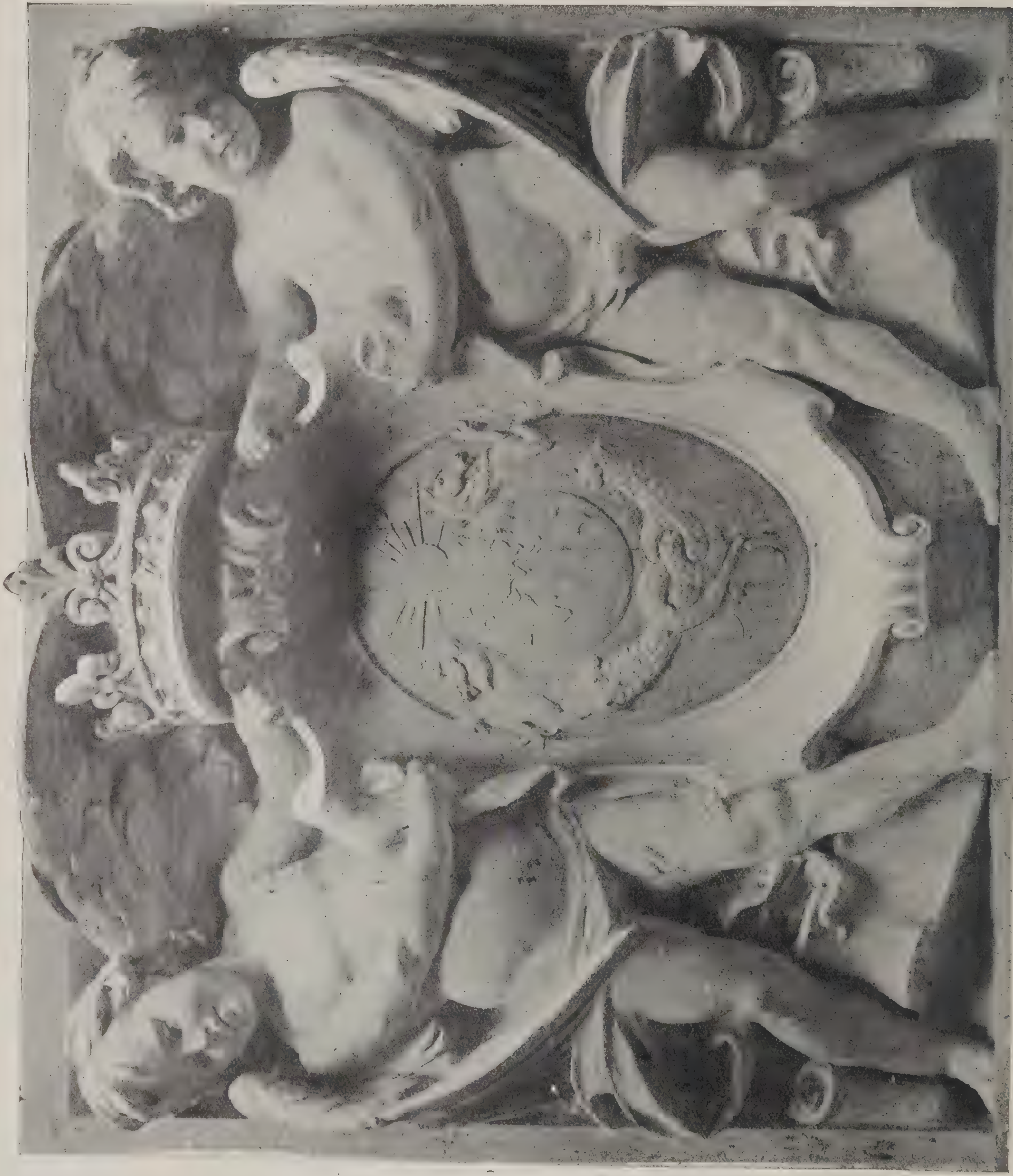
WEDNESDAY,
OCTOBER 19th, 1910.

Volume XXXII. No. 820.



This closes the western end of Unter den Linden, and forms the gateway to the Tiergarten. It was designed by Langhans, and erected about 1790. Surmounting it is a bronze figure of Victory standing in a chariot and driving four horses, which, since its recovery from Napoleon, is placed driving into the City.

THE BRANDENBURGER THOR, BERLIN.



There are several panels of this type on the building, and they are typical of Mr. Drury's grace in composition and modelling. The shield held by the boy figures bears the seal of one of the companies allied to the Eastern Telegraph Company, for whom Electra House was erected, from designs by Mr. John Belcher, R.A.

FIGURES IN PANEL ON ELECTRA HOUSE, FINSBURY PAVEMENT, LONDON. ALFRED DRURY, A.R.A., SCULPTOR.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

OCTOBER 19th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 820.

Note: The List of Contents will be found on Page IV of the front advertisements.

Some Comments on the Town Planning Conference.

THE lecture-scheme of the Conference had the merit of being arranged on a consistent and comprehensive plan. The lectures of the first day (Tuesday) dealt with "the cities of the past"; Wednesday brought us to "the cities of the present"; Thursday, to the subject of "city development and extension," including public parks and gardens; and Friday, to that of "cities of the future." Whoever was responsible for thus classifying the programme merits every recognition for the idea; it is far better than having, as we often find in such cases, papers at the same sitting on miscellaneous and totally unconnected subjects. And generally speaking, it must be said that the whole business has been very systematically arranged and carried out, at an expenditure of voluntary time and labour of which those not behind the scenes can hardly have an adequate idea.

Professor Gardner and Professor Haverfield, in their respective lectures on Greek and Roman city-planning, succeeded in showing that there was more ground for definite conclusions on the subject than one might have supposed. In regard to the cities in Greece proper, indeed, there seems to be, as we have already assumed, little ground for concluding that anything worth calling town-planning in the modern sense existed, beyond the fact that there was a centre of importance formed by the temple or temples and the market-place: the houses that lined the streets were of little consequence in comparison; for, as Professor Gardner reminded us, the typical Greek spent little time in his house, which was only a shelter, and the streets probably arranged themselves automatically on the principle of getting as much accommodation as possible into the confined space within the walls. But in the Ionian cities in Asia Minor the case was different, and the plan of Priene, to which special attention was given, showed a most regular arrangement of street lines crossing at right angles. Professor Haverfield brought out the fact that this rectangular arrangement of streets was also (as indeed one would have expected) the typical Roman system of town-planning. Considering how much ridicule has been thrown on the planning of American cities on the same principle, it is rather amusing to find that the American "gridiron" plan is really a return to the system of classic antiquity. It has to be remembered, however, that the ancient cities that were planned in this way were very small places in comparison with New York and Chicago, and the gridiron plan pure and simple, though it may present little practical inconvenience in a small town where the distances are short, is a rather exasperating one for the inhabitant of a large city. Hence the scheme which is now the favourite one in American city improvements—the "gridiron" plan pierced by large radiating streets cutting through it at oblique angles—is really a type of plan of a most respectable origin, combining ancient precedent with a modification prompted by modern convenience of transit, although from the irregular frontage it leaves, not very propitious to architectural design.

The meeting of Wednesday morning, on "the cities of the present," commenced with a paper by Professor Baldwin Brown, which was in some respects rather a counterblast to the general tendencies of the Conference. It was essentially a word of caution to those who, enthusiastic in the cause of city improvements, may be led, in their zeal for the future, to forget or underrate the claims of the past. We had to be on our guard, Professor Brown urged, against "the average civic administrator," who was too apt to regard an old building as something which merely stood in the way of his improvement scheme, and, being old, might as well be demolished. There is no doubt that such a caution is very much wanted, and that there is a tendency among city improvers to pronounce a building too dilapidated for preservation, as an easy method of getting it out of the way, when it might very well be preserved if the best and most effective measures were taken. The old Bridge of Ayr was cited as an object-lesson in this respect. Let us bear in mind, in all improvement schemes, that a city is a growth of the past, and that it is a fatal mistake to obliterate the record of its past in providing for its future.

The ably written paper by Mr. Mulford Robinson on "Cities of the Present as representative of a transition of Urban Development," read for him in his absence, is one which we find it difficult to agree with in all respects. The main point in it, after drawing a contrast between the conditions of ancient and of modern cities, was that new streets and roads should be designed with respect to the amount of traffic which they would have to provide for; that many streets in the humbler neighbourhoods were laid out much wider than was really necessary; that these over-wide streets were an evil and a waste of space, and that consequently any standardising of street widths by legislation was a mistake. It is a proposition which would open the door to a great deal of abuse of the situation. In the first place, if there is not a legal standardisation, there will be constant efforts to obtain sanction to a narrower street than is desirable for hygienic reasons. Secondly, it is not possible in many cases to predict what may be the ultimate traffic requirements of a neighbourhood. Thirdly, we object to any legislation tending to narrow the width of streets. The average width of streets in English cities is too little as it is (compare the average width of streets in London with those in Paris), and we entirely deny that a street wider than is absolutely necessary for the traffic is an evil. A street too wide is a great deal better for the people who live along it than a street too narrow. It is a question of hygiene, and in that point a wide street is a blessing and not a curse. Mr. Robinson's paper is a kind of thin end of the wedge for getting narrower streets accepted, and, however ably written (as it certainly was), we must decline to accept its arguments and its conclusions.

The difficult and intricate question of the principle on which the development of an existing city should be carried out was the subject of an admirable paper by Mr. Raymond Unwin at the Thursday morning meeting, and to some extent also of that by Professor Reilly at the Friday morning meeting, for both papers dwelt a good deal on the necessity of organisation, of a general scheme to which all details should be subordinated. The broad view of the subject taken by Professor Reilly was, that we are now in the face of a new situation, arising out of the growth of democracy. The eighteenth and early nineteenth century squares of London were the expression of an ordered wealthy class, and were built on a system in which individual character was confined to the interior appointments of a house, the exterior architecture being treated and grouped as a whole and for a sober but comprehensive architectural effect. The new problem for the architect, he thought, was to provide for the homes of the people. There is a good deal of truth in this view (which has been brought forward before), though it must not be pushed too far. The real point which Professor Reilly made, and which deserves every attention, was this: that in providing for the homes of the people we must bear in mind that we had to deal with the people of to-day, and not with those of the middle ages; and that the so-called picturesque cottages of the Letchworth and Hampstead sites, with their high roofs, small windows, and rooms cut up into odd angles, were not a real provision for the life of the present day. This, though probably an unfashionable doctrine at the moment, is perfectly true, and the sooner it is recognised and acted on the better. The small houses of to-day must represent the civilisation of to-day, not that of two or three hundred years ago.

In days when it is not the fashion to "found" cities as new schemes, which can be planned as the founder pleases, the new suburban district affords the only opportunity for actually laying out a new plan on complete and definite lines; though, as Mr. Raymond Unwin suggested, the suburban villages (if one may so call them) must be regarded and planned as having a relation to the existing town which is their centre. His idea seems to be that such suburbs should form groups not quite closely connected with the town, but preserving a certain amount of space between them and the actual town; groups strung round it at a convenient distance; a pleasing arrangement, no doubt, if municipalities can resist the temptations which would be offered by the building value of these intermediate spaces. With Mr. Unwin's idea that we ought to abandon the practice of building districts of one class of dwellings only, and endeavour to mingle the higher with the lower class of residences (we have observed that this is part of the faith of Hampstead Garden City), we cannot agree; in fact, it is practically impossible, because at variance with the habits of modern life, both of the wealthier and the poorer classes. The latter, we may suspect, would prefer to live alongside their own class, rather than have rich men's houses brought to their gates.

It has to be recognised that the organisation of comprehensive improvement schemes involves a considerable administrative difficulty. Mr. Riley in his paper on "City Development," which was really a history of the Board of Works and County Council improvement schemes, invited the meeting to face and realise this difficulty. There are a great number of separate parishes and district Boards within the London area, which have each their rules, their ideas, and their ambitions; and with each one of them claiming to act on its own lines, unity in an improvement scheme was manifestly out of the question. "We must get rid," said Mr. Riley, "of the parochial element." Perhaps that is one of the most important suggestions of the Conference.

On a Speech that Might Have Been Made.

THE toast of "Art, Literature, and Science" came up again at the Conference Dinner, as it usually does at dinners of societies which are in any way connected with the arts; but considering how great a subject it is, it is curious how little attempt is ever made to give a real meaning to it, or to attempt to evolve anything like a "common denominator" for the three subjects, which would give a reason for coupling them together. We may suggest, in the first place, that the order in which the words were placed is not the best; it should rather be "Art, Science, and Literature." The connection of science with art is closer than that of literature; more especially in the case of architecture, which is an art based upon science, and powerless without its aid. Art is the shaping of matter with the object of inventing forms which are symbols of ideas. Science is the shaping of matter with the object of practical utility. Both are concerned with matter, and interact upon each other; with a bad art, the objects produced by science are likely, however useful, to be ugly or vulgar; with an incomplete science the objects produced by art (and especially, as observed, by the art of architecture) are likely to want what may be called backbone. Literature is the expression of thought in an artistic form; it is not the mere expression of facts in writing — a book on the steam-engine is not literature; writing only comes under the denomination of literature when the form of expression is refined enough to be a subject of interest and pleasure in itself. But literature must have something to speak of; must have ideas to express; and the nature of those ideas is very much influenced by the art and science of the day; many passages from poetry might be quoted in illustration of the fact. So that literature should naturally come last (though not least) in the trio; it is the expression of what we feel about the subjects with which science and art deal. One would like to hear some competent speaker work out that idea in a speech. As a rule, we get to such a toast mostly only detached reflections, more or less commonplace, in regard to a subject which should be treated as a great whole.

A Sylvan Suburb.

THE unsatisfactory name, "garden city," and the still more objectionable term, "garden suburb," seem likely to be superseded. An imaginative reporter now describes in advance the building estate which is about to be laid out on garden city lines at Winchmore Hill as a "woodland suburb." There is no doubt that the word suburb, ugly enough in itself, has acquired, by the unloveliness of the buildings it connotes, as well as by the only too well defined characteristics of the inhabitants, a sinister significance which seems to disqualify it for less base uses; and a "woodland suburb" is an association of terms that seem to be hopelessly incompatible. The Winchmore Hill Woods, which, we are reminded, were the haunt of Charles Lamb, of Leigh Hunt, and of Thomas Hood, are to be converted into a public park, around which the "woodland suburb" is to be built. The Southgate Urban District Council has acquired the park at a cost of £20,000; and, under an agreement with the vendor, no house of a less rental than £50 a year will be built, and as many trees as possible will be spared.

An Irving Theatre.

THE new theatre for London about which we published a note in our issue for October 5th, is, it is announced in the "Evening News," to be built by Mr. H. B. Irving, and it will be called the Irving Theatre. It will stand within about a hundred yards of the statue of Sir Henry Irving, which is to be placed at the side of the National Portrait Gallery. The new playhouse will have its main entrance in Charing Cross Road, and will face Wyndham's Theatre, while on either side are the Alhambra and the Hippodrome. At present a small portion of the site, which was the property of the late Mr. Oscar Phillipe, of the Cavour Restaurant, lies idle. It is not Mr. Irving's intention to carry his theatre through to Leicester Square. It is stated that the site will change hands for £100,000, but all the land will not be occupied by the Irving. It is proposed to provide seats for two thousand people, and special attention is to be paid to the stage, which is to be both large and fitted with the most modern appliances for the quick changing of ambitious scenes. It is hoped that the house will be completed in fourteen months' time, when Mr. Irving will open it with a

Shakespearian play on his return from Australia. The stage-door will be close to that of the Alhambra, and there will be entrances and exits in Bear Street, the road which leads from Charing Cross Road to Leicester Square.

Corporation Architects.

AT a recent meeting of Oswestry Town Council, Alderman Lacon moved as an amendment to the proposed instruction to the surveyor to prepare plans for the new almshouses that they advertise for competitive designs, and offer a premium of £10 for the best set, such premium to be merged in the commission if it was decided to accept the plans. When the plans came before them, he contended, they ought to have an expert to advise them which were the best, and that person was the surveyor. If, on the other hand, they adopted the recommendation of the Committee, they would have no choice but to adopt the surveyor's plans. This is of small concern as regards the mere work involved, but, as a matter of general principle, it is impossible not to sympathise with the Alderman and his supporters in their contention that, while the surveyor is doubtless fully competent to prepare such plans, it is not quite fair to him to burden him with such extra duties; nor to the outside architects, who are thus deprived of an opportunity; nor to the corporation, who are thus to forgo the advantages of competition. This argument is by no means specially pressed with regard to the case at Oswestry, which happens to be of comparatively small importance; it is simply advanced as a general proposition, applying with equal force to any surveyor and any corporation. It is for this reason that one cannot help regretting the decision of the Council, by six votes to twelve, to reject the proposal to advertise for competitive plans. We have always held that for many reasons the position of a corporation architect or surveyor is, as a rule, best kept purely consultative and advisory.

St. Helen's, Bishopsgate.

THIS old church, which is sometimes called, somewhat clumsily, "the City's Westminster Abbey," because it contains more monuments than any other London church, is undergoing extensive repairs. The work of restoring the fabric was placed early last month in the hands of Messrs. Colls and Sons, builders and contractors, under the superintendence of the architect, Mr. R. H. Mew, F.R.I.B.A., surveyor to the Merchant Taylors' Company. After the erection of scaffolding a close examination of the interior walls was made, and some highly dangerous dilapidations hitherto unsuspected were discovered. In particular, the wall above the fine canopied monument of Sir William Pickering, which dates from 1542, was found to be completely fissured, and it is the opinion of the architect that, if this wall had been left much longer without repair, the arch sustaining it would have given way. After needling the arch, the wall has been extensively grouted with Portland cement and bonded, while the piers of the arch have been considerably strengthened with new masonry. Further work is also necessary to the walls over many of the arches, and a considerable quantity of decayed stonework throughout the building will have to be cut out and replaced. In addition to this, a great many of the roof corbels, being utterly decayed, have been replaced by new ones of Portland stone. There are still many other serious matters to be taken in hand before the interior can be pronounced to be in a sound condition. The stonework throughout is to be fluated; the monuments must be cleaned, and in some cases repaired; and the stained glass and other windows will have to be cleaned and repaired. Also there is a good deal that needs attention externally. Besides the Pickering monument, the church contains a large sculptured altar-tomb to Sir Thomas Gresham, and some fine brasses of the fifteenth and sixteenth centuries.

King Edward's Way.

AMONG the multitudinous suggestions for memorials to the late King Edward, there is one that makes a peculiar appeal to the town planner. It is that for a new road from London to Windsor, a King's Way, or processional road. Such a memorial, the author of the suggestion claims, in a letter to the "Times," would be impressive in its magnitude, expressing in true proportion the nation's esteem for their late Sovereign. It would confer permanent benefit on the people of London by realising one great step in the direction of remedying one of the gravest evils which afflict all classes, the congestion in the streets, which causes constant, heavy, and widespread loss of time and money. The route proposed for the new road commences at the point where West Cromwell Road is blocked by a hoarding on the east side of the North and South-Western Junction Railway, thus depriving the public of the full use of Cromwell Road, one of the widest and best avenues out of London. The route passes southward of Hammersmith Broadway, thus avoiding and relieving the congestion at that crowded point; strikes almost in a straight line to the south side of Gunnersbury Park, and then goes in a westward direction to join the Bath road beyond Hounslow Barracks Station. The Bath road would be utilised to a point near Longford, where the new road would strike across open country, thus avoiding the narrow streets of Longford and Colnbrook, and, passing to the south of Ditton Park, would approach Windsor by the existing Victoria Bridge across the River Thames. The scheme would involve the construction of about seventeen miles of new road, and the total cost is estimated at about a million and a half sterling.

The Restoration of Hampton Court.

THE restoration of the recently discovered moat and the bridge spanning it in front of the west entrance to Hampton Court Palace has now been completed. It restores to the historic building something of the importance and dignity which it has lacked since, in the early days of the reign of George III., the two upper storeys of the Great Gate House, with its four angle turrets, their cupolas and gilded vanes, were removed. When Cardinal Wolsey built the place, there was one omission. It did not present to the beholder on any side, a drawbridge, or loopholes, without which, up to that time, no nobleman thought of erecting a mansion. When, in 1526, the Cardinal thought it expedient to present the Palace to his Sovereign, Henry did not immediately set about the alterations, which, when they were completed, left very little of the original standing. It was in 1535 that the moat was made and the fine stone bridge built. The stone came from Headington Quarry, near Oxford. As Mr. Ernest Law, to whose initiative the excavations are largely due, points out, the masonry has been found to be in a wonderful condition of preservation, the edges being as sharp and clean as if cut only yesterday. By a curious accident (says a writer in the "Daily Chronicle") the name of every man who had a hand in the making of this bridge is preserved to us. They were well paid, according to the then value of money, the bricklayer receiving 7d. a day, and the labourers 5d. instead of the usual 4d. They were given yet another 1d. a day "for standyng laydyng of wattr owt of the foundacyons of the bryk wall in the mote, by the ston bydge." This was in 1536, when the moat wall was built. The brickwork of both the moat wall and the main building, though buried since 1700, has mostly been found in as satisfactory a condition as the stonework of the bridge. Where necessary, it has been carefully patched with the old Tudor bricks, tens of thousands of which have been collected from the debris and put aside for the work of restoration. The retaining wall has been restored—with the slender stone pinnacles, which rose above it at intervals, surmounted, like those on the bridge, with "the King's beasts" carrying vanes, decorated with the Royal badges and initials.

CHRONICLE AND COMMENT.

The Architect and the Engineer.

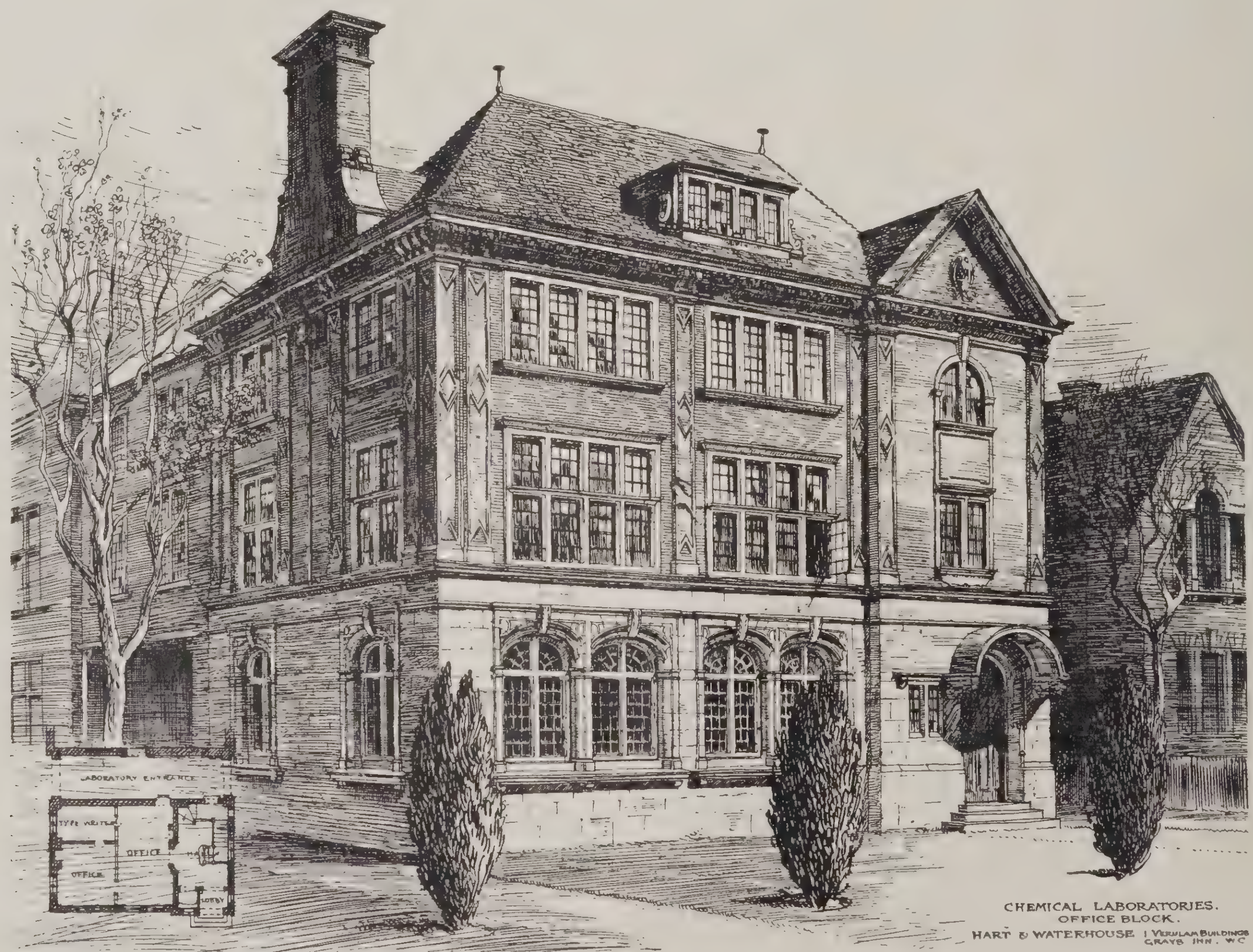
An exceedingly delicate question has been discussed—not too delicately, perhaps—by the Borough Council of Newport (Mon.). The point at issue was, as far as the newspaper report enables us to understand it, Should a Borough Engineer be appointed at a higher salary than that enjoyed by the Borough Architect, and thus, in a manner, be given a superior status? There was a good deal of argumentation; it was proposed that the architect should be paid £400 a year, and the engineer £350. This motion found no seconder, and was lost. Afterwards the respective positions were reversed, someone proposing that the engineer should receive £400 and the architect £350. This motion was lost, and ultimately it was agreed by thirteen votes to eleven that the salary in each case should be £400. Thus honours being divided, honour, we trust, is satisfied, and the British love of compromise is again made manifest. But it does not seem very clear that thereby the nice question of precedence is definitely settled.

London's Homeless University.

It is a curious anomaly that while the University of London is second to none in educational standing and repute, and while its degrees and diplomas are held in the highest estimation the world over, the citizens of London have not hitherto felt sufficiently proud of it to provide it with a suitable habitation. The University, as pointed out by the principal, Prof. Miers, the other day, to a newspaper interviewer, is at present housed in a part of the Imperial Institute, where the space at disposal is wholly inadequate. It has insufficient room for its examination candidates, its clerical staff, and its library. It affords no meeting-place, no form of club life, for its alumni. There is a suggestion that it should be allowed to occupy the whole of the Imperial Institute. For our part, we should, upon many grounds, greatly prefer to see it worthily housed in a new building, specially designed. No kind of makeshift, even though it possesses the undoubted nobility of the Imperial Institute, is worthy of the dignity of the University of London.

Developing Corporation Estates.

Cardiff has made what, on the face of it, appears to be a businesslike movement with respect to the development of corporation estates. At a meeting of the Corporation Lands Committee it was pointed out that the Corporation had valuable tracts of land in various parts of the city which would yield good returns if developed by speculative builders. Some of them had been unlet or inadequately remunerative for years. In view of this fact, it was moved: "This committee strongly recommends the employment of agents to deal with the properties of the Corporation capable of development upon the following conditions:—(1) The appointment is not to be regarded as a permanency, but shall be renewed or otherwise annually, as may be decided by the Council. (2) Applications for the appointment shall be invited from architects, land agents, or estate agents already practising in Cardiff (and not acting as agents for any large landowner). (3) Applicants shall be invited to state the remuneration required



The above illustration shows the office block of the laboratories recently erected at Holloway for Messrs. Fletcher, Fletcher & Co., Ltd., for the manufacture of "Vibrona." The manufacturing portion of the building at the rear consists of three floors, each 82 ft. by 46 ft., and is lined throughout with white glazed bricks relieved by coloured bands. The contractors for this portion were Messrs. Patman & Fotheringham, Ltd. The office block, the design of which is based upon the early French Renaissance, is constructed of Portland stone and Lawrence's 2 in. red bricks, with window sashes of steel and gunmetal. The interior woodwork is oak. Mr. J. Carmichael was the contractor for this portion. In the electric lighting installation, which was carried out by Messrs. Rawlings Bros., Ltd., the "Stannos" system of Messrs. Siemens Bros. & Co., Ltd., was adopted. The architects were Messrs. Hart & Waterhouse, FF.R.I.B.A., of 1, Verulam Buildings, Gray's Inn, W.C. The drawing was exhibited in this year's Royal Academy.

by way of commission upon the price secured for any property sold through the appointed agent, or upon the annual ground rent obtained for any property let upon lease for 60 years or upwards; upon the annual rent obtained from any property let for any shorter term. The Council shall not be precluded from treating with persons otherwise introduced or dealing direct with the Council, but the land agent shall be entitled to one-half the scale of commission in such cases." The resolution was carried unanimously.

Contractors' Worries.

In his very interesting paper on American methods, read recently before the Institute of Builders, and published in our last issue, Mr. Moritz Kahn referred to the habit of the American workman of striking on the most insignificant occasion. As an example, he said, a strike recently occurred on a New York building for the following trifling reason. A plumber wanted to pass some pipes through a concrete floor, and for this purpose he cut holes four or five inches in diameter through the floor. Each plumber must have his apprentice, and while the holes were being cut the apprentice looked on. The concretors contested that the plumber had no right to cut holes in concrete work, claiming that this came within their field of operation. But the cement finishers objected to either concretors or plumbers doing this work, and the discussion of this point caused a strike. After considerable wrangling it was determined that the cement finishers had nothing to do with the cutting of the holes, which ought to be done jointly by the plumber and the concretor; and finally that the plumber with his helper should lay out the position, while the concretor with his helper should cut the holes. Thus four men were required to cut a hole four or five inches in diameter in a concrete floor. Many similar instances, Mr. Kahn said, could be mentioned, showing the need of reducing manual labour to the utmost limit, in order to escape, as far as possible, the capricious action of workmen and unions.

Johnson's House in Gough Square.

No doubt more definite information will shortly be forthcoming as to the steps that are being taken for the preservation of 17, Gough Square Fleet Street, which was for ten years the home of Dr. Johnson. It was here that he wrote his "Ramblers," and compiled a considerable portion of his dictionary; and it was in this house that his wife, his "beloved Tetty," died in the night. It was from this house that he wrote to his neighbour, Samuel Richardson, printer and novelist, the pathetic and not undignified letter: "Gough Square, 16th March, 1756.—Sir,—I am obliged to entreat your assistance. I am now under arrest for £5 18s. Mr. Straham, from whom I should have received the necessary help in this case, is not at home, and I am afraid of not finding Mr. Millar. If you will be so good as to send me the sum, I will very gratefully repay you and add it to all former obligations.—I am, sir, your most obedient and humble servant, Sam Johnson." The document is endorsed, "Sent six guineas.—Witness, William Richardson," so that evidently the author of "Pamela," while willing to do Johnson a neighbourly turn, had an eye to contingencies. Of the several houses off Fleet Street in which Johnson lived, the dwelling in Gough Square is said to be the only one that remains unaltered. That fact constitutes its only architectural interest; for it is an exceedingly plain brick building. Its window openings, and its not unhandsome doorway, however, are racy of their period, and the old house might be worth preserving on that account alone, even if it had not for a decade sheltered the veritable *genius loci* of Fleet Street. All success, therefore, to Mr. Clement Shorter's pious efforts to save it from the hands of the housebreakers.

Dewsbury's Moot Hall.

The Moot Hall at Dewsbury, which was built towards the close of the thirteenth century, had been turned to base uses. It had been successively a malt-kiln, a wool warehouse, a rag store, and a bottled beer store. A year ago, only the east wall was visible, the remainder being obscured by sheds that had been put round it. Canon Harvey thought that the old building was worth rescuing, and had but little difficulty in persuading some of his friends to help in the restoration. The building is rectangular in form, comprising a basement and a large upper room, where there are pointed windows, and a huge fireplace. The restoration, which has been done by Mr. A. H. Kirk, architect, has cost about £850. Sir George Armytage performed the opening ceremony. Mr. S. J. Chadwick, the antiquary, said, at the opening ceremony after the restoration, that the Moot Hall was the hall of the rectory or manor house, and was used for the transaction of the public business of the time, and might be termed the first town hall.

Thames Bridge Schemes.

In another part of the present issue, there is a reference to the attitude of the London County Council on the St. Paul's Bridge question. What the Corporation proposes is an emasculated scheme, which, it is to be hoped, will not find favour at the meeting at which the subject is to come up for discussion to-morrow. It appears from a report of the Bridge House Estates Committee, which will then be considered, that, owing to the action of the London County Council, the Corporation has abandoned the original scheme of providing a northern approach of a width of 105ft., which would naturally have involved the acquisition of much valuable property in St. Paul's Churchyard. Under the new scheme the northern approach ends on the south side of Cannon Street. The committee state that they have been approached by a deputation from the Royal Institute of British Architects, and asked on æsthetic and architectural reasons to consider "the advisability of adopting the line for the suggested new bridge to come out opposite the south door of the central transept of St. Paul's Cathedral," and to obtain "the best architectural advice" in connection with the scheme. In this connection the committee remark that "the line suggested is no doubt highly desirable, but from a traffic point of view the route is inferior to that proposed, . . . whilst the additional cost involved (about £1,000,000 on the estimate already submitted) renders its serious consideration prohibitive. On the question of the architectural treatment of the bridge, we are quite as desirous as the Royal Institute of British Architects that this should be of a character creditable to the City of London, and the importance of the undertaking. Until, however, your Honourable Court has decided that Parliamentary sanction shall be sought for the execution of the works, we have deemed it desirable to take no further action in the matter." It is disheartening to find that the intervention of the R.I.B.A. is thus cavalierly dismissed. It is perfectly evident that the Bridge House Estates Committee has not given this aspect of the matter sufficient attention; and the curt refusal to do even so little as discuss the question from any but the purely utilitarian side is, we fear, only too characteristic. From these discontents it is pleasant to turn to a scheme for the construction of a fine northern approach to London Bridge that has been suggested by Mr. W. D. Caröe, M.A., F.S.A., the architect to the Ecclesiastical Commissioners. The idea is to widen the roadway by placing the footways under arcades. The Monument and the tower of St. Magnus are to be opened out, as seen both from King William Street and from Gracechurch Street; and features are made of stairways leading down to Upper Thames Street. Fishmongers' Hall is to be heightened by an attic, and a symmetrical building is suggested on the east side of the bridge. The effect would be, it is urged, to transform the whole area from the lowest type of trading premises to the highest level of fine business structures.

ARCHITECTURE IN THE SCHOOLS.

By J L. BALL, Director of the Birmingham Municipal School of Architecture.

The following extracts from a paper by Mr. J. L. Ball, Director of the Birmingham Municipal School of Architecture, are recalled as an appropriate introduction to the architectural studies which are at this season being everywhere renewed. Mr Ball's reflections upon the subject appear to us of particular value as affording a philosophical groundwork of endeavour.

[The academic view of architecture has its qualities as well as its defects. For one thing, it admits of greater detachment of thought than is presumably possible to the average practitioner, who may see the subject as steadily, but, from lack of opportunity, not quite so completely, as the educational expert, who obviously enjoys larger facilities for looking all round the subject, and may in course of time develop a special faculty for generalising upon it.

At the moment when, in its due season, professors and pupils are "resuming their studies," it is interesting to recall some of the observations in this exceptionally thoughtful paper by Mr. J. L. Ball.]

Architectonic Influences.

Mr. Ball claims that the force of dominant architectural conceptions has been profoundly felt in the whole range of the plastic arts, from the least considerable craft up to the greatest sculpture and painting. Nay, he said, even poetry, an art that is entirely intellectual, which addresses even its imagery to the senses through the intellect, has been affected by architectonic influences. The "Divine Comedy" and "Paradise Lost" may be mentioned as instances which are familiar to everybody. On the other hand, in periods when architecture is poor or weak, or in countries where it hardly exists, the other arts seem not infrequently to betray a want of energy, an infirmity of purpose, a contentment with trivialities, an insensibility to the higher elements of grandeur and sublimity. The art of Japan furnishes a striking illustration of this. Exquisite and admirable as that art undoubtedly is, we are nevertheless conscious that some essential element is wanting to it, something which we are accustomed to find in European art even of a much inferior grade. The reason probably is that Japan has no architecture of any importance. The qualities which we miss in Japanese art are precisely those which result from a strong architectonic sentiment, from the pressure of a dominant architectural idea. The truth would appear to be that architectural conceptions when widely diffused tend to create an imaginative *condition*, or mood, as subtle and indefinable as an atmosphere, which if not strictly necessary to the other arts is at least very favourable to their healthy and vigorous growth. .Some brief reflections therefore on the method of teaching this art may be acceptable even to those who are not actually engaged in its pursuit.

The Master and Pupil System.

It is no secret that all who are interested in architecture as a fine art have long felt a grave anxiety about the education of architects. The old relation of master and pupil, admirable in theory, and successful though under favourable circumstances, has broken down under the changed conditions of modern life. There is no need to enlarge upon this fact; it is generally recognised that the present state of things is most unsatisfactory, and tends to become worse and worse. The Royal Institute Board of Education proposes therefore to substitute for the old premiated pupilage, at its best a somewhat casual and haphazard arrangement, a systematic course of training in an architectural School. This will occupy the whole time of the student for a term of two years. Only after this preliminary course of training will he enter upon his duties in an architect's office, still devoting part of his time, but a part only, to work in the School. Two or perhaps three more years will be passed in this manner. Thus, after a full course of four or five years spent in a comprehensive and well-regulated course of study the student may expect with some confidence to be in a fair way of attaining a real mastery of his art. Such in very sketchy outline is the method of teaching architecture which is now advocated in place of articled pupilage.

Schools of Architecture.

Schools of architecture for teaching purposes have been in full operation for some years in London, and in Liverpool, with excellent results. Edinburgh has more recently followed the example. Our own city, thanks to the munificent and far-sighted policy of the University, now possesses a well-equipped day school of architecture. Architecture indeed has always been included among the subjects taught in the School of Art. Evening classes have been established in order to supplement in some degree the inadequacy of office teaching. But attendance at these classes has been voluntary, and only the most eager and enthusiastic student can derive profit from work done after the duties of the day. The most serious defect of all such schemes is the want of system, and of a properly arranged course of study. It is painful to reflect upon the mental confusion, the dissipated energy, which must inevitably result from casual efforts. There is very good reason to believe that the action of the School of Art Committee in instituting a real day school of architecture will prove as wise as it is generous, and that the influence of the new school will be felt in time throughout the whole range of those craft arts for which the Birmingham School of Art is already becoming famous. This is not the place to enumerate all the advantages which the new system offers in comparison with the old, but it may be permissible to mention four of the most important.

Advantages of the New System.

First: The course of study in the school is systematic, co-ordinated, and consecutive; instead of being, even at the best, casual, haphazard, and unrelated. The attention of the student is directed from the first to the mastery of homogeneous principles, to some one of which he can refer every fact as it comes before him. Under the old methods he was often unable to distinguish any clearly defined principle among the formidable mass of heterogeneous facts by which he was encumbered. How great a difference is made to the mental attitude of a student by the orderly and scientific presentation of a subject is too well known and too generally recognised to need any comment.

Secondly: A preliminary course of study interposes a valuable novitiate between the vague early fancies of youth and the final choice of architecture as the work of a life. It is a period of probation, a test of special aptitude. At a critical epoch it affords time for reflection, for self-examination, perhaps for the revision of preconceived or hastily adopted notions. The minds of young people at the age of sixteen, or even of seventeen, are often singularly immature. The considerations which determine their choice of a career would no doubt seem ludicrous to us if the results were not sometimes so deplorable. Under the old system, when the articles had been signed and the premium paid, it was seldom possible to turn back. The die was cast. The decision was made. However unsuitable the choice, it was irrevocable. However distasteful the work proved to be, it must be persevered with. Even if after the expiry of his articles the student determined to devote himself to some other occupation the partial and ill-assorted knowledge which he had managed to pick up was little likely to be of any service to him. Four or five years of his life had, in fact, been wasted. Under the new system, however, if a young man should find that he has made a mistake no great harm has been done. If he should discover on a closer acquaintance that architecture is not quite what he had imagined it to be, that his work is irksome, and that his tastes and aptitudes really lead him in some other direction—to building, perhaps, or to one of the craft arts, there is no serious difficulty in making the change. His time will not have been wasted. His studies and the knowledge which he has acquired will probably be of the utmost value to him. Indeed, it is hoped that the time will come when many of those who intend to become builders, or to follow some other branch of craft art, will perceive the value of a preliminary training in architecture.

The third advantage which the new system offers over the old is the practical study of the more important building crafts. Classes in carpentry and masonry in which the student with his own hands frames the timber, and chisels the stone and mixes the mortar, will give him a familiarity, an intimacy, with building which can never be gained from the study of text-books. It is not to be expected, of course, that he will attain any real degree of technical skill in the building crafts, each of which demands a separate apprenticeship. But he will have learnt something about them. He will understand something of their difficulties. He will be able to appreciate fine work when he sees it. Above all, he will learn what the office-trained pupil can never learn, that architecture is very largely an affair of materials, of craftsmanship, of traditional and familiar habitudes; that it has to do with mass and solidity, and weight. He will avoid the vulgar error of looking at his art as an exercise in drawing lines on paper. He will form the just and necessary habit of thinking of masses of material and not of mere draughtsmanship. To some of us this first effort to regain for architecture its lost intimacy with technical building may well seem of most hopeful augury.

Art and Business.

And, fourthly, it is by no means the least important advantage of the School course that it teaches architecture solely as an art, and not as a business. The object of the School of Art Committee is not to educate business men, but to foster a great art. The business of an architect can be learnt very easily in an architect's office. When the time comes for the student to enter an office he will be afforded ample opportunity of making himself familiar with the business. Meanwhile let architecture be presented to his fresh and impressionable mind as a grave and majestic art, free from all sordid associations, free even from the inevitable responsibilities of practice. First impressions are notoriously vivid and permanent. The influence on character of high and esthusiastic ideas cannot be overestimated.

Such, then, are some of the more striking advantages which the new method of teaching architecture presents. It will be admitted that they are important advantages, and that we may look forward with some confidence to the future of an art which has suffered in the past by having been left to casual instruction. Let us next consider very briefly the course of study which is to be carried on in the school. What methods shall we employ for the teaching of architecture?

In beginning the study of architecture the student is apt to be bewildered by a multiplicity of details all of which claim his attention at the same moment. The whole looks a disordered tangle through which he can perceive no distinct path. He is plunged into the middle of his subject before he quite knows what it means. Not only are there many diverse things to be learnt, but all are so closely related that it seems impossible to learn one part without some knowledge of the others. This is no doubt true of most arts. But it is specially and peculiarly true of architecture, an art which is half a science, which is mathematics on the one side, and on the other side an expression of ideas by abstract form, which is based on the common and secular practicalities of life, and yet soars far above these to the region of pure and ideal are, the spire of Strassburg, the dome of the Holy Wisdom. It is not surprising therefore that the novice in architecture should experience a certain mental confusion, and the first necessity is to provide him with some kind of map, or outline, of his studies. These may be conveniently divided into three groups, closely related and concurrent, each important and necessary, though, perhaps, not equally important.

Nature and Uses of Materials.

First: The study of the nature and proper uses of the materials of building.

Second: The study of the various methods of construction, and especially of the dynamic *principles* of structure.

Third: Design, which, at least in its elementary stages, may be defined as the application of materials and structure to the noblest use.

First, then, of materials. It surely needs, no elaborate argument to show that an architect ought to possess a very close, intimate, and comprehensive knowledge of the materials which he is to use in his buildings. A doctor who should be ignorant of the nature of the drugs with which he compounds his pills and draughts, an engineer who should have no first-hand knowledge of the metals he proposes for his engines, would be proper objects of ridicule. A thorough knowledge of his materials is just as necessary for the architect. In every art it is essential first of all to master the material, the vehicle, in which that art finds expression. There is no such thing as abstract design. Design is always an expression in some material. All the arts, sculpture, painting, the minor crafts, are various expressions of intellectual energy through the medium of materials. But to no art is a knowledge of materials more necessary than to architecture. It is the art of using the materials of building to the best advantage, of making noble and enduring works of those materials. How shall the architect undertake the direction of building, how shall he discharge his duty to his patrons, nay, how shall he even design, without a precise knowledge of materials? It is with materials, the commonplace materials of building, that the architect has to mould forms of impressive beauty. Even so the poet, master of words, and sensitive to their faintest, their most recondite associations, weaves out of the common language of the market-place and of the fireside his "mystic unfathomable song."

Architectural Colour.

Again, all materials are not equally good, that is, are not equally suitable to the architectural purpose. Goodness of material, resistance to pressure, resistance to decay, convenience, and the like qualities, fulfil the needs of good building, of good engineering. But for architecture there is required in addition to these qualities an architectural fitness. Of two materials equally durable one will be better fitted than the other for the purpose of purely architectural expression. We may say in general terms that the important quality of colour in architecture is dependent upon the choice of materials. It is necessary perhaps to discriminate here between two different methods of obtaining colour in architecture. Buildings may be coloured by handing them over to the painter, to the glass painter, to the artist in mosaic. The result is not, strictly speaking, architectural colour. It belongs to other arts. That only is true architectural colour which is the result of the architectural use of materials chosen for the special purpose.

Methods and Dynamics of Construction.

Let us pass on to the second group of studies necessary in the teaching of architecture, namely, methods of construction and the dynamic principles of structure. That an architect must possess a very thorough knowledge of the way in which buildings are constructed is a truth so obvious as to amount to a truism. Unfortunately like many other obvious truths it is not always sufficiently recognised in practice. Architecture is a constructional art. It is structure expressed, idealised, raised to the level of art. The exhibition, the emphasis of noble structure is always pleasing in architecture as it is in representations of animals and plants. The vulgar conception of architecture as a veneer of ornament unrelated to the real facts of construction is an ignoble error. Neither is architecture any conceivable mixture of construction and ornament regarded as separate things. Finely realised and finely expressed structure is identical with architecture. Design in architecture is an intense sensibility to the dynamic principles of structure. All really great and expressive architecture imposes on us a sense of nervous and vital strength, of power self-contained, reposeful, and accurately proportioned to the counteracting forces. Indeed it may be said without much exaggeration that the expression of power and energy by means of structure is the peculiar glory of architecture. Certainly no other art can exhibit on the same scale the action and counter-action of gigantic forces; such as we see for example in the great French cathedrals.

As to Design.

Thirdly, of design. The third branch into which the general teaching of architecture may be divided is for many reasons the most important.

The reason required for building is the Practical Reason, and the reason required for architecture is the Imaginative Reason. We are not, of course, to regard the names given to various forms of mental energy as indicating different powers, but different exercises of the same power. The Practical Reason is reason under one mode or attribute, and the Imaginative Reason is reason under another mode or attribute. When we compare the action of the Practical Reason with the action of the Imaginative Reason we are at once reminded of Kant's celebrated distinction between analytic and synthetic judgments. The action of the Practical Reason is analytic; of the Imaginative Reason the action is synthetic.

It is by the Imaginative Reason then that building is transfigured into architecture; the Imaginative Reason, using materials and structure not for themselves alone but to express ideas. Architecture, like every art, is a distinct form of intellectual energy or force. In the great periods of architecture we see the Imaginative Reason taking up the prosaic details of building, the trivial furnitures of life, and transforming them into the scenery of a fairy tale. The mediæval architects, for example, seized upon this or that necessity of practical building, and in a mood of half-melancholy, half-playful exaggeration swept it instantly out of the region of the commonplace into the land of romance. Great architecture is not a nicely calculated adaptation of means to economic ends. It is essentially the outcome of a state of mind of an exalted or enthusiastic temper.

It would seem to follow from this that architectural design cannot be taught. No art, it may be said, can be taught as geometry or the way of building a wall can be taught. What is needed for it is a certain mood of exaltation, a certain mental attitude, which is wholly subjective, and which the student must for the most part cultivate for himself. This is no doubt quite true. But if architecture cannot be directly taught it can be taught indirectly, by the influence of example. The divine spark can be communicated in this way only, by the contagion of noble examples. The student may indeed do much for himself. He may fill his mind with graceful and elevating images. He may make himself familiar with all that is best in Literature and Art.

The Study of Examples.

There is no other way. The systematic study of all ancient and modern schools is the essential foundation for the teaching of architecture. The future must grow out of the past. But if the attempt should be made to substitute some *a priori* method for the historical, if the student should be expected to evolve a new architecture from the planing of boards or the chipping of stones, a vulgar and prosaic utilitarianism will be the issue.

The study of ancient architecture may perhaps seem a vast subject, extending as it does over some fifty centuries. In reality it is not so vast as it appears. The art has never been universally practised; almost all the really important architecture of the world is to be found in Europe and in those parts of Asia and Africa which are closely contiguous to Europe. The nominal boundaries of the Roman Empire would very nearly comprehend it. Yet, even so, what a magnificent heritage it is! Surely it is our duty and our privilege to enter into it and to possess it. Some people talk as though a knowledge of ancient architecture were a thing to be deplored. They profess to regret a golden age of careless ignorance when men knew and practised but one traditional way of architecture. Whether we regret it or not, the old traditional way has gone for ever. Under modern conditions no architect who is ignorant of the works of past ages can hope to excel. Nor is it true that in ancient times architecture invariably followed one fixed traditional course. No greater mistake can be made. A very moderate acquaintance with architectural history affords ample evidence that there have been long periods when the art has been swayed by several independent and conflicting streams of influence. One example will suffice out of many, the example of Sicily. The architecture of Sicily during the middle ages was affected by Greek traditions, by Roman or Italian traditions, by Norman influence, by Byzantine influence, by Saracenic influence. It will not be contended surely that the result in this instance is unsatisfactory. Indeed so far is it from being universally true that the best architecture has resulted from following one unbroken line of tradition that the exact opposite would seem on the whole to be more probable. Is there not at least good reason to suspect that the finest schools of architecture have been the consequence of what may be termed cross-fertilisation, of new and strange forces breaking in upon the languid current of tradition?

CORRESPONDENCE.

King Edward Memorial, Liverpool.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I think it is only fair to Mr. Goscombe John to point out that in his scheme for placing the Liverpool memorial to the late King at the southern end of St. George's Hall, as far as the subsidiary staircases are concerned there is evidence that these were once actually erected, but one may presume removed on more mature consideration. A number of schemes exist for the base of the building, and the plateau round it, showing that its present state was not reached by Cockerell save after much thought and labour. There is some consolation indeed in finding that the works of the great masters did not always spring from their heads complete at every point, but, like our own, was sometimes the result of worry and tribulation.

C. H. REILLY.

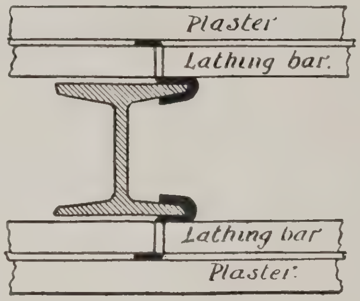
Sound-proofing Partitions and Floors.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Your correspondent's experience, as related in your issue for September 14, p. 267, is against what has always been considered the best way to prevent sound from passing through partitions, viz., by providing as large an air-space as can be obtained—through which sound will not readily pass—and in the case of floors, suspending the ceilings clear of concrete, floor-beams, and joists.

Possibly the steel lathing and plastering mortar are in direct contact with the angle iron partition standards, and this may cause the passage of sound.

In a trial made lately in a mansion, three kinds of partitions were constructed as an experiment. No. 1 was solid concrete 3ins. thick, No. 2 steel I standards 3ft. apart, filled in solid between with concrete, and lathed on both sides on the concrete, and No. 3 steel I standards with iron lathing bars fixed thereto by hooks, but kept quite clear of same, and expanded lathing wired to the bars and plastered with ordinary lime and hair mortar. No. 1 was a perfect sound conductor. No. 2, very little better, and No. 3 transmitted sound so slight as to be unobjectionable under any circumstances, ordinary conversation, and water poured into vessels, not being heard at all.



Suspended ceilings, with the plastering kept an inch clear of the concrete or steel joists of concrete floors, are practically sound-proof in an ordinary way. I have never known one to be otherwise, except in a case where there were revolving shutters to the windows through which, apparently, sound made its way. Whether a suspended ceiling to wood floor joists will prevent the passage of sound or not, I am unable to say; but it should do. Wood floor joists convey sound very readily from room to room, when in unbroken lengths; so do most walls. The sound from small overhead rooms is heard much plainer in rooms beneath than from larger ones, and travels through concrete much clearer before it has parted with its water used in making. Messrs. A. J. Main and Co., of 31, Budge Row, E.C., have built a small testing place as an experiment at Loughborough Junction Station, in a similar way to No. 3, and this is said to be practically sound proof. Your correspondent might see this, and judge for himself.

THOMAS POTTER.

LEGAL.

An Architect's Property in His Plans.

The conclusion of a legal action of much interest to architects was recently heard at the Watford County Court. The plaintiff was Mr. Harold Kennard, architect, of 2, Verulam Buildings, Gray's Inn, W.C., and he sued the defendant, Mr. James Rodwell, builder, of Watford, for payment for the use of his plans, a house having been built from them at Bushey, Herts. Mr. Costello, barrister, appeared for the plaintiff, and the defendant was represented by Mr. C. E. Dyer, barrister. This case was commenced at the May sitting of the Court, and adjourned for the production of material evidence. At the first hearing the plaintiff said that he made a speciality of domestic architecture. In 1908 defendant called at his office with reference to a house he was erecting at Bushey. Defendant noticed some plans for a house, and said that he would like a copy, as he would be likely to find a customer. He allowed defendant to have a copy of the plans. Subsequently he saw a house at Bushey, which had been erected from his plans, with one exception. He made out an account for £24, which he considered a fair charge for the use of the plans. The house at Bushey could not have been built without reference to his plans. He did not suggest to Mr. Rodwell that he should have plans to submit to building owners.—A Watford architect stated in evidence that the plan was handed to him by Mr. E. H. Cuthbertson, of Bushey, with instructions to proceed with the necessary drawings for the builder to work upon. The case was then adjourned for the attendance of Mr. E. H. Cuthbertson.—At the hearing after the adjournment, it was stated that Mr. Cuthbertson was in America, and the case was proceeded with. —Defendant gave evidence to the effect that plaintiff lent him plans for the purpose of placing them before prospective clients. He showed the plans to Mr. Cuthbertson, but nothing came of it. He did not mention the plaintiff's name to Mr. Cuthbertson with reference to the plans.—His Honour, in summing up, said he had come to the conclusion that the plaintiff was entitled to claim his verdict. The plaintiff had a property which to him was valuable—the design for a house. The value of that design was largely in proportion to its originality. It might not be of much importance to him whether it was seen by a large number of persons or not, if it was a design of artistic character and possessing artistic merit. Under the circumstances, it would be extremely difficult to apply to Mr. Cuthbertson to pay Mr. Kennard for plans which Mr. Cuthbertson did not know Mr. Kennard had any interest in. Mr. Rodwell's action was probably an error of judgment, and he still remained silent when he got the plans back from Mr. Cuthbertson's architect, slightly altered. In this matter he left plaintiff absolutely in the dark. The house erected presented all the features of plaintiff's plan, and he was asked to say that there was an expressed or implied contract on the part of defendant to pay for these plans. The fact that defendant meant to help plaintiff by introducing his plans to prospective clients would not prevent defendant from using the plans. Mr. Cuthbertson did adopt this plan, and chose another architect. Mr. Rodwell placed the plans before Mr. Cuthbertson as desirable plans, and permitted them to remain in his custody. He concurred with the evidence of the plaintiff in the case, that there was an expressed contract on the part of Mr. Rodwell to pay. His Honour then gave judgment for the plaintiff for the sum of £12 and costs.

Workmen's Compensation Case.

The case of "Collins v. the Salvation Army," heard in Westminster County Court recently, was a claim under the Workmen's Compensation Act by a man named Collins, who was employed in altering premises at Westminster to fit them for a shelter for men. Collins met with an accident which interfered with the sight of his left eye. It was urged that the applicant was not a workman within the meaning of the Act. After the accident he had been dealt with generously, but the Salvation Army carried on no building work except for themselves, and this work was no part of their trade or business. Various trades were carried on, but no trade was conducted at this shelter, and the work upon which the applicant was engaged was no part of the trade or business of the respondents. The applicant was getting his living by whistling in the streets when he was given casual employment, and the accident had not incapacitated him from getting a living. Judge Woodfall awarded the applicant 14s. 7d. a week.

ITALIAN SCAFFOLDING.

BY A. G. H. THATCHER.

Third Article.

(*Concluded from page 201, No. 812.*)

The minor details of plant also possess interest. Painters' boats are used, but at times are fitted with somewhat complicated arrangements. For instance, in one case a slide was provided at each end of the platform so that it could be extended with reasonbale safety. (See Fig. 25, which is a sketch of a boat seen in Pisa.) The top carrying bar is also framed to carry a pulley wheel for hoisting purposes. The method does not seem to be any improvement on our practice; in fact, the contrary might easily be urged. Ladders are somewhat wider than is usual with us but are otherwise built the same. Considerable care is taken in their fixing. On the Vatican walls in Rome a ladder was seen in use which had a unique arrangement for staying it in the middle of its height. Built as a light framework (Fig. 26) the sides could slide one in the other so that by its extension or contraction it would hold the ladder stiff from the wall with easy adjustment.

Putlogs are rather substantial, and this in view of the fact that they are laid some distance apart is very necessary. Besides being fixed in the wall, the outer end is tied to the ledger with galvanised iron wire.

Painters' trestles approach more to the French type than to the English. Fig. 27 is a sketch of one seen in Pisa. The uprights rest unfixed in the iron clips. This allows of their easy removal and longer or shorter lengths being used as required with the same base.

The use of machinery is a subject almost requiring an article of its own. Briefly speaking, very little power is used. On one building in Rome a transporter was seen fixed which was on the same principle as those used in English warehouses; that is to say, a steel horizontal jib was fixed through a window opening. On this a carrier was placed so that after the material was lifted to the window opening it ran into the building and was then moved where required. A type of the "jenny" was noticed in use in several places. A particularly strong method of scaffolding was erected in each case to carry it. Figs. 28 and 29 show a part elevation and section of it. It will be noticed from the section that the standards to carry the rails are independent of the other scaffolding, except so far as they are strongly bound thereto by hoop iron bands.

In excavations the timbers are connected by the wooden ties and cleats in the same way as some of the scaffolding. (See Fig. 30, which is a detail taken from an excavation in Rome.) The more ordinary method of lifting material is by an ordinary drum winch, but turned by capstan bars. (See Fig. 31.) This method does not conduce to speed in working. But astonishment is needless; work in the southern climes can rarely be considered a display of energy. True the power of the sun was terrific, but the pretence of work under the shields showed a complete recognition of it. The building appliances, tools, etc., vary from the English considerably. Fig. 32 is a sketch made of a few. The small-bladed shovel, with a 6ft. handle to save back bending, the wooden mortar bucket which gives the impression of being a superior butter tub, the iron hoop crate to carry not more than 200 bricks, by their limited carrying capacity, tend to ease in working. This is all in accord with the southern temperament, and, considering the heat, small blame to them!

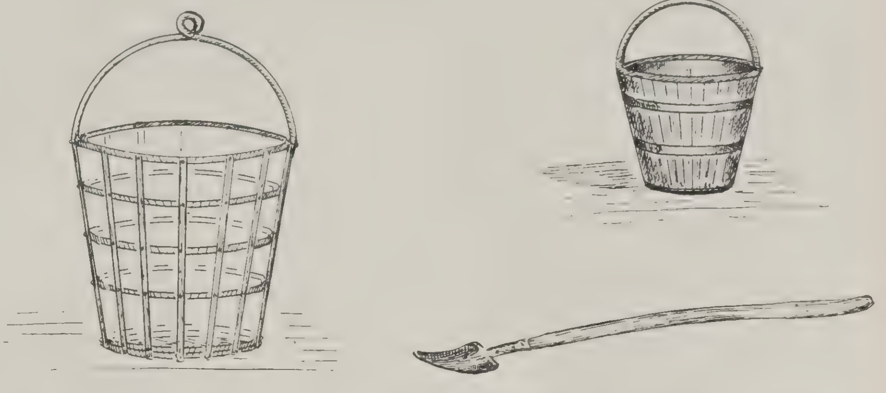


Fig. 32.

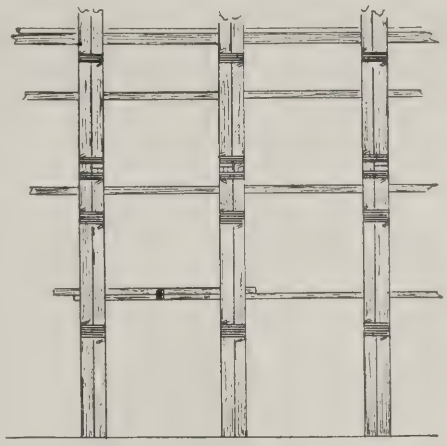


Fig. 28.

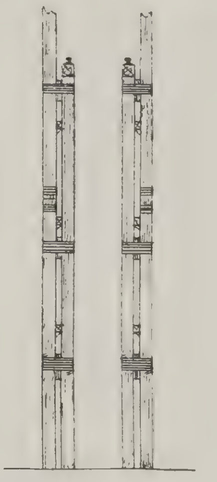


Fig. 29.

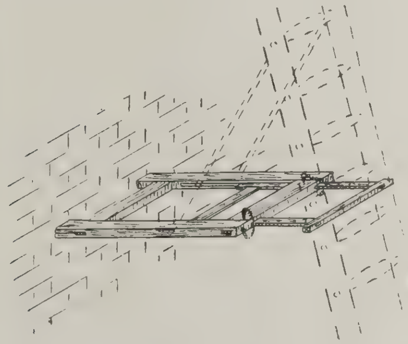


Fig. 26.

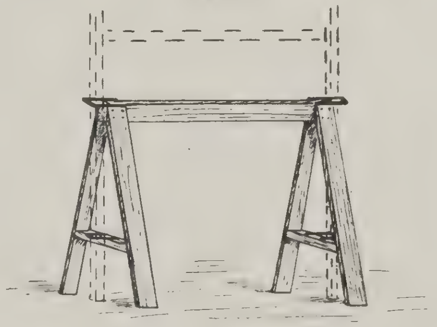


Fig. 27.

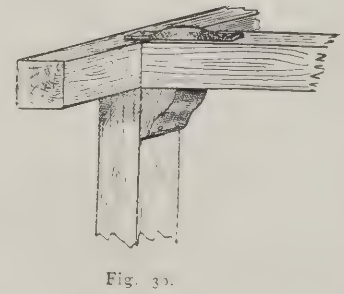


Fig. 30.

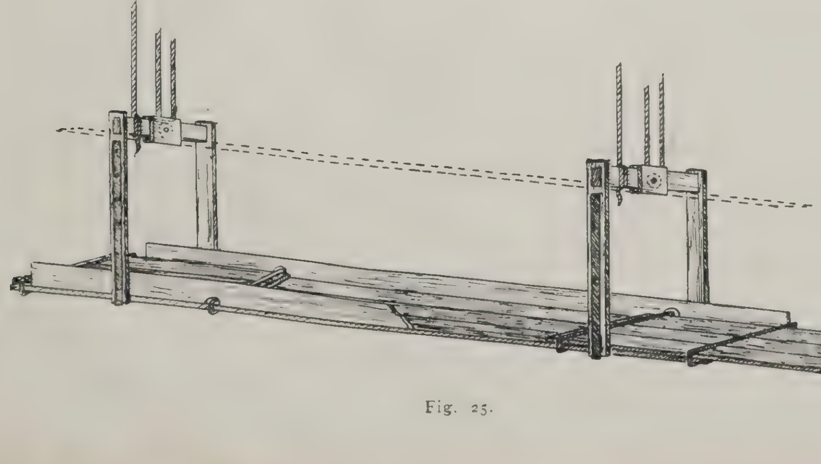


Fig. 25.

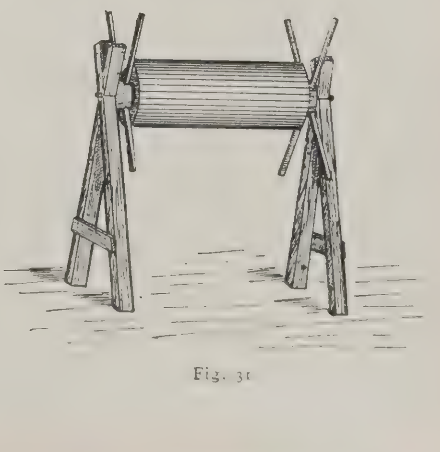
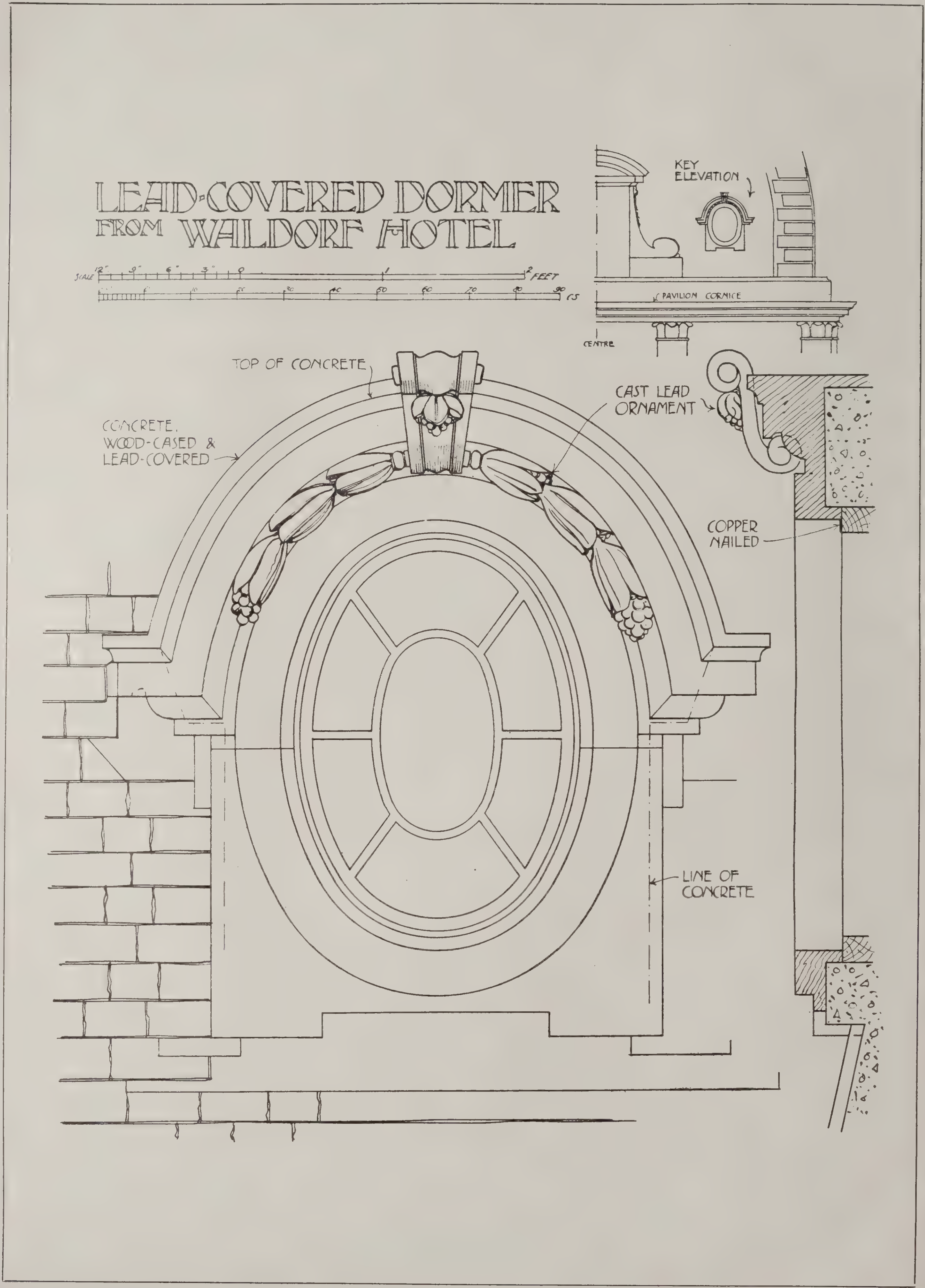
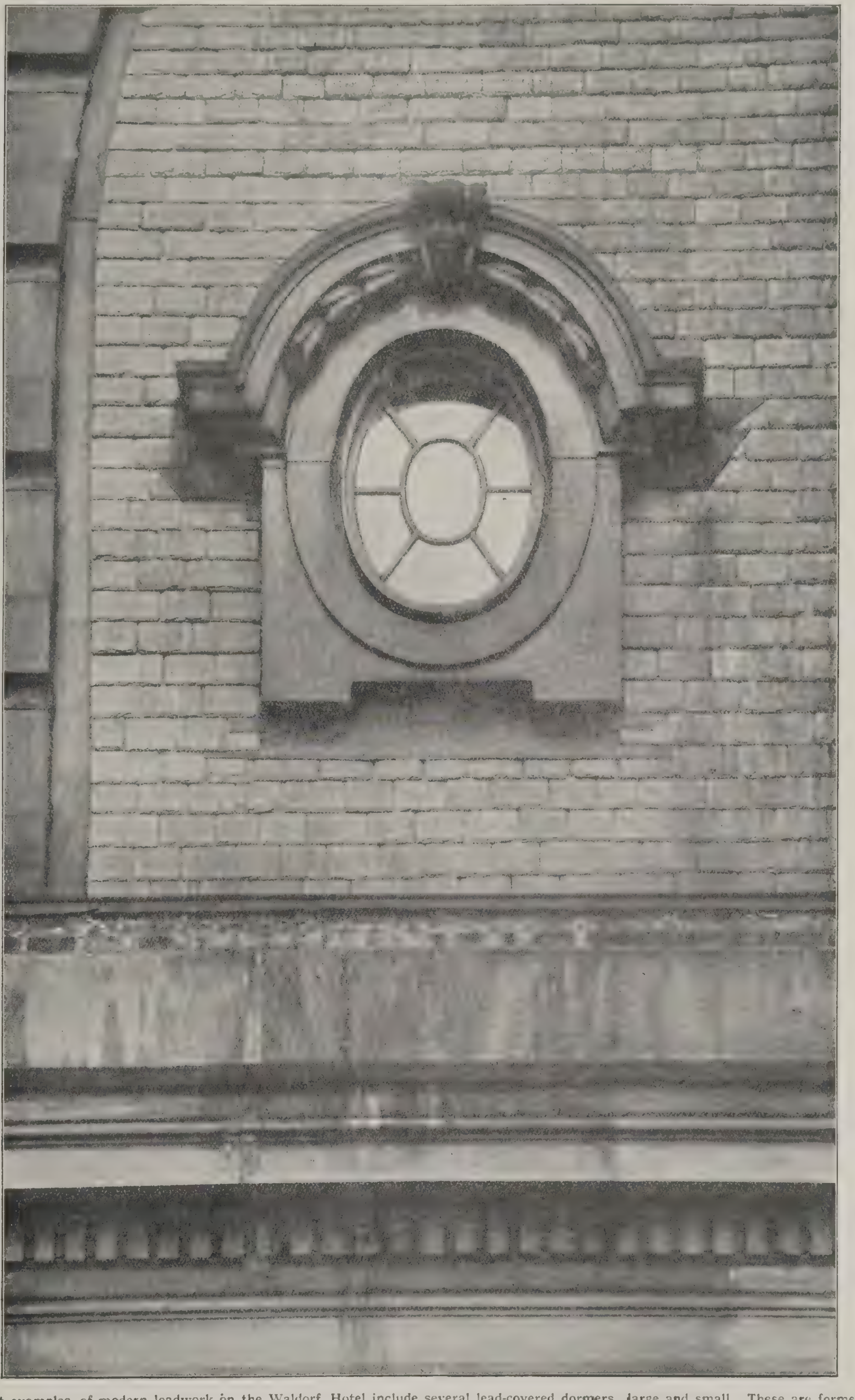


Fig. 31


LEAD-COVERED DORMER
FROM WALDORF HOTEL
SCALE 12" 9" 6" 3" 0 1 2 FEET
CS
KEY ELEVATION
PAVILION CORNICE
CENTRE
TOP OF CONCRETE
CONCRETE, WOOD-CASED & LEAD-COVERED
CAST LEAD ORNAMENT
COPPER NAILED
LINE OF CONCRETE



The excellent examples of modern leadwork on the Waldorf Hotel include several lead-covered dormers, large and small. These are formed with a concrete core, encased with wood, over which the lead is beaten. The enrichments are of cast lead.

LEAD-COVERED DORMER, WALDORF HOTEL, ALDWYCH LONDON A. MARSHALL MACKENZIE, A.R.S.A., F.R.I.B.A AND SON, ARCHITECTS.

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THE ST. PAUL'S BRIDGE SCHEME.

At last week's meeting of the London County Council, Lord Alexander Thynne, Chairman of the Improvements Committee, replying to Mr. J. D. Gilbert, stated that he did not think that any proposal had actually been made to the County Council by the City Corporation with regard to St. Paul's Bridge. The matter was informally discussed at a conference held in June with the Bridge House Estates Committee of the Corporation, when, after considerable discussion, it was agreed that the County Council should be recommended to contribute half of the cost of the widening of St. Paul's Churchyard between Cannon Street and Cheapside, and that the Council's contribution should not exceed £300,000. It was understood that the cost of the new bridge and of the approaches thereto would be borne by the Bridge House Estates, and would not be chargeable against the rates. He himself had had no official communication from the Corporation, nor, he believed, had the Council, as to the decision which had been come to with regard to the Council's offer of £300,000, but he gathered from certain newspapers that the Corporation had refused that offer in terms. When the official reply was received, his committee would bring the matter up in a report which would include the letter of the committee in which the offer was made. As to the rebuilding of Southwark Bridge, the Improvements Committee had not been in communication with the Corporation. The question was discussed at the conference in June, when the Chairman of the Highways Committee was asked, if it were a question between the building of a new bridge at St. Paul's and the widening of Southwark Bridge, which alternative he would prefer. With the assent of his colleagues, the Chairman of the Highways Committee said that of the two he would prefer the construction of a new bridge at St. Paul's. He understood, however, that a scheme for the widening of Southwark Bridge was still under consideration by the Corporation. The matter of approaching the Corporation with a view to the construction of tramways over Southwark Bridge was one for the Highways Committee.

BOOKS & PUBLICATIONS.

North Devon and West Somerset.

This little book is specially prepared as a pocket companion for the tourist in the delightful regions of Exmoor and North Devon. Attention is adequately directed to the ancient churches and natural beauties in which the district abounds; and the Dorset coast from Dunster to Porlock is described; while much interesting information is given concerning the castle and church of Minehead and Selworthy. Exmoor, with its cliff scenery; Lynton, Ilfracombe, and the rock-bound coast to Barnstaple; the Taw, Torrington and Bideford; Hartland and the Kingdom of Lundy all being sympathetically dealt with in due order.

The authors have entered into the true spirit of Charles Kingsley in compiling a guide book to that exquisite portion of Devon that is named "Kingsley's country," of which the lover of the beautiful and the ancient never tires. The book is neat and attractive in get-up, as well as handy in size, and contains many excellent illustrations from pen-and-ink sketches in the now well-known style of Mr. Gordon Home, as well as from photographs, and there is a sufficiency of historical information. Maps would have increased the usefulness of the book, but were perhaps omitted because of their rather blighting effect on a book of beauty.

North Devon with West Somerset: The coast, the moors, and the rivers from Dunster to Hartland Quay. By Beatrice and Gordon Home. The Homeland Association, Ltd., Chandos Chambers, Bedford Street, Strand, W.C. Price 2s. 6d. nett.

South Devon.

This is not an account of a specially architectural tour, although it may be useful to architects who are proposing a sketching holiday on any part of the coast described, as the author notices and describes, in a general manner, all the ancient buildings of interest which come into his track. In the main it is a book for the general reader, and a very interesting one, dealing with the history, asso ciations, and landscape of a peculiarly fine district of England, of the attractions of which many people who go abroad in search of scenery are probably not aware. It may serve a good purpose in inducing its readers to make the acquaintance of the country described; and in any case it is an interesting book to read.

It is not quite accurate to say that the present Eddystone lighthouse was built "after Smeaton's model"; at least, the phrase may convey a wrong impression. The present lighthouse is a considerably larger erection, and would probably have been built on its present lines had Smeaton's work never existed; and there is one important structural improvement. Smeaton's lighthouse had a cornice with a horizontal projection, and it is said that the upward jerk of the seas running up against this cornice in a gale could be felt through the whole structure. The present lighthouse has a concave cornice throwing the sea off again. It is greatly to the credit of Smeaton, however, that his lighthouse should have been finally taken down through no failure of its own, but only in consequence of the undermining by the sea of the portion of the rock on which it was built; so that here man's work resisted the sea better than Nature's.

In mentioning the remarkable small building called St. Catharine's chapel, at the top of the hill near Abbotsbury, the author does not mention what would be the first feature that would strike an architect, the fact that the roof is a pointed barrel vault on transverse ribs, with no cross-vaulting. As far as we know, there is not another example of this in England, of such late date (fifteenth century).

We share the author's regret in regard to the extent to which the buildings in the Weymouth streets are (according to his account) being persistently modernised. The process must result in destroying the little interest which Weymouth possesses.

The South Devon and Dorset Coast. By Sidney Heath. Illustrated. London: T. Fisher Unwin; 1910. 6s.

Some Technical Serials.

The special autumn number of "The Decorator," edited by Arthur Seymour Jennings, and published at 365, Birkbeck Chambers, comprises more than a hundred pages, and contains an extra quantity of excellent matter on subjects within its scope. We have also received for notice copies of the first numbers of the serial reissues of Cassell's "Wood Working," "Building Construction" (by Prof. Henry Adams), "House Decoration," and "Cabinet Work and Joinery." In each case the main appeal is to the craftsman and the technological student, who will appreciate the low price no less than the excellent printing.—"National Health" (22-4, Great Portland Street, London, W.), in its October issue, draws attention to a matter of "unsavoury jobs." Political interpretation of this phrase is expressly disclaimed, and its meaning is more clearly expressed in this extract from the "Liverpool Daily Post": "The other day I noticed some plumbers engaged in cleaning a sewage drain which had got blocked. Their work necessitated their wallowing in the overflow from the choked drain. As it was raining heavily at the time, matters were not improved. At the dinner hour they all boarded a passing tramcar and went home. I do not know whether they changed during their meal, but in the afternoon they were all back again by tramcar in the same clothes, which were such as our working people ordinarily wear." In France, "National Health" observes, no self-respecting labourer would be guilty of such ill-bred disregard for his fellow men, but all kinds of manual workers are accustomed to wear over their soiled clothes a washable smock that is at once picturesque and cleanly. If our working man is too proud to don a smock, then at least he might keep a decent suit of overalls to wear when journeying to and from his job.

PROPOSED NEW MUNICIPAL WORKS.

The Local Government Board has decided to hold (or has recently held, as indicated by the respective dates) inquiries into proposed expenditure by public bodies as follows:—Water Supply.—Geirionydd Rural District Council, £2,600 for Dolwyddelm, including 3,267,000 gallon reservoir (October 20); Sheerness Urban District Council, £1,061 (October 20); Bredbury Urban District Council, £3,442 (October 20); Hemsworth Rural District Council, £5,047 for various places (October 20). Sewerage, sewage disposal works, and plant.—Rotherham Rural District Council, £7,312 for Maltby (October 21); Ealing Borough Council, £4,800 (October 17); Romford Urban District Counci, £1,330 (October 18); Ynysaynhaiarn Urban District Council, £11,583 (October 19); Wallasey Urban District Council, £2,242 (October 18); Skipton Rural District Council, £2,910 for Farnhill and Kildwick (October 19). Street improvements, etc.—Ilford Urban District Council, £6,700 (October 20); Wallasey Urban District Council, £2,830 (October 18); Herne Bay Urban District Council, £4,685 (October 18); Grays Thurrock Urban District Council, £1,300 (October 19); Carlisle City Council, £3,500 (October 18); Conway Borough Council, £5,695 (October 21); Middlesbrough Borough Council, £5,096 (October 20). Various.—Caterham Urban District Council, £2,500 for public offices (October 19); Birmingham City Council, £12,139 for fire station, £2,350 for art gallery, and £143,250 for electric spply undertaking (October 18); Margate Borough Council, £22,000 for winter garden and pavilion (October 19); Gillingham Borough Council, £3,500 for electric lighting (October 21); Middlesbrough Borough Council, £2,375 for underground convenience (October 20); West Ham Borough Council, £5,150 for firemen's dwellings (October 21).

The contract for the new Post Office at Driffield has been let to Mr. Henry Naylor, of that town. The dismantling of the three old houses on the site has already begun.

SHEFFIELD BUILDING TRADES EXHIBITION.

This exhibition, which is being held from the 14th to the 22nd inst., in the Artillery Drill Hall, Sheffield, under the patronage of the Sheffield Master Builders' Association, the Sheffield Society of Architects and Surveyors, and the Yorkshire Federation of Building Trades Employers, was opened on Friday last by Alderman Senior, the Master Cutler.

At the opening ceremony Mr. A. J. Forsdike presided, and there were on the platform Mr. W. R. Thompson, Dewsbury (ex-president of the Yorkshire Building Trades Federation), Mr. W. G. England, Barnsley (president of the Yorkshire Federation), Messrs. W. C. Fenton, H. L. Patterson, W. Longden (President Sheffield Master Builders' Association), J. Biggin, J. D. Cook, T. Roper, G. E. Powell, T. Eshelby, W. W. Mears, C. Boot, A. T. Biggin, Thomas Smith, etc., with Messrs. G. and C. Stanley, the general manager and secretary of the exhibition.

There are eighty-six stands, and the following are among the exhibitors:—George Wright, Ltd., Burton Weir, Rotherham (fireplaces and kitchen ranges); J. Murphy, Sheffield (patent chimney-pot); Joseph Griggs and Co., Ltd., Loughborough (scaffold brackets, patent wall construction, flooring, joinery, etc.); Middleton Fireclay Works, Leeds (bricks, sanitary ware, majolica, etc.); Edward Leigh, Croydon (safety ladder bracket); Ferry Bridge Foundry Co., Ltd. (kitcheners, hot water circulators, etc.); John W. Wilson, Sheffield (mantels, stoves, and baths); the Patent Tip-up Bath Co., Birmingham; the Interoven Stoves Co., London (patent stoves); W. H. Micklethwait and Co., Ltd., Rotherham (ranges, baths, etc.); Geo. Washington, Dewsbury ("Ever-ready" syphon); T. A. Ashton, Sheffield (fire extinguishers); Messer and Thorpe, London (fire extinguishers); Woodside Brick Co., Ltd., Sheffield (red facing and stock bricks); Woollen and Co., Ltd., Sheffield (plate glass, facia signs, etc.); Walter Cooper, Manchester (chimney-pots, etc.); the Patent Rapid Scaffold Tile Co., Westminster; Leeds Fireclay Co., Ltd., Sheffield (earthenware sanitary and other specialities); Oates and Green, Ltd., Leeds (sanitary specialities); F. T. Walker, Sheffield (contractors' hut); Cakebread, Robey and Co., London (drain machinery, etc.); W. Monks, Sheffield (Vortex and Pyramid chimney-pots, and Monk Double socket and insertion joint); H. Coverdale, J.P., Sheffield (grate from an old Sheffield Mansion); Albert M. Wilkinson, Sheffield (lightning conductors and weather vanes); H. C. Slingsby, London (patent trucks, ladders, etc); Tutin and Co., Manchester (Salamander fireproof and soundproof brick partitions, roofing tiles, flooring); University of Sheffield Architectural Department (various models); Nostell Brick and Tile Works, Wakefield (glazed tiles, terra-cotta and faience ware); Pawson and Brailsford, Sheffield (drawing office materials and supplies); Frazzi Fireproof Construction, Ltd., Essex Wharf, Durward Street, Whitechapel, London, E.; Manchester, and Glasgow (fireproof floors, partitions, roofs, and buildings on the Frazzi system as used in work carried out for the War Office, Office of Works, H.M. Woods and Forests, Metropolitan Asylums Board, and most of the hospitals in London, as well as in various hospitals, sanatoria, warehouses, motor garages, etc., etc., built by the firm); Cookson and Co., Ltd., Newcastle (Crescent brand of white lead); Fredk. Jones and Co., Ltd., Burton-on-Trent, London, Manchester, etc. (Hercules fireproof partition blocks, fibrous plaster ceiling slabs, Pioneer slag wool); Contract and Works Supply Co., Sheffield (contractors' materials); Saxon Portland Cement Co., Ltd., Cambridge (exhibits showing processes of manufacture of cement from the raw material to the finished article); Sheffield Building Materials Co. (various building materials); H. Parry and Sons, Kirton Lindsey (lime and limestone); British Ceresit Waterproofing Co., Ltd., London (Ceresit insulating process); Tar-paving Co., Ltd., Frodingham (slag products, etc.); C. Jennings and Co., Bristol (joinery); Jenkinson, Marshall and Co., Sheffield (office supplies); Brooke, Bray and Sons, Sheffield (garden structures and ornaments); Carron Warehouse, Liverpool (high-class ranges, grates, baths, artistic iron work, etc.); John Gregory and Son, Ltd., Sheffield (bricks, earthenware, etc.); H. J. and C. Major, Ltd., Bridgwater (roofing tiles and various clay goods); Roper and Wreaks, Sheffield (gas and oil engines); J. Sagar and Co., Ltd.; Halifax (woodworking machinery); Orr's Zinc White, Ltd., Widnes (Zingessol and Zinc White); High Wincobank Brick Works, Sheffield (facing bricks); J. H. Heathman and Co., London, S.W. (ladders, steps, trestles scaffolds, fire escapes and extinguishing apparatus); Sheffield Corporation Electric Supply Department (various motors, radiators, utensils, and accessories); Holt and Willets, Cradley Heath (power friction hoist); Robert Roper, Son and Co., Ltd., Sheffield (blasting explosives, etc.); Patent Stone Dressing Tool Co., Ltd. (stone-dressing appliances); Medical Officer of Health's Department, Sheffield (model of open-air school, etc.); City Surveyor's Department, Sheffield (photos of model houses at Wincobank, and of sewage works).

The exhibition closes on Saturday next.

COMPETITIONS.

Harvey Grammar School, Folkestone.

The result of the above competition has been announced as follows:—1, Mr. E. Finn, Canterbury; 2, Mr. E. J. Shrewsbury, A.R.I.B.A., Maidenhead; 3, Messrs. Halliday and Paterson, Manchester. Sixty designs were sent in. The Assessor was Mr. Wilfred H. Robinson, architect to the Kent Education Committee.

East Anglian Institution for Blind and Deaf Children, Gorleston-on-Sea.

At a meeting of the governors of the East Anglian Institution for Blind and Deaf Children, held in Norwich on Monday, October 10th, the report of the assessor, Mr. H. P. Burke Downing, F.R.I.B.A., of 12, Little College Street, Westminster Abbey, upon the fifteen designs submitted by East Anglian architects in the competition for the erection of a school and homes at Gorleston-on-Sea, was received.

The assesor's award, which assigned the first place to number three in the competition, was unanimously adopted by the governors, and the envelopes containing the names of the architects being thereupon opened, number three proved to be Mr. John E. Burton, 57, London Street, Norwich. Mr. Burton was accordingly appointed the architect to carry out the work.

The designs placed second and third by the assessor proved to be the designs submitted by Messrs. John and Browne, Ipswich, and Messrs. Olley and Haward, Great Yarmouth, respectively.

New Municipal Buildings, Denbigh.

The result of the competition in which Denbigh Town Council offered three prizes of £75, £50, and £25, for the best plans of new municipal buildings, including a public hall to seat 2,000 persons, council chamber, magistrates' room, town hall, fire brigade rooms, markets and various offices, was briefly announced in our last week's issue. The following particulars may now be added: Thirty-two sets of plans were received. These were examined by Messrs. Leaming and Leaming, architects, Westminster, and the members of the Council. The buildings will cost from £10,000 to £15,000, and their erection will of course depend on the sanction of the Local Government Board being received. The buildings designed by Messrs. Porter and Elcock will be carried out in the local limestone, with dressings of York or other suitable stone, and the design is on the lines of the best Scottish Baronial work, which seemed in every way suitable to the historical antecedents of the ancient town of Denbigh, which has been the very centre of stirring episodes for many centuries. The large public hall, shown to seat 2,000, with a large stage, dressing-rooms, etc., will be carried out mainly in reinforced concrete, with large roomy galleries carried on cantilevers without any supporting columns to intercept the view of the audience. The judgment of the assessors when announced to the Council was unanimously confirmed after all the plans had been inspected by the members present.

LIST OF COMPETITIONS OPEN.

OCTOBER 31, ETC., ROMFORD GARDEN SUBURB. Particulars in our issue for October 12.

NOV. 5. JAN. 14, 1911. TREVOR SQUARE ESTATE, KNIGHTSBRIDGE. Laying out estate for erection of private houses of a rental value of £200 to £300 per annum. Application to Trevor Estate Office, 207, Knightsbridge, S.W., on or before November 5. Competition closes January 14, 1911.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—The directors of Garden Estates, Limited, 33, Henrietta Street, Covent Garden, W.C., invite competitive designs for a town plan in the parishes named. Terms and conditions obtainable from the company. Deposit, one guinea.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in our issue for October 12.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. Particulars in our issue for October 12.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12.

DEC. 14. DOUGLAS (ISLE OF MAN.—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

NO DATE. ARMAGH CHURCH HOUSE AND SYNOD HALL. Full information will be given by Rev. C. K. Irwin, B.D., Brantry Glebe, Dungannon, Co. Tyrone, Hon. Sec. to the committee.

COMING EVENTS.

Friday, October 14—Saturday, October 22.

Yorkshire Building, Sanitary, and Allied Trades Exhibition.—Artillery Drill Hall, Sheffield.

Thursday, October 20.

University College, London.—H. V. Lanchester, F.R.I.B.A., on "Town-planning: Possibilities of the Future." 6 p.m.

Friday, October 21.

Institution of Mechanical Engineers. Storey's Gate, Westminster.—Ordinary meeting. 8 p.m.

Thursday, October 27.

University College, London.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: Keeps and Fortified Manor Houses." 6 p.m.

THE
TOWN PLANNING CONFERENCE.
(SPECIAL SUPPLEMENT.)

Without question the Town Planning Conference held in London during the past week under the ægis of the Royal Institute of British Architects has been a great success. The meetings have been well attended and have provided fruitful discussion, and the exhibition of drawings and models at Burlington House has been of incalculable value in bringing together, for purposes of comparison, the diverse schemes of town planning at home and abroad.

The opening meeting was held on Monday, October 10th, at the Guildhall, when the inaugural address was delivered by the hon. president of the Conference, the Right. Hon. John Burns, M.P., President of the Local Government Board, whose speech was fully reported in our issue for last week.

The business meetings began on Tuesday morning in the larger of the new galleries which have been provided on the lower ground floor of the Institute's premises at No. 9, Conduit Street (the reconstruction of which galleries has been carried out very effectively under the direction of Mr. Henry T. Hare, F.R.I.B.A.). Professor Reginald Blomfield, A.R.A., occupied the chair. At this meeting the papers read, by Professor Gardner and Professor Haverfield, of Oxford, Dr. Ashby, Director of the British School at Rome, and Dr. A. E. Brickmann, of Aachen, were concerned with the cities of the past.

THE HELLENISTIC PERIOD.

By Professor Percy Gardner, LL.D., F.S.A.

(*Read Tuesday morning, October* 11.)

Professor Gardner dealt with the planning of cities in the Hellenistic age—the third and second centuries B.C. By the aid of lantern slides he explained what these ancient cities were like. In Greece itself they consisted of narrow winding streets bordered by poor houses, the important sites being occupied by temples of the gods, the senate house and the town hall, the agora (or market place), and the gymnasium. But on the Ionian coast of Asia Minor cities were more orderly. While the agora in the old cities of Hellas was merely an irregular open space where streets met, an Ionian agora was square, with porticoes round it, and lying in the heart of the city. Hence it was not surprising to learn that when, towards the end of the fifth century B.C., the Greeks seriously took up the matter of town planning, the architect they employed was an Ionian, Hippodamus of Miletus. Three great cities founded at this time were laid out by him—Piraeus, the port of Athens; Thurii, in Italy; and Rhodes. All these towns were planned with streets at right angles to one another, and the convenience of the inhabitants was the principal consideration. But it was the time of Alexander the Great and his immediate successors which was the great age of city founding. Within a century or so there sprang up, mostly in Asia, a number of cities destined to play a great part in history—Alexandria, Antioch, Seleucia on the Tigris, Pergamon, Laodicea, and many others as far east as Candahar. A few of these cities have become known to us of late through excavation. Permagon has been excavated by the German Archæological Institute, and a still more interesting site, that of Priene, has been excavated by Messrs. Wiegand and Schrader. Professor Gardner showed some slides of Priene which were astonishing. The plan was arranged with the market-place in the centre, while about it the whole town was cut up into square blocks of uniform size by straight streets which crossed one another at right angles and ran through the town from wall to wall: the lay-out suggesting a modern American city with its "gridiron" plan rather than one belonging to the centuries before Christ.

TOWN PLANNING IN THE ROMAN WORLD.

By Professor F. J. Haverfield, LL.D., F.S.A.

(*Read Tuesday morning, October* 11.)

Professor Haverfield, in dealing with "Town Planning in the Roman World," pointed also to the antiquity of rectangular planning, exhibiting a slide of an ancient Chinese City in Central Asia which was laid out in this manner. He showed that the same type of plan was followed by the Romans wherever they settled. Old Florence was one example, the city of Timgad, in Roman Africa, another, while Belgrade, in Servia, Trier-on-the-Mosel, in Germany, Cologne, and, in our own country, Silchester and Caerwent were further examples. Timgad, a city for the occupation of time-expired Roman soldiers and their wives, was laid out with the utmost regularity, having a forum in the centre, and rectangular streets dividing up the whole area of about 40 acres enclosed within the walls. The old plan of Trier-on-the-Mosel was uncovered in the course of drainage operations, and though both here and at Cologne it was difficult to trace the original Roman scheme completely, sufficient was discernible to establish the main lines. At Silchester the rectangularity was even more awkward to follow, but this place, it should be noted, was a Romanised British colony rather than a definite Roman town. Roman town planning was based essentially on starting all *de novo*, and its development proceeded irrespective of rights of property or any similar considerations. It was, too, on quite a small scale, the area included in a town being no more than 100 to 200 acres; so that, with these conditions, there were none of the problems which are so difficult to solve in cities of to-day. No industries had to be catered for, factories did not exist, no smoke nuisance needed redress, and there were no problems of garden spaces or "lungs": hence the task of town planning in those days was a very much simpler one than it is at the present time.

ROME.

By Dr. Thomas Ashby, F.S.A.

(*Read Tuesday morning, October* 11.)

Dr. Ashby traced, in detail, the planning of Rome. He pointed out that the natural topography of the site and the circumstances of the growth of the city rendered any systematic scheme of planning a very difficult one to adopt. The encircling seven hills and their immediate valleys, together with the positions of the gates in the Servian wall, determined the plan, and when later the city outgrew its boundaries and stretched outside the Servian wall, the main lines of the streets were already laid down by the military roads which issued therefrom. The city as a whole, however, seemed to have grown up quite unsystematically. Julius Cæsar was the first to grapple with the problem, by making changes around the Forum. Augustus continued on the same lines, and later emperors—Nero, Vespasian, Titus, Domitian Trajan, Hadrian, Diocletian, Maxentius, and Constantine—undertook successive rebuildings, alterations, and additions.

Dr. Brinckmann dealt with the evolution of the town planning ideal since the Renaissance, dealing first with some Italian cities, and later with French and German examples.

THE GROWTH OF LEGAL CONTROL OVER TOWN DEVELOPMENT IN ENGLAND.

With observations on the expense incurred by the Local Authorities in carrying out a scheme under the Town Planning Act.

By H. Challoner Dowdall, M.A., of the Northern Circuit, Barrister-at-Law.

(*Read Tuesday afternoon, October* 11.)

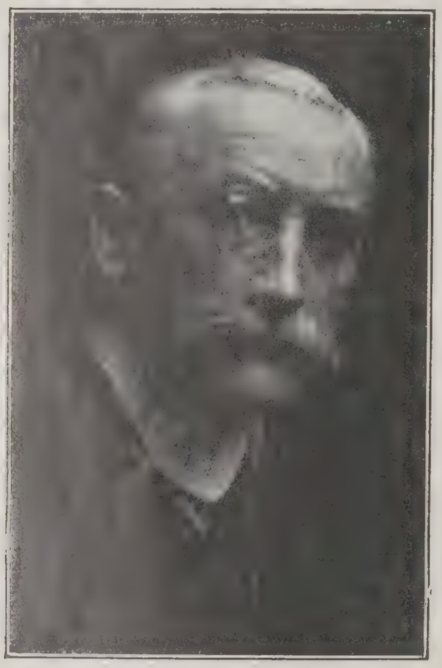
There are three ways in which the State may control action within its territory:—First, by establishing conditions of general application and relying on the action of individuals acting within those conditions to produce results beneficial to the State. This may be called the common-law method. Secondly, by conferring on local authorities power to lay down conditions of local application, or power to acquire and control property within their locality. This may be called the local government method. Thirdly, by itself laying down conditions of local application, or by acquiring and controlling property. This may be called the method of direct State control. Each of these methods, either singly or in combination, operates in the sphere of land development in which town planning occupies an increasingly important position.

Before discussing the limitations which Parliament has introduced, a word should be said as to the common-law system of highways. At common law a landowner may dedicate the use of his land as a highway to the public, and land which is so used is presumed to have been so dedicated, the parish in each case being liable to repair the road. The repair of bridges and their immediate approaches has, on the other hand, since Anglo-Saxon times lain on the county. There is no common-law method by which a highway can be acquired otherwise than by the actual or presumed dedication by the landlord.

It was in the eighteenth century, and more particularly under the stress of growing manufacturing industry, that the common-law system was felt to be inadequate. Villages grew into towns, traffic increased, and accommodation had to be found for a fast-multiplying population; landlords in urban districts, desiring the fullest return from their land, often built houses closely packed together, without proper ventilation accommodation, or access; the roads in bad weather became almost impassable.

Public improvements are still often effected under powers conferred by the local Acts which every year pass through Parliament, but by the time that the Towns Improvement Clauses Act was passed in 1847 one may say that the great period of special Improvement Acts promoted for each particular locality was drawing to a close; for the Reform Act of 1832 had been followed by the Poor Law Act of 1834 and the Municipal Corporations Act of 1835, and the principle of carrying on local government by some uniform scheme of popularly elected representative bodies was now admitted. In 1848 was passed the first Public Health Act, and under the general powers which it conferred it was possible for different localities to establish Local Boards of Health, popularly elected on a uniform system. By the Public Health Act of 1872 every municipal borough, local board district, and Improvement Act area was constituted an urban sanitary district, and similar powers were conferred on Town Councils, Local Boards, and Improvement Commissioners. These powers were more clearly defined and consolidated by the Public Health Act of 1875, and extended in regard to matters with which we are here concerned by Acts of 1888 and 1907. By the Local Government Act of 1894 a uniform type of more popularly elected Urban District Council was substituted for the Local Boards of Health and Improvement Commissioners, which were thereby abolished, the Town Councils remaining as the urban sanitary authority for the boroughs.

THE RIGHT HON. JOHN BURNS, M.P.
Hon. President of the Conference.



MR. JOHN W SIMPSON, F.R.I.B.A
Secretary-General of the Conference.

Having briefly sketched the growth of local governing bodies and the powers they possessed previous to 1909 with reference to town planning and replanning, the author said that the Town Planning Act of that year related to land in course of development or likely to be used for building, and in certain cases to land adjacent thereto, whether already built upon or vacant, and it introduced a new and ingenious method of procedure. The effect of a "scheme" approved under the Act is that of a private Act of Parliament, but the "procedure regulations," which take the place of standing orders in private Bill or Provisional Order procedure, are specially adapted to the requirements of the case; the central criticism and control, instead of being exercised by a committee of either House or by Parliament itself, will be exercised by an expert department of the Local Government Board, Parliament only reserving to itself a right of veto in certain circumstances. The local authority also, which for this purpose may be either a Rural or Urban or Borough Council, or a combination of them, appears, either spontaneously or possibly under compulsion, as promoter of the scheme and as responsible for its execution. As to the matters which may be included in a scheme, the Act contains no limitations, though presumably they will relate to those set out in general terms in the fourth schedule of the Act.

The Development Act of the same year illustrates the method of the central Government either passing special Acts of local application or itself executing or controlling works. The Development Act gives the Road Board power to compulsorily acquire land for the construction of new roads, and also to acquire land some 220 yards on either side of new roads, the arbitrator for compensation in such cases being appointed by the Lord Chief Justice and the general control kept in the hands of the Treasury.

MR. LEONARD STOKES, P.R.I.B.A.
President of the Conference.

MR. RAYMOND UNWIN.
Hon. Secretary of the Exhibition Committee.

From careful perusal of the Act, it appears that the cost will fall under three heads:—1. Cost of preparing and promoting a scheme. Perusal of the procedure regulations does not suggest that the cost of promotion need be very heavy. 2. Cost of compensation to property owners for injurious affection. The amount of compensation is greatly limited by Section 59; and cases may occur where a well-considered scheme may be of great public benefit and entail no expense for compensation at all. 3. Cost of land purchased by the local authority for the purpose of a scheme.

Having elaborated these points, the author said he thought it clear that a scheme does not necessarily involve the local authority in the purchase of land.

TOWN PLANNING AND LAND TENURE.

By C. H. B. Quennell, F.R.I.B.A.

(*Read Tuesday afternoon, October* 11.)

The nineteenth century towns and suburbs may be said to have been laid out without any road sense, and were a mere congeries of houses, swarming like bees in a cluster, at the side of the railway. The Town Planning Act may be taken as an acknowledgement that hitherto our towns and suburbs have been allowed to grow in haphazard fashion. Admirable, however, as the measure is, it does not contain within its sections any powers to alter the causes that in the past have had the effect of producing the old, bad, commonplace suburbs. Briefly, it may be stated that the Town Planning Act offers two ways by which town-planning schemes can be carried through. The one where local authorities buy land and develop it themselves; the other where after consultation with landowners and other interested parties, a town plan is prepared which is left to private enterprise to be carried out. Of the two alternatives it is safe to assume that the latter will be the one generally adopted, as being more in sympathy with English traditions. Suburban development, then, will proceed on much the same lines as before, excepting only that each detail will form part of an ordered scheme, bearing its proper relation to the whole. But the provision of the necessary capital and the details of land tenure remain unchanged under the Act.

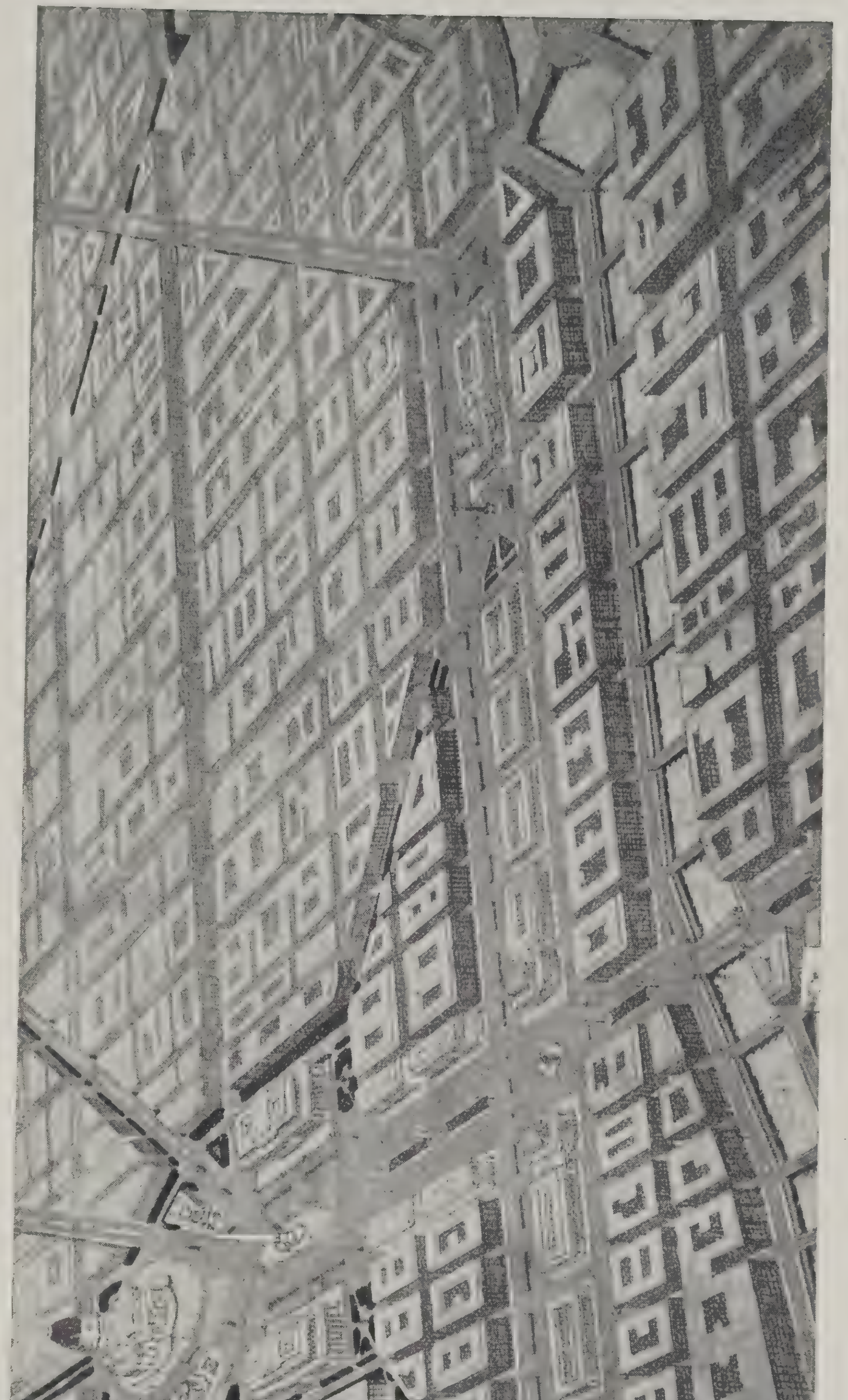
Now it is just these same very utilitarian details that have shipwrecked many a good scheme in the past, and it is proposed in these notes to recapitulate them for the benefit of those who may not be familiar with them.

It should be remembered that these local authorities have had, under the recent Finance Act, a very powerful weapon added to their armoury in land valuation, and the price fixed for the time being will form the basis of the bargain by which it may be acquired for improvement schemes.

Of the causes that have had the effect of producing the bad old towns and suburbs, the first may be instanced in the methods which have hitherto been used by landowners in the development of their estates and the general disregard of all the amenities. The fairly general practice has been to lay out each separate building estate as a thing apart, and with little relation, if any, to its surroundings, and within the confines of its boundaries to crowd in as many regulation rectangular building plots of the minimum width and depth as could be planned to abut on its roads. In so doing, trees, levels, old hedges, or landmarks were utterly disregarded. It has become the fashion to use the speculating builder as the whipping-boy for the landowner, whereas, as a matter of fact, the damage has nearly been completed by the landowner before the builder turns up to complete the horror of the scene with his stock-pattern villa. The builder, then, it must be admitted, is not as a rule the offender so far as the lay-out of the average building estate is concerned, and seldom has anything to do with roads or with their disposition.

Under what is known as the private deed system it is necessary, when purchasing land, to prove the vendor's title to the same. The legal side of land tenure, then, must amount to a considerable first charge on any estate; and, in the case of railways, the companies' official advisers have generally estimated the cost of the preliminary negotiations and transfer of land to be about 10 per cent. of the value of the land so acquired. Unless, then, town-planning schemes are to meet with a larger measure of support from landowners than the railways have, it may cost £1,000 to obtain £10,000 worth of land. Again, the title must be proved before the mortgagee can be assured that he has a proper security, with additional costs and charges for so doing, which must again be incurred if it is at any time desired to clear the property. It should be remembered that a mortgage, even when paid off, is an incubus to the title, in that for the next forty years in all dealings with the property it must be proved that it no longer exists.

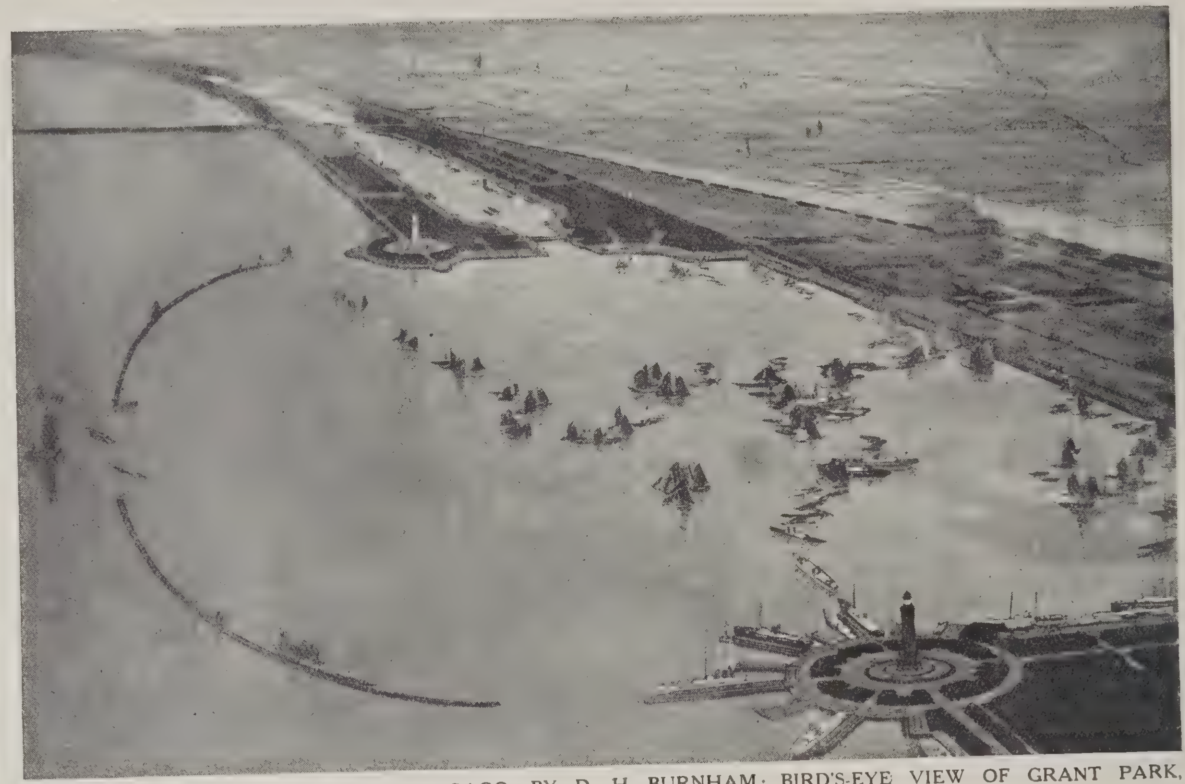
The Town Planning Bill has been called into being, in a very large measure, because the landowner has been hitherto content to look on his estate rather as an accretion, or perhaps a better word is excrescence, added to the body of the town, without any regard to the latter as an organic whole.



SCHEME FOR THE LAY-OUT OF CHICAGO, BY D. H. BURNHAM: VIEW OF RAILWAY STATION SCHEME WEST OF THE RIVER, SHOWING RELATION WITH THE CIVIC CENTRE.

(Town Planning Exhibition.)

The railway station scheme of Chicago provides for the railways at a level below that of the streets, with the stations above



SCHEME FOR THE LAY-OUT OF CHICAGO, BY D. H. BURNHAM: BIRD'S-EYE VIEW OF GRANT PARK, THE FACADE OF THE CITY, THE PROPOSED HARBOUR AND LAGOONS.

(Town Planning Exhibition).

We have, at the same time, an extremely efficient system of land registration in England, run on very similar lines to those in Germany, Austria-Hungary, and Australia. Land registry may be summarised briefly as the giving by the State, through its Land Register, of an absolute title, or a possessory or leasehold one, as the case may be, and the occasion requires. The place of the lengthy deed is taken by a simple certificate, on which all charges or mortgages have to be endorsed, and one great advantage accrues —that an actual register is kept at the Land Registry offices of all the owners and all charges. Forgery of deeds then becomes impossible, as one only has to go to the Land Registry and inspect the register to find who is the actual owner, and whether the land is unencumbered. Land registry appears to hold within its powers some hope for those who deal in land, and anyone who is particularly interested in the subject may be referred to the evidence given before the Royal Commission on the Land Transfer Acts, held between October and December, 1908, which can be bought in Blue Book form. It should carry weight and help forward the cause.

Another most interesting development in buying houses is that wherein life insurance is made part of the transaction, and this method appears to be very suitable and likely to be helpful for small properties. Such a system is in operation at the Hampstead Garden Suburb, and works admirably; but here the companies know the conditions of the land and its tenure.

The details, then, by which the Town Planning Act can be assisted in its working here in England may be summarised as—(1) By the landowner awakening to his responsibilities and helping the Act forward by being prepared to fall in with the details of the town plan. (2) Simplification of land transfer by the abolition of the private deed system in favour of land registration, which has already had its trial and has worked well. (3) The reduction of costs which may be expected from the foregoing, and the more general sense of security that will be consequently engendered.

Discussion.

Mr. Isaac Edwards, estate agent of Merthyr Tydfil, said that in some places the system of leasehold was virtually unknown, and in others the reverse was the case, the freehold system being inoperative. Merthyr Tydfil was included in this latter category. He thought it preferable to advocate buying rather than renting. It was essential to encourage the individual to build and buy instead of throwing the responsibility upon municipalities and other authorities.

Mr. W. H. Hope, solicitor, of Sunderland, said he was concerned chiefly with the legal aspect. He preferred the leasehold to the freehold system, as in the former case more stringent regulations could be enforced, as to how the land should be used, than in the latter. He had to correct Mr. Quennell with respect to his statement concerning the Hampstead Garden Suburb. He (Mr. Hope) had visited the suburb only that morning, and had ascertained that it was impossible to become owner of a house thereon in any conceivable circumstances. Although the legal title was established, the estate remained the property of the Trust. All formalities were, of course, dispensed with if the house was taken on this basis. He believed that under the Act it would still be necessary to retain professional services in restricted covenants. He anticipated applications chiefly from the rural districts.

Mr. Edwin T. Hall, F.R.I.B.A., said that what was popularly known as the Town Planning Act was rather a town extension Act, inasmuch as it dealt not with the rebuilding of a city, but with the development of that already existing. If, in the development of a certain district, it was found necessary to take all the property of an owner, he (Mr. Hall) could not see how that individual was to be compensated. He thought that the leasehold system was the only one on which the small man could build at all. It was, in short, the only system whereby one owner was prohibited from injuring an adjacent owner. Referring to a southern suburb neighbourhood, Mr. Hall observed it was no exaggeration to say that property had depreciated 50 per cent. within the last thirty years. This had nothing to do with leasehold or the development system; it was the natural outcome of the general exodus from within the five mile radius. The principle of the Trusts, as in operation at the Hampstead suburb, was that every owner in theory became owner in common with everybody who had a house on the estate. Large numbers of landowners there were who bought land so as to make much profit out of it. These men it was who had brought discredit upon landowning, by permitting congested building in order to get excessive ground rents.

Mr. Howard Martin said it was possible that land might depreciate in value in consequence of the application of the Town Planning Act, and the owner thereby sustain a real loss. No compensation, he understood, was to be paid for loss suffered in this way. The leasehold system, properly administered, had done just what the Town Planning Act was designed to do. Eastbourne, for instance, was owned virtually by two freeholders; and yet it was a model of town planning. He had found it rare that the registration title had to be investigated so long as forty years back.

Mr. Cowley said it was imperative that they should consider the question of adjoining territory. No authority could act contrary to the wishes of another authority, as this latter had the right of appeal to the Local Government Board. So far they were protected. He did not agree that the Roads Improvement Act was a rural Act. It dealt rather with congested urban areas. In forming a by-pass or loop road it would perhaps be necessary to go through undeveloped land. This would involve the working of both Acts together.

Mr. W. H. Robinson (of Wallasey) observed that the first speaker meant to say if property was interfered with to the disadvantage of the owner, he (the owner) would not receive compensation. If so, a sense of fair play would surely prevent the application of the Act.

Mr. Hawksworth (of Bolton-upon-Dearne) asked if there was any provision under the Act whereby the purchase of house property by individuals from authorities would be rendered possible.

Mr. Dowdall, in reply, said that, with regard to the re-planning of towns, the main power lay with urban authorities. They had, of course, to obtain, provisional order power.

Referring to the matter of compensation, he observed that in some cases it would not be paid. Experience had taught that the best way to develop property was the most profitable. Where, however, provisions were desirable for the amenity of neighbourhood, there the landowner would suffer, and receive no compensation. The Town Planning Act was intended not only to effect improvement in existing areas, but principally to control the development of new areas. The new power was to put restrictions upon the developing owner. Replying to the question put by Mr. Hawksworth, the speaker said that the Act had nothing to do with the purchase of house property from authorities.

STANDARDISING CITY PLANS.

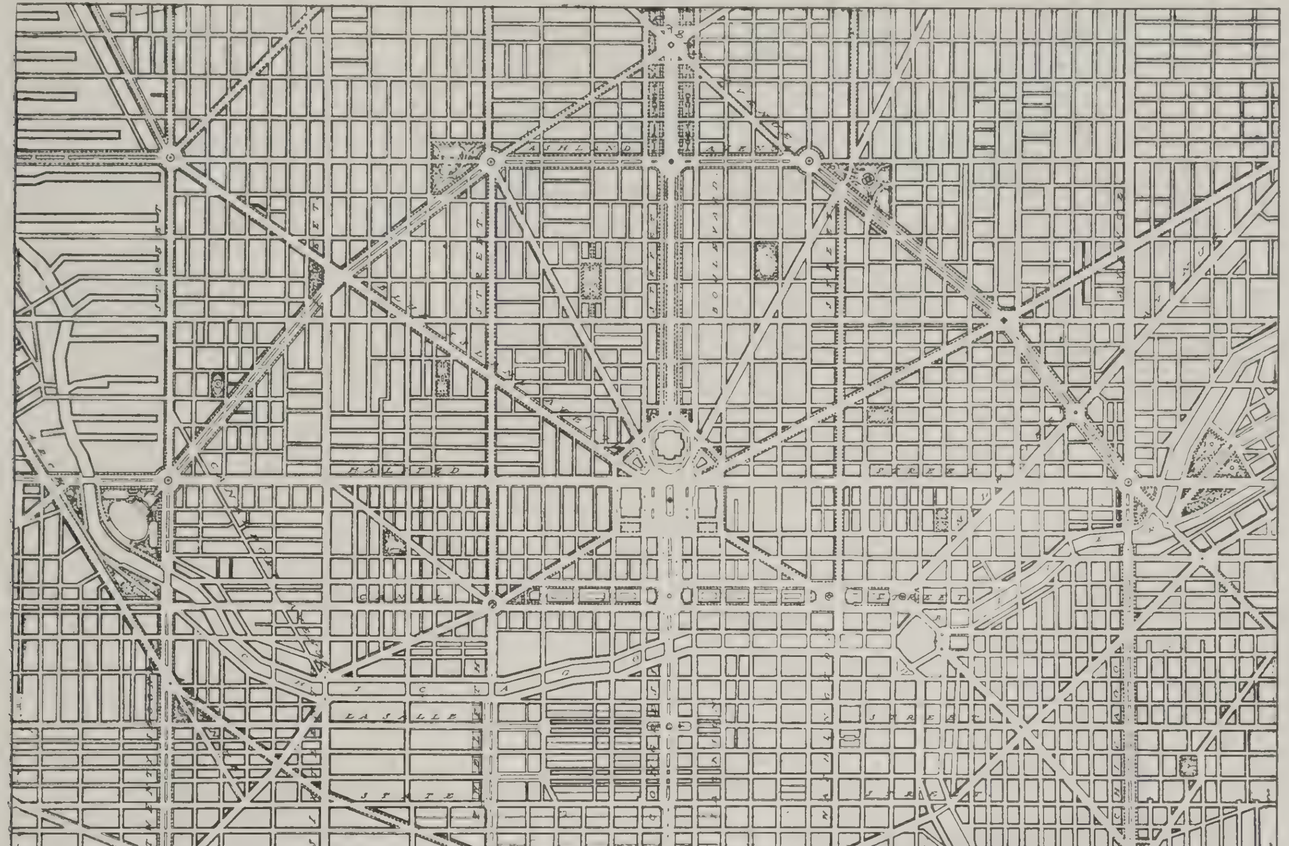
By Charles Mulford Robinson, Rochester, N.Y., U.S.A.

(*Read Wednesday morning, October 12.*)

The city of the present is the town of the past, sometimes grown in size, but not adjusted to new conditions. At last it has become possible for the citizen to get away from work.

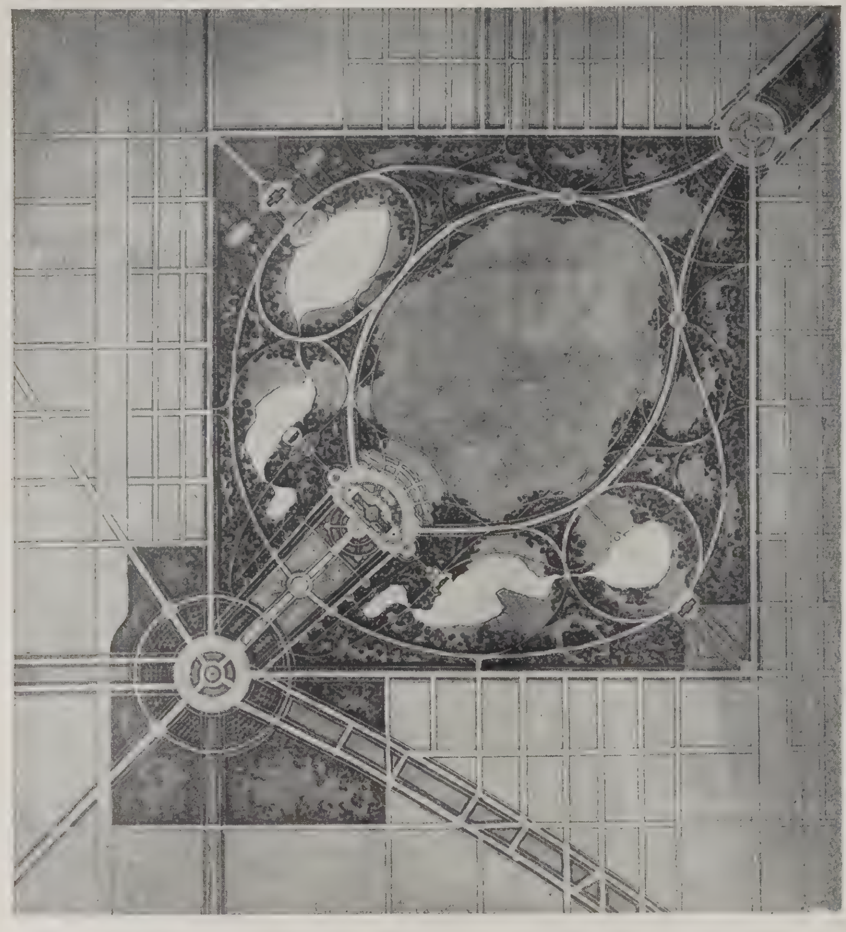
Obviously, this is a social readjustment of incalculable value. But it has expressed itself very inadequately on the city plan. Though business sections and home sections have become divorced, and consequently have developed entirely different traffic requirements, yet, generally speaking, the street plan has remained unchanged. Thus the average city's lay-out may be said to make scarcely any recognition of the tremendous social change which has come with the labourer's wish to live away from his work and his recently acquired ability to do so.

Adequate recognition would involve two groups of changes, and these, when made, or if made, must definitely differentiate the city of the present from the mediæval town, and even from the city of the last century. These changes would be, first, the provision of long, straight, broad radial highways of easy gradient. Such thoroughfares, shortening time and distance to the outer zones, would



This scheme has been drawn up in a public-spirited way by the Commercial Club of Chicago, and expressed through the medium of Mr. Burnham. The above plan shows the civic centre (to be occupied by a great domed building) with boulevards radiating around; the treatment of Grant Park (in the centre of the foreshore to Lake Michigan); the yacht harbour, and enclosing piers. Part of the scheme has already been carried out, and it is hoped that the whole will be completed in succeeding years.

GENERAL PLAN OF SCHEME FOR THE LAY-OUT OF CHICAGO. BY D. H. BURNHAM.
(*Town Planning Exhibition.*)



SCHEME FOR THE LAY-OUT OF CHIGAGO · PLAN OF A PROPOSED PARK.
(Town Planning Exhibition.)

facilitate the daily ebb and flow of travel, and would increase the area available for home-building. Second, the changes would involve a rearrangement of minor streets, adjusting them to the needs of the sections which they serve, largely new needs in home sections.

The Germans apply the so-called zone system to their city-planning. But even with them the zone's adaptation to function is more of an architectural than an engineering matter. In the city of the present, in any nation, there is to be found a street arrangement which is generally uniform, although it is intended to meet totally unlike needs.

In the built-up portion of most cities of the present the area devoted to streets is from twenty-five to forty per cent. of the total. In mediæval cities it was frequently about ten per cent. Recognising a new requirement, we have raised the proportion; but we have done this in a uniform, unthinking way. We have made the ridiculously impossible attempt to imagine an "average street," and then, having guessed at a width and arrangement that would be theoretically suitable for this, we have sought to save ourselves trouble by enacting legislation to standardise it.

Consider the economic loss involved in such "mechanical standardising"—an evil of which the United States has no monopoly. In fact, Mr. Olmsted, summarising his observations on a city-planning trip in Europe some months ago, remarked that such standardising was to be found "in not a few quarters of European towns, perhaps most noticeably in England."

The economic loss that results is of two kinds, and it is all reflected in the rent. In part this loss is represented by the actual municipal outlay for the paving and maintenance of the unnecessary street-space; and in part it is represented by the increase in rent traceable to the amount of building land taken out of the market in order to supply the needless street-space.

The purpose of a street, be it observed too, is to afford means of communication. To say, therefore, that the wider street than the traffic needs in a residence district is a good thing because the extra width is nice for something else—as grass and flowers, and air and light—is absurd, if those attributes can be more economically provided by other means. Would an architect justify the expense of putting extra staircases in a house because baluster-rails are nice for boys to slide on?

On main thoroughfares, indeed, mere spaciousness of appearance is agreeable in itself—the more so because there it is suitable. But width being suitable on such streets, they would not be narrowed. On minor streets—by which I mean those non-arterial thoroughfares which are neither stately boulevards nor routes of urban railways, and which make up the bulk of any city's residence quarter—an aspect of cosiness is, on the other hand, attractive. Æsthetically, such streets gain nothing by excessive width.

We may note the inconsequence of making footpaths almost always double on a street, no matter how little walking there may be; or of making them always co-extensive with the roadway. Both these acts are mere survivals.

It is the universal modern practice in good road-building through country districts to put a good surface on a comparatively narrow strip rather than a cheap surface on a wide strip. This, it is considered, serves the traffic better and with more genuine economy. May we not learn also from this conclusion? From the standpoint of the traffic to be served, the secondary street in a residence section is much more nearly akin to the rural highway than to the city's business thoroughfares.

The street of excessive width is a good thing in the poorer quarters, we are told, because it provides not only light and air, but play and recreative space. Less street and more yard area would provide the air and light as well, and would give wholesomer play or recreative opportunity.

NOTES ON THE RULES AND REGULATIONS OF THE CITY OF PARIS RELATIVE TO ARCHITECTS.

By Louis Bonnier, Architecte-voyer-en-chef de la Ville de Paris, President de la Societe des Architects diplomes par Gouvernement.

(Read on Wednesday Morning, October 12.)

The first in date of the Paris architectural ordinances applies to the Place des Vosges, formerly known as the Place Royale. On August 5th, 1605, Henry IV., when engaged with Sully in the reorganisation of his kingdom, resolved, for "the convenience and embellishment of the town," to lay out upon the old horse market-place, a large, open square measuring 273.50 metres each side. He mentions his intention to erect all round houses of a similar, though not identical, type, with shops on the ground floor for trading purposes, to construct at the same time a promenade for the inhabitants who are "too much penned in in their houses," and to provide suitable open spaces for "large gatherings and festive displays." He set the example by erecting himself the Pavilion leading to the Rue de Birague, and known as "Pavilion du Roi."

In order to preserve the *ensemble*, and so that each house should remain in possession of the same owners, "for them, their heirs, and assigns for ever," the edict of 1605 provides that each tenement shall remain perpetually indivisible, and this is why one of them is still, after 300 years, in the possession of the family that built it. In the same spirit as he conceived the Place Royale, Henry IV., two years later, granted a lease, subject to the grounds being built upon according to the drawn plan and specification thereof. As far back as 1609 the plan of François Quesnel shows the space formed into a perfect triangle, occupied by symmetrically built houses harmonising with the Pont-Neuf and the statue of Henry IV., in front of which a stately gate affords access to it.

Having given concise accounts of the Place St. Sulpice, Rue Royale, Place de la Concorde, Rue de Viarmes, Rue des Colonnes, Rue de Rivoli, Place de l'Ecole de Médicine, Place due Pantheon, Place de la Madeleine, the approaches to the Bois de Boulogne, and other famous areas, M. Bonnier said, with regard to the Place de l'Etoile, that the Arc de Triomphe, commenced by Napoleon I. and completed by the Restoration to the glory of the Duke of Angoulême, was first lost in the solitude of the Chaillot walking grounds, and was in danger of its green surroundings being encroached upon by the westward progress of Parisian buildings. Wishing to endow it with a zone worthy of its great artistic and historic interest, Napoleon III., by a decree of 1859, caused a space 224 metres in diameter to be laid out at its base with flower-beds, protected by suitable railings, and a row of uniform houses 17 metres high, including the roof, to be erected. Behind, a street was made to cut off the area from the vicinity. At that time these mansions, used as dwellings for the gentry, dominated the surrounding districts; but Napoleon III. had not foreseen the prodigious development of that district, which, whilst increasing the value of the land tenfold, induced some of the owners of the property, situate outside the unoccupied area, to build up to the maximum height allowed in other parts of Paris. The consequence is that now we have a want of harmony which is to be regretted, though, fortunately, it is only temporary, in the alignment of the roofs of the fourth side of the Arc de Triomphe.

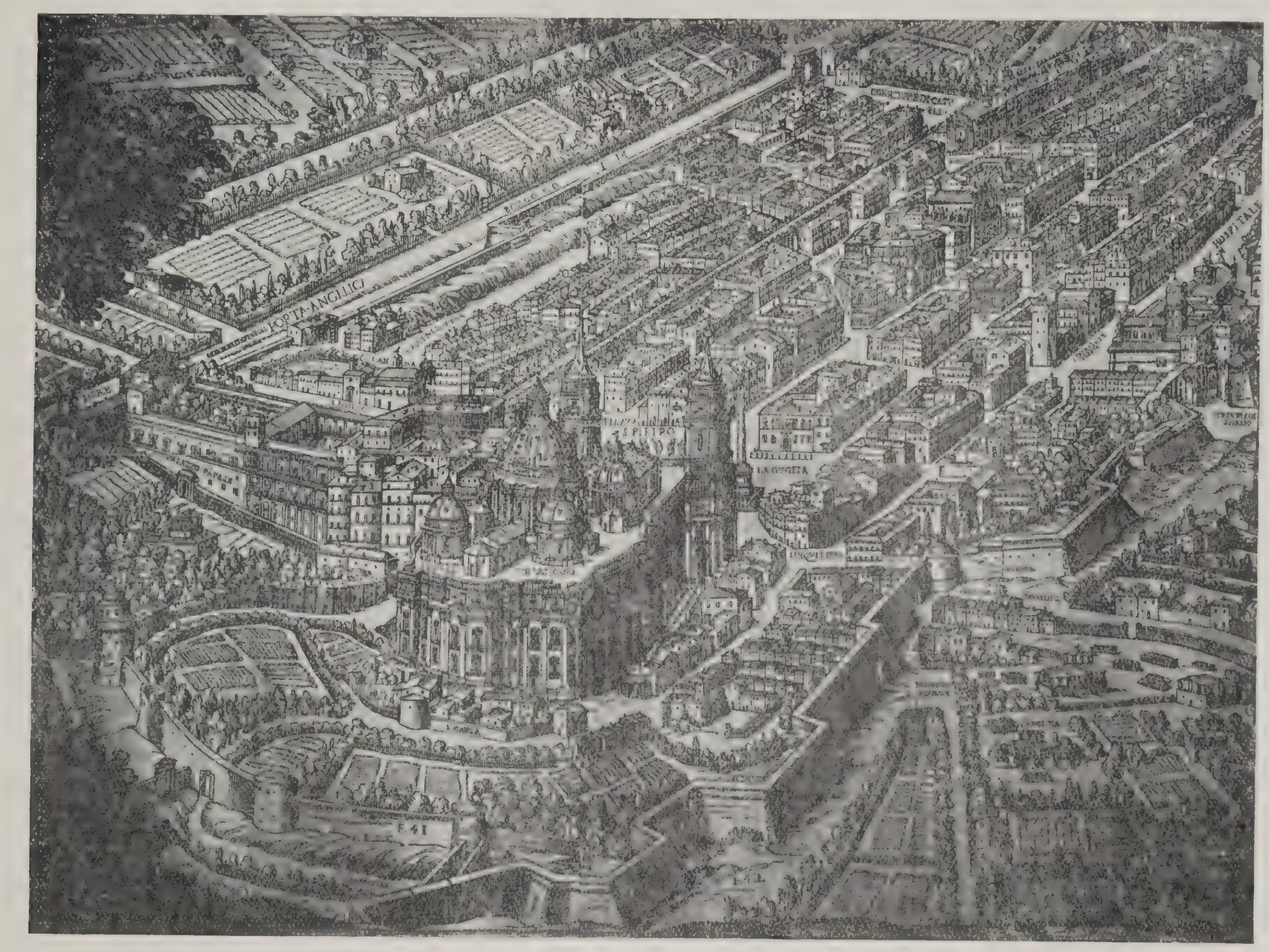
Two-thirds of the architectural servitudes in Paris have nearly all been complied with, and the abandonment of the others is the work of previous periods, if not of the originators themselves. They have experienced the fate of so many other marvels which are so plentiful in Paris, and which ignorance and lack of artistic sense have put down to the imperative demands of the unavoidable evolution of cities. Fortunately, for some years past, and under the influence of artists and archæologists, public opinion has rebelled against these destructions, mostly unwarranted, and a healthy reaction is now tending to bring the authorities back to a sense of respect for the artistic creations of the past.

Paris is making, and will continue to make, strenuous efforts in the direction of such a renovation. Patiently it will endeavour to reconcile the desire to preserve its beauties with the equally imperative requirements of hygiene and modern traffic. This is feasible and, I may even say, easy. In any case, it is necessary.

CAUSE AND EFFECT IN THE MODERN CITY.

By H. V. Lanchester, F.R.I.B.A.

(Read Wednesday Morning, October 12.)



BIRD'S-EYE VIEW OF ROME AT THE END OF THE SIXTEENTH CENTURY, SHOWING OLD ST. PETER'S
(Town Planning Exhibition.)

The causes influencing the outward aspect of the city are of the widest imaginable range, embracing the whole life of man, and it is hardly possible to conceive any factors, whether physical, psychological, racial, or social, that do not act and are not themselves reacted on by the structural environment of the community.

It has been the fashion to regard this almost entirely from an economic standpoint, assuming that the city has grown up because of the advantages it offers in raising the standard of living by giving facilities for organised production. For my part, I doubt if this is the dominating force, believing that ideal influences are more powerful than material ones. A particular ideal may appeal to one as refined or vulgar, admirable or objectionable; but it, not economic advantage, is the real motive force in the development of the community, and material advantage forms but a part of such an ideal.

We have the large factories and warehouses grouping themselves along, first the river, for the sake of water-power and transport, and subsequently the canals and railways when water-power became unimportant and transport the main requirement. We have the original city gradually taken up by commerce and exchange, the residential districts filling up by degrees the spaces between the star points composed of mills or factories, and the retail traders following along the main radial arteries. The most attractive district will naturally be selected by the wealthy, and the others will secure occupants on a basis of necessity or convenience.

The governing or official centre will, unless firmly fixed by tradition, slip into a position between the commercial centre and the wealthy quarters, while the leading places of entertainment will gravitate in the same direction. Parklands and open spaces are chiefly governed by the suitability of the land, or by facility for its acquisition. National character and national ideals are the paramount influences, arising out of climatic demands and historic traditions. The most difficult thing to uproot is tradition; tradition represents the ideal, and concerns itself but little with the genuine material requirements of the moment. Thus we find the English house designed to stand a more boisterous climate than the French; but the English house in a sheltered position remains English, and the French, however exposed, will be French.

Again, when we took to building flats we gave them as far as possible the effect of the private house, and only gradually arrived at a more logical treatment.

Architects hold a strong opinion in favour of consistency between the internal symmetry of a building and its relationship to its surroundings; if, for example, it has a marked axial treatment, this must be continued far beyond the actual entrance, so that the harmony of plan may be apparent in the whole, whether street, garden, or building. Such an ideal only fails to be general owing to the lack of technical knowledge outside the profession, and only needs to be clearly explained in order to secure appreciation—an instance in which we may cultivate a dormant ideal.

Again, take a building irregularly placed and requiring a special knowledge to add beauty to its surroundings. Architects may hope in this case to secure a hearing for their view, even in our own country. There is, however, a mass of ideals imposed by the public on the architect, which are too powerful for him to resist, and these are of such force as to dominate the character of the city.

Is it not an almost invariable rule that the Anglican Church shall build in some form of Gothic? Again, how would it appeal to the householder if his garden were left unfenced, as in the United States? (even the garden city community compromises with posts and chains).

As to the house itself, probably nothing determines the general character of the city so much as the dwelling unit.

The Englishman's notion for a house "all his own" does more to fix on us the type of our city than any other consideration. Until we realise that our art is not a thing to be taken in specified doses at specified times, the ideal of the city as a thing of beauty in all the aspects of street, square, and park will receive but poor support from the general public.

Discussion.

In the discussion that followed the reading of the foregoing papers, Mr. J. A. Brodie, City Engineer, of Liverpool, emphasised the paramount importance of improving the principal means of communication from the centre of a city to the outskirts. If only this were considered early enough, a great deal of money could be saved. Taking Liverpool as an example, he said that during the past twelve years they had spent £1,250,000 in widening and straightening thoroughfares, four-fifths of which expenditure went for the removal of buildings and the compensation of owners, which would never have been necessary if intelligent town planning had been adopted at an earlier date. Recently they had been constructing several miles of wide roads on the outskirts of Liverpool. The cost of these, on unbuilt-upon land, was about £7,000 per mile to the public authorities, the landowners paying their proportionate share as well. Nearer the city the cost rose to £70,000 per mile, and within one mile of the centre of Liverpool the improvements had been at the rate of £350,000 per mile. He thought that wide roads would become of greater importance in the future, and that the tendency would be towards incorporating these in the park system. It was a mistake to have irregular areas in the residential districts. A far better result could be attained by carrying out the park area a little in advance of the town. This would be cheaper in the end, and it would conduce to that most important of all considerations, the growth of healthy children in towns.

Mr. Thomas Adams, of the L.G.B. Town Planning Department, said he hoped that at the conclusion of the Conference some expert criticism would be focussed on the general opinions arrived at. Architects should take the matter up, and should show cause why they were to be introduced into town planning matters. He thought they had a primary right to be concerned, just as much as the engineer and the sociologist. Lately he had been to Germany and Sweden in order to see what was being done in those countries, and he had arrived at the conclusion that the wide road and the high tenement were complementary. In Berlin, with the great cost of forming and paving wide roads, it was imperative to have high tenements on either side; in no other way could the cost be borne; but under our own Town Planning Act they had the opportunity of making arrangements with landowners, so that while a main road of, say, 80 ft. was insisted upon as a means of outlet from the city, concessions of width could be made in respect of side roads used for purely domestic purposes. In this way a system of co-operation between the landowner and the authority was established, and in that respect we were in advance of any other country.

Dr. Hegemann (Berlin), Col. Plunkett, Mr. Hall Blyth (Edinburgh), Mr. E. P. Warren, Mr. A. E. Collins (Norwich), Mr. F. S. Baker (Toronto), and Sir Aston Webb also took part in the discussion. Mr. Hall Blyth, speaking of the Auld Brig of Ayr, to which Professor Baldwin Brown had referred in his paper, said this structure was neither beautiful nor useful, and its preservation was due entirely to the poem Robert Burns had written about it. The present bridge, however, was not the one that Burns saw, and being out of alignment, and fitted only for foot passengers, it needed to be substituted, as any intelligent town planner would require, by an adequate bridge suited to all kinds of traffic. Sir Aston Webb pointed out how, in the troublous times in France towards the end of the eighteenth century a committee of artists had met continuously to consider the beautification of Paris, and in the present exhibition at Burlington House could be seen, side by side, the plan they then drew up, and that which Baron Haussmann had subsequently carried out. From this comparison anyone could see how the scheme which made Paris so splendid a city had been determined vastly by the Commission of Artists who had given their time to the task. This was an excellent indication of the good that would result if architects in this country to-day were brought into the consideration of town planning schemes at their very beginning.

TOWN PLANNING WORK IN SWEDEN.

By Dr. Ing. Lilienberg, Goteborg, Sweden.

(Read on Wednesday afternoon, October 12.)

Dr. Lilienberg's paper on "Town Planning Work and Legislation in Sweden during the last Fifty Years," had not been printed, but was read from the manuscript. The author laid particular stress on the Act of 1874, which has been the means of placing Sweden well to the fore in systematic town planning. The lecture was illustrated by many interesting slides showing examples of existing plans, and indicating, also, projected schemes for future development.

Discussion.

Colonel Plunkett said that we had more to learn from Sweden than from Germany in the matter of town planning. The Swedish Act of 1874 was better than the Prussian Act of 1875. Had Mr. Burns been more intimately acquainted with town planning in Sweden, he (Col. Plunkett) felt sure that Mr. Burns would not have imposed the intolerable burdens upon municipalities that were the result of the Act. Every town in Sweden was compelled to have a town plan. One fault he detected in the Swedish Act of 1874, and that was that it insisted too strongly upon the wide street, and had promoted the erection of tenement dwellings. The effect of these buildings upon health was, however, counteracted by an excellent system of physical training.

Mr. Joseph Fells enquired whether there were any laws in Sweden, made since 1874, with respect to unearned increment consequent upon the improved values given to land.

Councillor John Loseby asked whether councils in Sweden paid compensation when it became necessary to acquire land for the purpose of street extensions; and, further, whether this compensation was ultimately got back from the builder.

Dr. Lilienberg, replying to the question respecting unearned increment, said that the Swedish Parliament proposed to legislate in this direction next year. Compensation was paid for land acquired for the purpose of street improvements, but it was not extracted ultimately from the builder.

CITY IMPROVEMENTS.

By Professor S. D. Adshead, F.R.I.B.A., of the Department of Civic Art, School of Architecture, University of Liverpool.

(Read Wednesday afternoon, October 12.)

In comparing the modern English city with that of America, Germany, or France, it is very obvious that the former lacks cohesion in style, is defective in scale, and illogical in its adornment. Here in England in the matter of style we are exceptionally confused in our point of view. We have not had since about the time of the Gothic revival any one influence, either academic or personal, sufficiently powerful to control a national style. True, we have had the influence of Mr. Norman Shaw in connection with our domestic work, but it is to our monumental work that I particularly refer. In America they have had the strong personal influence of pioneers like the late Charles Follen McKim, and in France a national style has clung about the traditions of the Ecole des Beaux-Arts. The lack of cohesion in style which I see in this country may be largely due to the Gothic revival of 1870 and thereabouts; certainly its destructive influence was never quite felt in other countries as it has been here.

National style in architecture moves in cycles. In its rotation purity and originality are always followed by pedantry and confusion. We in England are, I fear, at the present moment very nearly at the bottom of the wheel, and I am bound to admit that in New York they are pretty nearly at the top. Perhaps my estimation of the cycle of progression in America is too modest; but buildings like the Pennsylvania Railway Station, the Metropolitan and University Clubs, the Boston Library, and the Bank of Montreal are perhaps as good as what has been done in Italy and Rome. We shall achieve but little in this country until we study more seriously the vast field of knowledge which archæology and science has spread at our feet.

Provided we keep well before us and embody in our designs the essential requirements of our modern social system, the new materials and the latest inventions of science, we need have no fear that we shall be counted as pedants, or that our work will be dry as dust. If we are to express these things, we will be forced into some originality of composition.

Apart from the question of style, yet very closely allied to it, comes the question of scale. A comparison of London with Paris or with New York, or a comparison of our provincial towns, Liverpool, Birmingham, or Glasgow, with London, shows us that after all the æsthetic value of a town approximates very nearly to its appreciation of scale. By scale I mean not only comparative size, but also comparative appropriateness and fitness. London has by far the biggest population of any city in the world, and yet, when I think of Paris or New York, it is a small town; the ambitions of its inhabitants are comparatively modest; they have but a very poor idea of the importance of correct representation, or they are not what they pretend.

A great city must be built on a great scale; it must have wide streets, wide sidewalks, and big buildings simply composed; it must concentrate its interest at points, and must not spread it about with reckless waste. I do not look disparagingly ahead! on every side I see evidence of the need for a bigger scale, and the advent of the Ritz Hotel and Selfridge's Stores mark a change.

But in the scale of appropriateness and character our fault in this country is the reverse. The small Carnegie library has more features of importance than the British Museum, and the provincial town-hall has all the features of Greenwich Hospital, Whitehall, and Hampton Court combined in one.

There is no doubt we are at present very uncertain in our use and application of statuary and sculpture in the town. We appear to have no definite idea of the part which sculpture should be made to play. Our system in this country seems to be to erect wherever possible portrait statues of great men. So far as I know, this is quite a modern idea. I stand to be corrected, but I feel very strongly that the æsthetic value of a piece of sculpture is the only value it possesses which is of any worth. Its æsthetic value is proportionate to the power it can exert in arousing abstract feeling, and not concrete ideas in the crowd. I feel that the portrait statue as such is best consigned to the gallery. I feel that the right sort of sculpture to be placed in the city and amidst the crowd is such as tells an abstract tale—a figure of Liberty, Maternity, Justice, Peace, War, or some such symbolic subject inspiring to civic and national pride.

The finest type of sculpture is that which is purely allegorical, which stands simply for the poetry of nature and of human life. This is misplaced midst the busy throng. It should be reserved for the quiet corner and for the park. Again, the present lamp-standard fails in endeavouring to combine the requirements of wrought and cast iron. We need to study the wonderful candelabra of ancient Rome—and here again let me direct your attention to the lamp-standards that have been designed by the late Charles F. McKim.

Mr. John Belcher, R.A., observed that the Professor evidently did not agree with Mr. Burns that English architects were making satisfactory progress. He appeared to take the opposite view. Climate, in his (Mr. Belcher's) opinion, was one of the chief causes. If Wren's plan for the re-building of London had been carried out, we should have been able to take rank with the foremost cities of the world.

Mr. S. Bylander contributed a few remarks as an engineer, and Mr. David Antom and M. Augustin Rey also spoke.

On Wednesday afternoon two papers were read in the East Gallery, one on "Greater London," by Mr. G. L. Pepler, F.S.I., the other, "The Restraint of Advertising," by Mr. Richardson Evans, M.A.

THE CONFERENCE BANQUET.

The Conference Banquet was held at the Hotel Cecil on Wednesday evening. About 400 were present, Mr. Leonard Stokes occupying the chair, with Mr. John Burns on his right and Lord Redesdale on his left.

After the loyal toasts, Mr. John Burns proposed "The Royal Institute of British Architects and the Town-Planning Conference," to which the president responded. Mr. Burns said it was twenty-four years since he first came in contact with the president, then possessed of a wand and doing duty as a special constable! It was in a crowd and in a square (which should be nameless) having a great picture gallery on the north side. He had been lured there by no less a person than William Morris, and John Ruskin had been so much impressed that he had come forward as a witness for both of them! Even then he was mapping out, in imagination, the new processional road. Turning to the immediate question under notice, Mr. Burns said they now had 75 per cent. of the people living in urban communities, as against 25 to 30 per cent. a quarter of a century ago. This meant the provision of many schemes to meet the altered conditions, and architects would be increasingly called upon to devise the means of carrying out these schemes. On that account, if on no other, architects should come down from the pedestal they had occupied too long, and should mix more freely, and interest themselves more directly, with the public who were their paymasters. Modesty was only for those who had no beauty. Architects, too, had a great responsibility towards the great army of men who executed their works. In London there were 150,000 workers in the building trades, and, in the absence of the old apprenticeship system, they should do all they could to maintain a high level of achievement. Speaking of town planning, he referred to Wren's project for laying out London after the fire, and while deploring the shortsightedness of the Bumbles of that time who had not seized this magnificent opportunity, he incidentally mentioned that Wren had added a note to the effect that all "churchyards, gardens and unnecessary vacuities" were to be placed outside the town—a point which we, at least, had since improved upon. Wren declared, however, that all his buildings were to have a strip of ground in front and at the rear equal to the length of the facade, and that provision had resulted in a most excellent setting, as might be seen, for example, at Greenwich. Referring to the projected St. Paul's Bridge, Mr. Burns said that if carried out as proposed there would be four bridges within only 800 yards of river frontage. He suggested that Southwark Bridge and Cannon Street Railway Bridge should be pulled down, and that there should be one great bridge 100ft. to 120ft. wide—something on the lines of the Pont Alexander III. in Paris. In any event, at the present juncture he counselled a further intimate conference between the City Corporation and the London County Council, and expressed the hope that the advice of the Royal Institute and of other competent bodies should be taken as to where, when, and how the bridge should be erected. He also suggested that on the south side of Westminster Bridge, opposite St. Thomas's Hospital, a monument to Florence Nightingdale should be erected, balancing that of Boadicea on the north side. In conclusion he paid a tribute to Mr. J. W. Simpson and to all who had worked so assiduously to bring about the great success of the Conference and of the exhibition held in connection with it.

The toast of "Art, Literature, and Science" was proposed by Lord Redesdale, responded to by Sir Lawrence Alma-Tadema, Mr. Sidney Colvin, and Mr. Leslie Vigers; and the toast of "The Guests" was proposed by Sir Aston Webb and responded to by Mr. D. H. Burnham (Chicago), Professor Eberstadt (Berlin), and M. Louis Bonnier (Paris).

THE CITY DEVELOPMENT PLAN.

By Raymond Unwin.

(Read Thursday morning, October 13.)

Mr. John Burns's Town Planning Act has wisely concentrated the attention of town planners in England mainly on the development of the still unbuilt-on areas round the existing towns where the greatest damage is now taking place. We must, however, not suppose that we can consider the suburban areas by themselves. City planning really involves the whole problem of the proper organisation of city life. A very large proportion of the population of civilised countries will continue to live in, or immediately about, great city centres. We need to bring into our city life that guiding oversight and direction in making the best of the facilities which its position affords, and that proper correlation of all the different parts which are found so essential in a great modern industrial concern. By securing a good city development plan each community can facilitate the growth and efficiency of those industries upon which its life depends, providing for their expansion where they will have the greatest convenience of rail and water carriage, power, heat, and light, in close touch with the many and varying requirements such as subsidiary small industries, warehouses, and so forth. Further, by the organisation of centres of education, by which the value of each school, museum, or library may be greatly increased, and by the proper provision for recreation in the distribution of parks and open spaces, and the right laying-out and control of the residential areas and their protection from the intrusion of objectionable industries, the greatest impetus may be given to the development of a race of citizens sound of body, intelligent of mind, and energetic of character.

In considering the general form which it is desirable that town development should take, two extremes may be mentioned. Either the town may extend in solid continuous rings, like the rising of flood-water in a shallow basin, or it may increase by the growth of numerous detached townlets spreading from some centre, such as an existing village or a railway station, on the outskirts of the town. By reserving an unbuilt-on zone round each of these townlets the garden city method of development would be largely attained. But the essential idea that after a certain size the development of a city should be by the formation of supplementary centres on the outskirts, and the recognition of the importance of securing that the indefinite expansion of these and the central town into closely built up areas should be checked, and that defining belts of park, woodland, or open country should be reserved, seems to me of the utmost importance. Many continental towns, when abandoning lines of fortification, have been wise enough to reserve such a belt. It is to be hoped that the city of Paris will be able to do the same.

Having determined, roughly, the character of the different areas around our town, and also the character of development which we should attempt, and the areas which should, as far as possible, be reserved for public open spaces and pleasure-grounds, the next step in preparing the city development plan will be to consider the highways required for convenient intercommunication between all these centres and the heart of the town itself or its industrial district, and also between these different centres themselves. Where a town has reached a certain size, generally speaking, the main flow and return of population will be inwards towards, and outwards from, the centre. If, however, the town has clearly marked industrial regions at any considerable distance from the centre, new directions will be given to this flow, particularly as affecting those areas occupied by the industrial classes, and, in addition to main roads leading out from the centre of the town in all directions, others should be planned giving direct access to great centres of employment, business centres, railway stations, and other similar places. We shall have to break away entirely from our own traditions in the matter of road-making.

Hitherto it has been the general custom in this country for our by-laws to fix one minimum width applicable to all new roads, and there has been a tendency on the part of the more enlightened municipalities in recent years to increase this minimum width from about 36 ft. up to about 50 ft. But, while either of these widths is ridiculously inadequate for the main thoroughfares in any large town, the greater of them at least is so excessive as a means of giving access to a group of houses that already the cost of these wider roads has become one of the causes tending to produce either the overcrowding of houses on the site or the creation of flat dwellings. If we are to carry out sensible town planning, we must accept at once the principle that roads should be of varying widths according to the purpose they are to fulfil. A properly finished carriage-drive, with a grass margin, even if provided with a simple kerb edging, including sewers and surface-water drains, will only cost from one-third to one-half as much as an ordinary 50 ft. by-law road such as is required in many districts. It is obvious that when attempting to reduce the number of houses built to the acre from forty or fifty to something between twelve and twenty that this reduction in the cost of building roads is a vital consideration. But it is a still more important one when at the same time it is desired to increase the width of the main highways from 50ft. to 60, 80, or 100, according to circumstances, and in a few cases to greater widths still where the amount of traffic justifies the dividing up of the road into different tracks, for high-speed and for local stopping traffic, with perhaps a wide grass margin to carry the tramway lines—an arrangement which reduces the cost of laying and greatly deadens the noise of the tramway, and converts these tracks from a nuisance into something of a street decoration. If at each side of these grass tracks trees are so planted as to mask the standards carrying the overhead wires, even this disfigurement of the street may be greatly minimised. Between these two extremes that we have dwelt on—the 20 ft. carriage drive and the 150 ft. multiple-track highway—there will be room for roads of almost every width and the greatest variety of character and treatment.

Having settled the purpose of different areas, determined the general character of growth and the approximate directions desirable for main and subsidiary highways, the town planner finds himself with the following component parts out of which to make his design—namely, the main centre-point or climax dominating the whole, the secondary centres in definite proportion and relation to it, and the main highways linking them up, the whole giving the bones or main framework of the design. Looking at some, at any rate, of the plans which have been prepared for the further development of American cities, one is led to think that the fundamental wrongness of this type of plan has not yet been recognised, as apparently they are but reversing the order that has to be adopted in the town-improvement scheme, and are try to superimpose on a framework of main highways another rigid framework of minor roads, which, though it may have some distant relation to the whole, bears no proper relation or proportion to the spaces resulting from the character of the main framework. That the minor roads in the north-west corner of a town should be parallel with the minor roads in the south-east corner, though it may look pretty on the plan, is a matter having in reality no value whatever; but that the minor roads should have a definite relationship to the secondary or main roads of the framework to which they are adjacent is essential as much for convenience and economy as for securing a satisfactory artistic treatment of the street. No system cuts up the land into more awkward corners, or more thoroughly destroys the street façades, than that which consists of a framework of diagonal highways laid upon a rigid gridiron system of minor roads, and from no system do such unsatisfactory road junctions result. In town planning it is essential to avoid being carried away by the mere pattern of lines on paper. Order, definiteness of design, these must be; but there must first be grasped an understanding of the points where the order is important and will tell, and of those where it matters little. In considering, therefore, the framework, which in a modern town can seldom take any exact figure, it matters little whether the triangular spaces between the roads all match one another, but it matters greatly whether the roads meeting at the points of junction are so related to each other that the vista can, if desired be closed by a well-placed building, or a *place* of successful shape be created. I think we may well bear in mind that size, by itself, is a somewhat unsatisfying quality, and in studying German work for the sake of good proportion between the detached parts, and the careful adjustment to the nature of the site and the fine appreciation of the possibility of beautiful grouping of buildings, we may well, by study of both Renaissance planning and French work, learn to appreciate the importance of maintaining certain broad lines of design and of giving to our town a definite and shapely framework—characteristics which are lacking in much German town planning, where the designer seems to have neglected the greater thing in undue concentration on the picturesque treatment of minor details.

In taking a general survey of town-planning work, such as may be done by the aid of the Exhibition now open, one cannot but feel that the different schools of planners have been hampered by theories of formalism and informalism which have become prejudices without the real conditions of either being entirely grasped. Generally in town planning there can be no such thing as complete formality such as you may show on a paper design. I believe that it is only when we have got beyond these prejudices in favour of so-called formal and regular work, and feel free to make use of other forms, recognising at once the naturalness of formality in design and the importance of sacrificing mere formality on paper, that we can seize upon the opportunities which many undulating sites afford for crowning the heights with clusters of buildings or emphasising the lines of our river fronts with dignified façades.

CITY DEVELOPMENT.

By W. E. Riley, F.R.I.B.A., M.Inst.C.E., Superintending Architect of Metropolitan Buildings, and Architect of the London County Council.

(Read Thursday morning, October 13*)*

A map has been prepared indicating roads 60 feet and upwards in width, and this clearly shows that London is still without any *motif* of systematic development or without proper street facilities for communication with suburban, or rather extra-urban, districts. Paris has forty-two roads radiating into the surrounding country; London, with a population twice as large, has only twenty. As regards width of streets, it is apparent that comparatively new streets and those recently widened are becoming daily more unequal to the increased demands of traffic, and that the congestion is as serious as ever. Paris has 102 miles of streets 98 feet or more wide; London has only 8½ miles in all of streets of that width.

The fundamental defect in London development has undoubtedly been that no practical attempt has been made to control extension on any systematic plan. The initial development of any city must be dependent on the topographical features of its size, and in many ancient and some modern cities military necessities have been a further prominent consideration. The direction of the main streets of London from east to west was originally largely determined by its construction on a navigable river and by the existence of rising ground on either side. Habitations naturally extended along the banks of the Thames, and if the same attention to military considerations had been necessary in London as in Paris, Strasburg, and other Continental cities, London might now be in possession of a "Ring" to rival that of Vienna, with focal streets radiating regularly to the suburbs.

The unsystematic extension of London cannot be ascribed to any lack of theoretical appreciation of the importance of the question. Select Committees and Royal Commissions have met and reported with frequency and perseverance during the last century, and to go further back there were the far-seeing proposals of Evelyn and Wren at the time when 436 acres of the City were cleared by fire. Such chances seldom occur, and one cannot help contrasting the supineness of 1666 with the recent public-spirited action of some of the citizens of San Francisco. Had Wren's scheme been carried out, it is highly probable that the Kingsway improvement would have been unnecessary.

In Manchester, Newcastle, Leicester, and other towns convenient accesses by cross streets must be provided at intervals of 100 to 200 yards; in London there is nothing in the building law to prevent the erection of the interminable unbroken rows of houses, whose monotony is almost as offensive as their public inconvenience. It is encouraging to find instances in London where private enterprise has been inspired by more dignified aims. The lay-out of parts of Camden Town provides an example in which the main lines of communication such as Camden Road, were made 60 feet wide, the principal tributaries being 50 feet wide, and the streets of less importance 40 feet. An endeavour was made to depart from the orthodox gridiron plan, and crescents with open spaces were formed, as well as garden squares, such as Camden Square, Rochester Terrace, etc., well planted with trees and affording not only agreeable relief to the surrounding inhabitants, but valuable air-space.

The garden squares and open spaces of London, which in their variety and extent are unsurpassed, may be considered to be the most satisfactory feature of its development. In Greater London the Government maintains 5,985 acres, and it is difficult to appreciate what London would be without the amenities of St. James's Park, Kensington Gardens, and Greenwich Park in the central area, and Bushey Park and Hampton Court Gardens on the outskirts. There are 114 open spaces under the control of the London County Council, with an area of 5,100 acres. The City Corporation maintains nearly 6,500 acres, including such excellent and popular air-spaces as Epping Forest, Burnham Beeches, and Highgate Woods, and the metropolitan borough councils control 158 open spaces, having an area of 266 acres. In this connection the work of the local authorities in rescuing disused burial-grounds from a condition of neglect and converting them into bright and restful retreats deserves mention, and is beyond all praise. Further, there are 437 private squares and enclosures, with an approximate area of 447 acres. Such cases as Mecklenburgh Square and Brunswick Square, on either side of the Foundling Hospital, and many others, are of great value to London, and it is to be hoped they may long be preserved. There is, of course, the most commendable work to the same end undertaken by private associations. This congregation of open spaces is a feature of which any city might be proud, and proves that, whatever deficiencies exist in other directions, the definite function of open spaces has been recognised in London to an extent which places it beyond comparison.

The Town Planning Act will have accomplished some good if it only forces on the public notice the urgency of the problem as to whether this great but unavoidable development is to proceed on rational lines, with due forethought and provision for the inevitable necessities of the future, or whether London is to gradually expand in the same unregulated and incoherent manner as in the past.

The most pressing need is to establish the main arterial communications on a large and courageous scale to provide for the inevitable expansion of the next one or two decades, so that the necessary outlets into the country may not be stifled or obstructed, and that the gradual extension which is now proceeding may adapt itself to the lines laid down.

A Joint Select Committee of both Houses of Parliament in 1901 suggested the desirability of some central control of all projects affecting the relief and distribution of traffic in or near London, and the Royal Commission on London Traffic in 1905 emphasised the same point. This part of the question is, however, one of policy with which this paper is not concerned, and in which the author has no desire to intervene; but attention should be drawn to the seriousness of employing anything but unified treatment in dealing with so great an issue.

RECENT PROGRESS IN GERMAN TOWN PLANNING.

By Herr Dr. Stubben.

(Read on Thursday morning, October 13.*)*

Paris used to be our first teacher. The symmetrical French style was predominant in Germany until the eighties, when architects began to abandon straight lines and the uniform style in favour of variety and curved forms, and began to study the mediæval German towns more than they had ever done before. This fondness of curved forms naturally led to many eccentricities. To-day we have come back to a more sober conception, and we estimate the curved and straight lines, as well as the symmetrical and the unsymmetrical, at their real value. The author, comparing his illustrations, pointed out the influence of the old towns upon the two new streets in the plan of the modern towns, viz., the Arnulfstrasse in Munich by Theod. Fischer, and the Fischereistrasse by Dr. Stübben himself.

He showed illustrations of a few modern schemes for the construction or extensions of new districts which have been proposed by himself and by other German architects, and to illustrate more in detail the present position of the town-planning question in Germany. These illustrations included the fishery quarter in Brünn, which shows the street just mentioned as the central longitudinal artery, a church erected at the side, with a square in front and behind at the end of the High Street, several other open and ornamental grounds (the latter being enclosed, if possible), long blocks of buildings, and slightly raised streets.

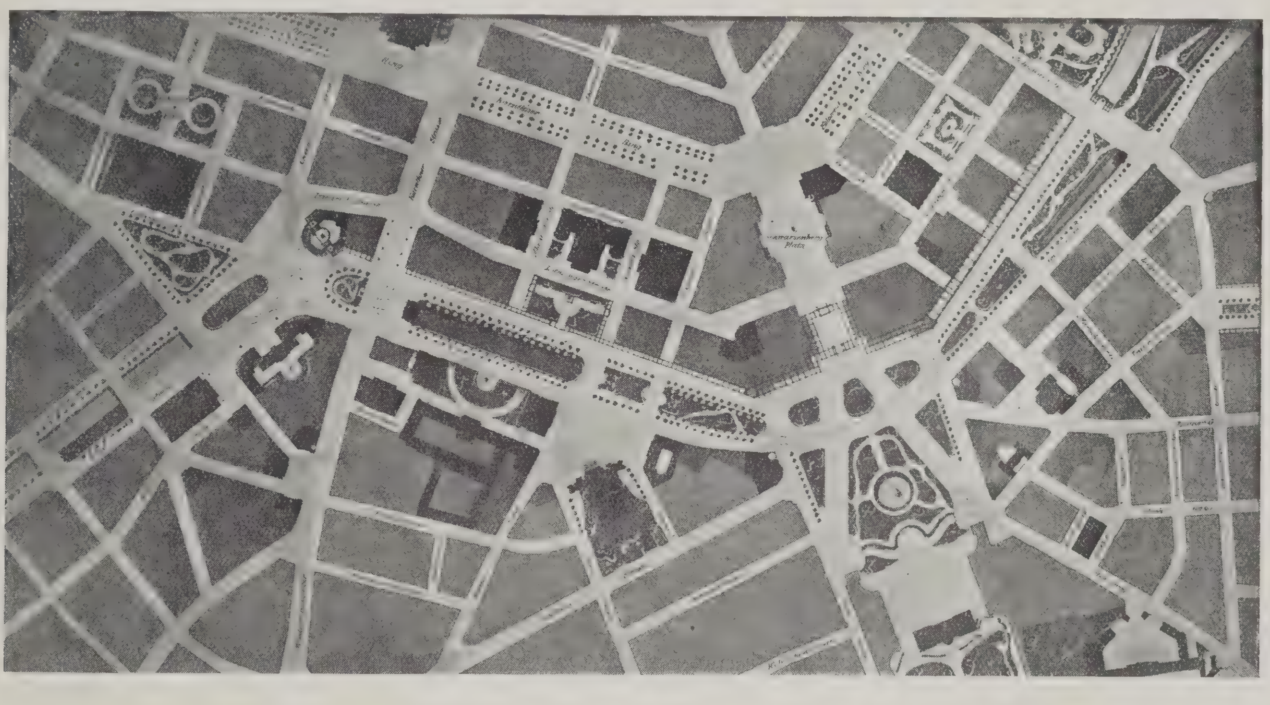
In the north-western extension of the town of Königsberg, the irregularly formed High Street, which is under provincial control, has a width of from 30 to 70 metres, and runs along the old fortification moat, thus providing the best possible building ground for the blocks of houses. The other streets are partly curved and partly rectilinear, according to the requirements of the buildings. The old tower (the Wrangelturm), surrounded by water, has been retained. Suitable building sites have been proposed for the church and two public buildings.

The new station quarter at Landshut shows a slightly curved High Street of varying width and with buildings.

The building scheme for a new quarter in Berlin provides for streets of a minimum width of 22 metres, with five-storeyed buildings of an authorised height of 22 metres. The diagonal, from the left, at the top, to the right, at the bottom, represents the High Street. It shows a slight curve and a considerable widening in the centre of its length, where it is convexedly drawn. The other streets are curved or straight, according to the local requirements. Two new suburbs of Posen and Neustrelitz have also been built, straight lines having been abandoned for curves.

The author showed an illustration of his scheme for the reconstruction of the old town of Louvain in Belgium. The quarter it is intended to transform includes the old slaughter-house and a large number of old dwelling-houses, which have hitherto been occupied by small tradesmen and artisans connected with the slaughter-house. Most of these buildings are in a most dilapidated and insanitary condition. The municipal authorities have decided to restore this old quarter, and at the same time to clear to a certain extent the approaches to the St. Pierre Cathedral.

A further illustration showed a new town to be constructed, called St. Anne, on the banks of the Schelde, opposite Antwerp. The construction of this town is practicable owing to the fact that an area of nearly 1,000 square hectares has been raised by the gravel dredged from the river-bed of the Schelde. The sketch included an industrial quarter adjoining the railway and the harbour, a park on a piece of ground torn up to a depth of 11 metres by the bursting of a dam, and, finally, the future centre of the new town. The Gand Road, pointing straight to the spire of the Antwerp Cathedral and the Avenue de la Gare, 800 metres from the Schelde, form two main and straight lines in the new city.



PLAN OF A PORTION OF VIENNA, SHOWING LAY-OUT OF A NEW STREET.
(Town Planning Exhibition.)
A few years ago a competition was held for the plan of a new street to be formed through the centre of Vienna. The above is a portion of the accepted scheme.

Two underground tunnels below the Schelde, both above and below, are to connect the new town with the metropolis on the other side of the river. These tunnels are furnished with lifts for vehicles and pedestrians, and are connected with the station by underground tramways. Between the Avenue de la Gare and the lift of the higher tunnel, a district for small shops, with unsymmetrical streets, a church, and an open space, will be provided. It is proposed to preserve, between the Avenue de la Gare and the Gand Road, a portion of the old village and of the old Fort de la Tête de Flandre, which will be transformed into recreation grounds. North of the Gand Road, workmen's dwellings and houses for the middle class and shops will be built round the central square, where the town hall is to be erected. Exactly opposite the Antwerp Cathedral, an ornamental square, with belvedere, has been included in the scheme, and round it will be built a theatre, casino, and other public buildings. From this monumental square, a street with arcades will lead to the principal church, which stands behind some grounds with plantations. The northern part of the new town, facing the industrial quarter referred to, is intended for the upper classes, and will consist of villas and private mansions. The centre of the new town, as above described, would be enclosed by a ring of from 40 to 60 metres, for an underground tram-line. The suburban districts would be constructed afterwards according to requirements.

Other exhibits were—a fine plan of the Colony of Hellerau, near Dresden, drawn by Riemerschmied, and in beautiful harmony with the hillside. The plan of a garden city near Nürnberg, by the same architect, containing an imposing central square for the erection of public and other important buildings; the charming artisans' settlement of Merck, near Darmstadt, planned out by Putzer, where the High Street shows very fine irregular outlines, and consequently many beautiful street views; the plan of the "Herdweg" quarter, in Darmstadt, is also the work of Putzer. The view shows, besides in the two above illustrations, the buildings erected on the "Mathild" Hill below, and the garden city of the "Hohlen Weg," designed by Buxbaum; two new quarters of the town of Essen, planned out by Schmidt, the artisans' colony, "Gottfried Wilhelm," at the top, and a residential district at the bottom by Holsterhausen; a bird's-eye view of the building plan for the quarter "am Bernewaldchen," also in Essen. These foundations, for which we are indebted to Architects Schmidt and Metzendorff, being amongst the best productions in recent German town planning; and a view of a new quarter of Charlottenburg, near Berlin, viz., the new "Lietzensee" quarter. The lake is partly surrounded by gardens and promenades open all round, and partly surrounded by dwelling-houses with several storeys, which occupy a splendid position.

THE GREATER BERLIN COMPETITION.

By Prof. Dr. Rud. Eberstadt.

(Read Thursday morning, October 13.)

On Thursday morning Professor Dr. Rud. Eberstadt delivered a paper entitled "The Greater Berlin Competition." He said the task of town planning was international. It was no exaggeration to say that modern town-planning had originated in England, by the necessity for dealing with the problem in large industrial communities. Lately Englishmen had visited Germany to study town-planning and town building. They were shown the fine thoroughfares and buildings, but the barrack-like tenement was concealed from view. They in Germany aimed at substituting for these tenements the English cottage—the individual home. Curiously enough the English were foremost in their admiration for German street planning, when they in Germany wished to do away with it. The reasons for a real plan in both countries were identical; and like problems had to be dealt with. These he would define under five heads:—(1) Congestion of street traffic; (2) means of transport to the central parts; (3) the planning of parks, gardens, and open spaces; (4) the artistic development of towns, the planning of monuments and buildings; (5) the necessity for system in town extension, and method in housing the people. The aim of their great mediæval plans, namely, the arrangement of imposing entrances to towns, was preserved in the plan of Berlin, where at the railway station, from which the first view of a city was usually obtained, fine buildings were concentrated, and the whole made an important centre. In their modern town plans the ideal was the detached house without having the cottage proper. Land in Germany was from eight to tenfold more expensive than in England. In Berlin, from £12,000 to £16,000 per acre was quite commonly obtained. It was proposed to abolish the green belt type of plan and to substitute spaces systematically converging to the centre. In regard to general planning the proposal was to take a large unit of land of regular shape, and to erect on the outside large five storey buildings, retaining the area within for smaller houses grouped round a public garden.

PUBLIC PARKS AND GARDENS: THEIR DESIGN AND EQUIPMENT.

By Thomas H. Mawson, Hon. A.R.I.B.A., Lecturer on Landscape Design, School of Civic Design, Liverpool University.

(Read Thursday afternoon, October 13.)

Founders of modern industrial villages believe that parks and æsthetic amenities are necessary for the physique and working power of the worker and his progeny, and put their theory into practice. The provision of parks and open spaces is not primarily an æsthetic but a practical question.

There are two principles on which park schemes may be developed. The first is known as the belt, the other as the radial plan. Vienna may be cited as the most notable city, which, after laying out its splendid Ringstrasse, is now securing outlying belts, which will eventually, I suppose, entirely encircle the city. Many other cities have either secured the surrounding and now obsolete fortifications or are negotiating for them. Here the "belt" would seem to be the simplest principle upon which to work.

All town-planners who have seriously studied the development of park schemes are agreed that the radial principle is the best, as it ensures an unbroken current of fresh air into the city, takes the least land where it is most expensive and the most on the agricultural fringe; but, most important of all, it ensures an expanding proportion of park as the population increases.

Apart from playing-fields, which should, of course, be as level as possible, there are two classes of land which it is most desirable to bring into our park scheme, viz., river banks, low-lying swampy meadows, and the hills for prospect. Fortunately these are invariably the least expensive to acquire. In the vicinity of growing cities ample tracts of land ought to be reserved, even though no connected scheme be possible which can ultimately convert them into parks. Smaller spaces for playgrounds and town gardens, varying in extent to suit the needs of the locality in which they are placed, are also essential. Surely we ought to have a civic law or policy, as in certain American cities, in Missouri and Massachusetts to wit, to ensure that the land to be devoted to building shall not outrun in fixed proportions the acreage of reservation for parks.

As improving examples of generous and enlightened cities to which I could point I would choose Boston and Chicago. Boston's park system is already famous, being the most complete of any in America. It includes the greatest civic park in the world, that of the Blue Hills, third only to the great Yosemite and Niagara Falls Parks, which are deservedly described as international. Its several parks comprise all the various characteristics of pleasing scenery that Nature can show—forest, seashore, rocky, and pastoral hills, and the valleys and banks of four rivers. Within eleven miles of Beacon Hill there are 15,000 acres of parks and twenty-five miles of parkways.

In this country we have overlooked the fact that parks and gardens should be planned in relation to their surroundings. Whatever may be said of the aims of landscape gardening, landscape architecture must be honestly inventive. It is essential that a clear knowledge should therefore be gained of the objective to be attained, the *motif* to be expressed, the local requirements, and the necessities of the site. Here a knowledge of traditional design is needed.

A cause of failure has been the introduction of all manner of cheap cast-iron erections. A serious cause of failure results from the lack of practical knowledge relating to the planting of parks and gardens. Instead of the artist-gardener, with a wide knowledge of trees and shrubs, especially of native trees, the work is frequently deputed to the practical gardener who loves novelty, variety, and rarity for their own sake.

In comparing the differences in planning English and Continental parks, it must be remembered that the conditions in this country are peculiarly local and national. Being a sporting and yet intensely economical people, we seldom lay out a park purely as an ornamental feature, but design it upon a revenue-producing basis. We construct a lake and secure a high rental for the right of letting out boats and skating; we lay out bowling-greens and charge rentals for lockers; tennis lawns, and charge for the use of nets; we erect a bandstand, and draw revenue from the hire of chairs. Utility takes the first place and ornament the second, whereas on the Continent the order is reversed. The second point of difference lies in the fact that whilst with us green lawns are the determining artistic factor, on the Continent it is shady trees spinney woods, or woodlands. This fact should be kept strictly in mind when comparing ground plans apart from perspective views. The many curved lines of walks starting from a single centre, and all curving in the same direction, but widening out as they get further from the centre (a treatment common in the French landscape parks), are quite possible and delightful when passing through a spinney wood, but impracticable when the paths are separated only by grass. Trees form a barrier between the walks, whereas grass would be disregarded.

The author then described and illustrated three examples of park design which, taken together, cover a wide field of executive design, namely, a marine garden at Southport, a small recreation ground at Cleethorpes, Lincolnshire, and Pittencrieff Park, Dunfermline. The author also showed and described a scheme for the improvement of Greenwich Park and Blackheath, and he suggested that the Royal Institute of British Architects should themselves so far recognise the claims of Landscape Architecture as to select some such subject for the Soane Medallion award.

THE ARCHITECT AND CITY ORNAMENTATION.

By E. A. Rickards, F.R.I.B.A.

(Read Thursday afternoon, October 13.)

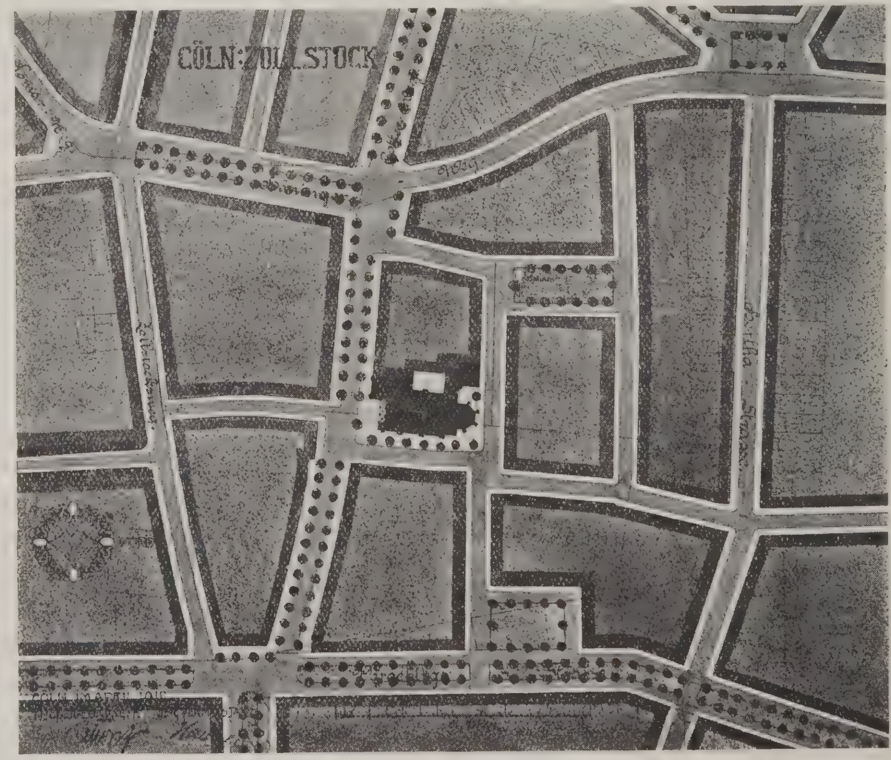
By the ornamentation of the city I really include all that may serve as amenities in any form to the life of the people. This comprises the exploiting of the art of sculpture in its many forms, from the absolutely realistic or fantastic expression of the most individual artist to the sculpture which is a leavening of the severer and dominating forms of some monument on a larger scale. There is place for all. Again, the romance with which the lighting of the city might be invested, in addition to its purely utilitarian office, with all the distinction between the severity and soberness and permanent effect and the prodigal fancy of the illumination of the *festa* —such we have witnessed this year in Brussels and can still remember of the Paris Exhibition of 1900. One thinks also of the many effects obtainable with the opposite element of water, as material, whether in reflecting pools and placid stretches of calm suggestion of repose—as, for example, the Memorial Garden to the Empress Elizabeth and the other graceful enclosures of this element in Vienna; or actively displayed, and in the form of its control taking its place in the vista, or in a smaller way filling out the line of the sculptured fountain—a link between the inanimate conception of the artist and the life around.

Even the display of flowers and plants, and the touch of almost feminine grace and holiday lightness they impart, comes under the heading of architectural ornamentation when managed with such skill as the Viennese have shown in the succession of the graceful lamp-standards down the centre of the Ringstrasse, with the metal brackets, attached *à fleur de roses*, and the temporary display of bunting—witness the example again of Brussels this year. One can only shudder at the recollection of our own city wardrobe, rummaged out on the occasion of each Guildhall procession, in the face of such consummate skill in handling light material.

Intelligent control, a jurisdiction that the smallest detail cannot evade, must be exercised over all these decorations and amenities of our town system; and this, so far, has never existed in any municipality in England.

Give this ideal field of operation all the solid foundations of a town scheme with every possibility of artistic embellishment provided for: who is to be entrusted with the design and control of all these accessories to the dominating and enclosing general masses?

It should be the duty of those in authority to seek out special ability, and rise superior to the hitherto prevailing superstition that such details of ornamentation are without the province of the architectural artist. We have seen how in the training of the French architect a complete study of all those details is included, and in the highly imaginative reconstruction of, for instance, Prix de Rome students how large a part is taken up by the life and general attributes of the period in question, in addition to the restoration of the chief monuments and buildings themselves. Admitting that the artistic education of the English architect is far behind that of his French neighbour, the parallel is worth drawing, for his qualifications for assisting in the general furnishing of the streets are surely greater than those where training has been almost entirely confined to the studio and what can be executed by themselves in such a space. Yet it cannot be denied that at the present time there exists in England a privileged class who have almost an entire monopoly of the design of any street decoration, such as monuments, memorial fountains, etc., or indeed any decoration not an integral portion of a building, and this by virtue only of their eminence in an altogether different branch of art. Even in those rare instances of collaboration we can think of, the architectural aid has been merely utilised



The breaking of the frontage lines is a feature of the above plan.

PLAN FOR THE DEVELOPMENT OF A PORTION OF COLOGNE. BY DR. REHORST.

(Town Planning Exhibition.)

in an attempt to render coherent an altogether inarticulate speech, if one can use the simile.

The architectural details of the English sculptor when he attempts them are individual at any cost, and seem designed to destroy any link with their environments.

The general movement and interest in the art of town arrangement and design which has brought us together has enlarged the horizon of the English architect, but it is to be hoped that it will quicken his nearer vision and perceptions, and give him the confidence to assert his interest in the design of much of the detail that is so necessary to make an artistic whole and his necessity to the community for such purposes.

With judicious arrangement it would be possible to accommodate the most plastic forms of sculptural art, and, indeed, these should be welcomed in their fit positions, where they would be no menace to the definite style of adjacent work; the sculptor, after all, requires freedom of expression, and should be provided for if we are to benefit by his art.

Again, some buildings, by their purpose of design, require the reflection of their style in the street accessories of their neighbourhood, and this should secure the employment of the same artist as much as if they formed part of the main structure itself, and thus characterise the immediate surroundings and enhance the central object in effect. We should thus be spared the effect of conflicting elements, as when a monument is raised against the central feature or entrance, for example, of a large building—a feature applied against a feature free, one obscuring the value of the other. This, of course, is continually happening when authority is subdivided.

With regard to the temporary decorations of the city it will readily be conceded that unless they are to obscure the design of permanent structures and arrangement they should be subservient to their lines, or at least respond to the anatomy of the figures they are to adorn. Though the light and perishable material might require the special knowledge and executive facility of the special craft of illumination or drapery or bunting, yet the architect with his sense of balance and knowledge of the salient forms of the subject to be dressed, should be an invaluable and, in fact, the chief director. When one thinks of the great periods of the past, and the general reflection of architectural forms in almost every art expression and in almost all mediums, one feels that such statements as mine are the merest platitudes. But in this more restless age, when individualism is so continually asserting itself for the worst, there is need of direction and constant surveillance, and it is our duty to the State to see that we demand, nay, enforce it.

Discussion.

Sir James Lemon said that it would be advisable to consider the practical difficulty of acquiring land for the purpose of town-planning and development schemes. Considerable impetus would be given to the movement if owners of land would forgo in the public interest some proportion of the value of their property, and accept some more reasonable payment. The provision of open spaces should be made compulsory. Local authorities already had the power to clear slum areas, so in this sense the Town Planning Act was unnecessary. The Act, therefore, would operate before development; and in this sense it reminded him of the truism that prevention was better than cure.

Mr. H. B. Grubb commented upon the extraordinary hesitation on the part of public bodies to provide money for necessary improvements.

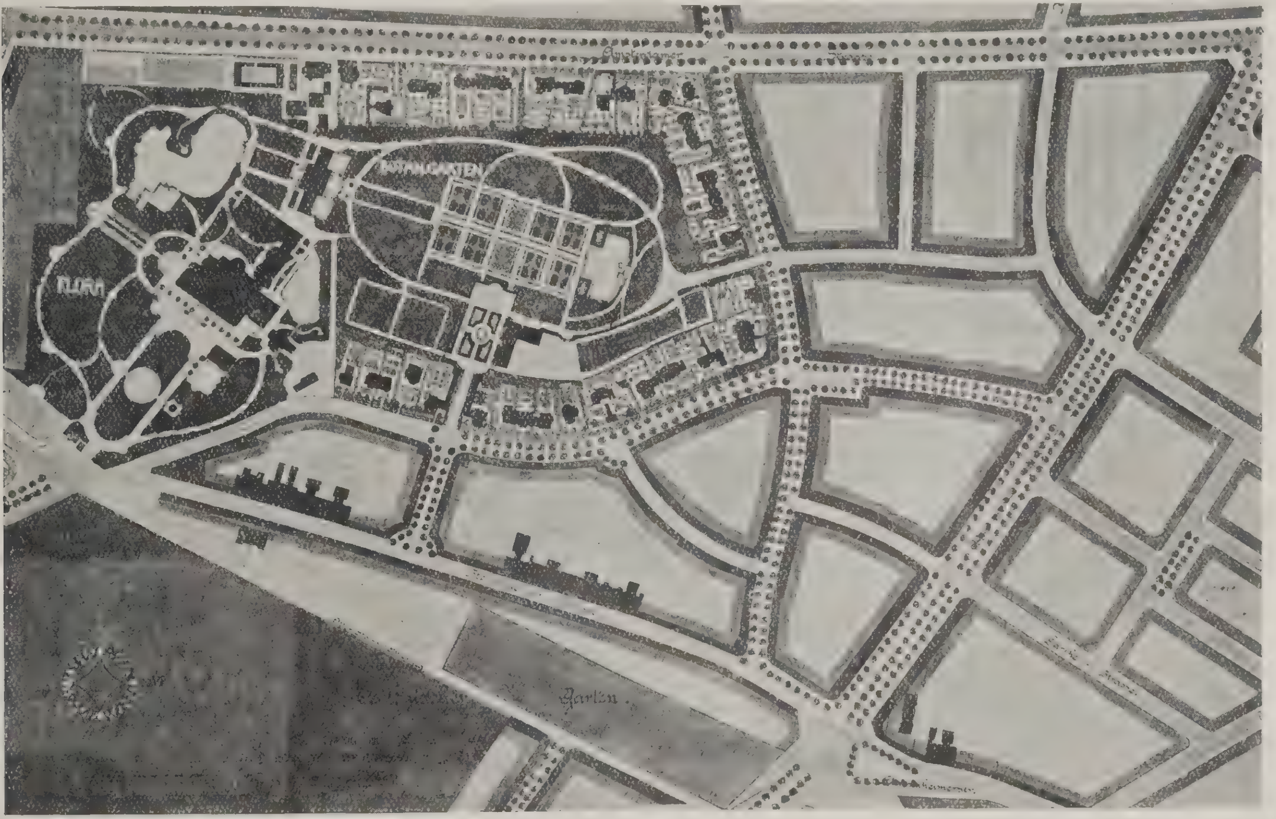
Mr. E. P. Warren observed that gardens and parks in London were rendered unnecessarily dreary by the furniture and accessories they contained. Asphalt paths, borderings, ugly railings, and seats, and dreary lamp-posts all tended to depress the spirits. In France how differently these matters were treated. In front of railway stations it was quite usual to find a wide convenient open space, frequently in the form of a park or garden. In England, however, railway stations were regarded simply as a means of getting somewhere else.

Professor Adshead said that under the Town Planning Act a large number of open spaces would have to be dealt with. The town garden would be one of the principal problems to attack. But who was to be responsible for the design? The country was not in a prepared state to carry out big town decorative schemes. Architects did not sufficiently study the surroundings of their buildings. If they trained students in the schools to this large idea—on the lines of the Ecole des Beaux-Arts, for instance—they might hope to turn out capable architects. In the Place de la Concorde there were no trees, and the effect was exceedingly fine. It would be well to bear in mind this fact, and to be more careful in the placing of trees. Too many trees, perhaps blocking up and so spoiling some fine vista, were worse than no trees at all.

M. Augustin Rey, having addressed the meeting in his native tongue,

Mr. C. T. Jenkins protested against the injury to natural beauties by the formal laying out of parks and gardens.

Mr. Robert M. Ellis, referring to Col. Plunkett's paper, said that the River Wandle, which emptied itself into the Thames at Wandsworth was threatened with total ruin as a thing of beauty. 25,000 gallons of water were taken from it daily, but still it struggled on, and was worthy of saving, for which purpose a scheme had been promulgated. A new spirit had to be inculcated into landowners, who had got to realise that land was to some extent the heritage of the people.



SCHEME FOR THE LAY-OUT OF AREA AROUND THE BOTANICAL GARDENS, COLOGNE, BY DR. REHORST
(Town Planning Exhibition.)

THE CITY OF THE FUTURE—THE IMMEDIATE FUTURE IN ENGLAND.

By Professor C. H. Reilly, M.A.Cantab., F.R.I.B.A.

(Read Friday morning, October 14.)

If suppression of individual idiosyncrasies for the general good may be taken as the key-note of our new garden suburbs, and I think there is not much doubt about it, do the houses which are already being built in them properly express this idea? While admitting very readily that they are a long way ahead of the surrounding villadom, is it entirely appropriate that they should in the main be based upon the early mediæval type of cottage, with high-pitched roof and gables, with wood mullion windows (stone being, I suppose, too expensive), rather than on the later Georgian types, with flatter roofs and sash windows, which are found so sedately set round many an English village green, and so largely contributing to its sober restful character? On practical grounds alone one would have thought that the greater window space, the square ceiled rooms clear from the roof, would have been more satisfactory, while the simpler shapes would have allowed for a higher standard of interior proportion and detail. But this is really part of the general question of the trend of our recent domestic architecture, which must be grasped and understood if we are to make deliberate progress. Our garden-suburb cottages are, especially at Hampstead, very good of their kind. The question to my mind is whether they, any more than our domestic architecture as a whole, are right in kind, whether they adequately express the best contemporary culture. And if they do not do this, how can they serve for any length of time the culture that is to come?

It is, therefore, worth while to consider shortly what we have been attempting to do of recent years in house building. Since the Gothic revival finally broke our classic tradition two main ideas seem to have inspired our house architects; one simple picturesqueness of outline derived from Gothic architecture, and the other, more difficult to define, might perhaps be termed an attempt to express domesticity. Feeling that the latter is our national characteristic we have striven, and I think with a certain amount of success, to make our houses what we call and feel to be "homelike." For this purpose we have naturally and rightly shunned any excess of external ornaments and dressings, and we have interested ourselves in texture and colour, in materials which weather well and quickly lose their sense of newness. But these are the accidentals of architecture rather than the essentials. To further the supposed ideal of the home we have indulged in a rough and affected simplicity of finish, making use of such archaic things as solid oak steps in our staircases and bare bricks or tiles in our fireplaces. But our Gothic inheritance of picturesqueness has prevented our desire for simplicity from taking the form of simple rooms simply put together. It has instead tempted us to all sorts of angular shapes and bay windows, so that our rooms, if rustic in materials and workmanship, have no real simplicity of form. So far, therefore, this striving after simplicity, this exaltation of the primitive cottage, is an affectation.

If, then, the house of the future suburb is on the one hand to express something of the new submission of the individual to the community, and on the other hand to answer to a more exacting and refined, if less sentimental taste, it is obvious some new departure must be made. I fancy in our desire for more reticent exteriors we should revert to flatter roofs with fewer gables, and seek our interest in such delicacies as trellis porches and verandahs, and windows carefully divided with thinner bars and marginal lights pointing to a higher standard of interior finish. Expression is most naturally given to such a house by a large swept-out cornice, adding interest and shadow to what otherwise might seem a bald reserve.

With regard to the central portion of the city of the immediate future, its administrative and business centres, it is probable that these parts will tend in their architectural character to become more and more cosmopolitan. Already a block of offices, a large hotel or club, may be designed in Paris for London, or vice versa. Some of the most recent and best French and American architecture is to be seen in our own streets, which assimilate it easily and well. But this only means that each nation is seeking its inspirations at the same classic source. The simple elements of classical planning allow for all possible monumental effects, and in the future we may believe they will be increasingly employed. With this taking place, and with the civil architecture of all towns becoming more cosmopolitan in character, we shall find the tendency to revert to bygone combinations of classic forms less and less frequent. To erect to-day a pure Georgian or Wren building in the central portion of a town is to effect an anachronism only less glaring than to put up a François Premier, Elizabethan, or Gothic building. Colour has a special importance, for if the buildings and streets in all big towns are approximating to a common ideal there must nevertheless always be a local and sympathetic colour arising from the nature of the site, of the atmosphere, and of the materials available. To introduce red bricks and tiles into an esssentially grey town like Edinburgh, or into a white town like Paris, is to do an injury to the whole, which the town as a whole should resent. Against such intrusions, therefore, the town should protect itself. A further and similar function in the immediate future will be for the town to protect and cherish the architectural character of its different parts.

THE CITY OF THE FUTURE UNDER A DEMOCRATIC GOVERNMENT.

By D. H. Burnham.

(Read Friday morning, October 14.)

On Friday morning Mr. D. H. Burnham, of Chicago, delivered a paper on the above subject. Having briefly summarised the sociological conditions of the United States, the lecturer observed that Spencer, when visiting America about thirty years ago, said, at a complimentary dinner given in New York, that the paramount question of their race was not one of education, but of character. Macaulay had written, with respect to America, "The Goths and vandals came from without, but yours will come from within." In America, secrecy of Governmental policy was impossible; the intentions of politicians were public property almost before they had taken definite shape in the brain. If the American democracy of the future desired to carry out a street plan, it would do so; but would there be the desire? Considerable impetus was given to town planning after the World's Fair held at Chicago ten years ago. Washington had at once learned the lesson that it taught, and almost immediately afterwards prepared a plan for the capital. To-day, every considerable town in the United States, of which there were something less than 1,000, had its town plan. Washington had devoted some years to the matter, and had spent 50,000 dollars. In two years 25,000 dollars had been spent for the purpose of planning in San Francisco, and in Chicago for the last four years 400,000 dollars had been absorbed, and the work was not yet complete. They had town-planning men in every city, who were invariably the ablest men in the community. Town planning in America was not in the hands of men who had time to waste. When men everywhere began to demand harmonious conditions of life, that state had been attained which in the individual would be termed manhood. What democracy demanded it would get. There was not one man in the room, Mr. Burnham continued, but who could prepare a plan for the improvement of London. But it would take the combined effort of all architects for many years to get their proposals carried into effect. If four hundred of their best men would mass together, they would resemble a Greek phalanx invincible against any number of barbarians. When mankind demanded "delightfulness," and he used the word intentionally, meaning to include all the factors that went to make existence enjoyable, they would unquestionably get it. We were more dissatisfied with our conditions than our forefathers were with theirs, and yet our times were incomparably better than theirs. The geometric widening of knowledge brought desire, and desire action. The greatest that man could do was yet to come—or evolution was a myth.

Discussion.

Sir Richard Paget emphasised the importance of simplicity and economy in architecture of the future. Economy was an important element of beauty. There was no reason why a monument should not be combined with utility. The arch at the top of Constitution Hill contained a suite of residential chambers, and the new entrance to the Mall was utilised in a similar way. The skyscrapers of New York fulfilled an important object, and represented possibly the highest concentration of humanity upon a certain area of land. The greater the concentration the better and more convenient in some respects it became. If all the skyscrapers could be massed in one central space, Karnac would pale into insignificance.

Mr. Ebenezer Howard said the phenomenon of the 19th century was the migration of people from the country into the towns. The phenomenon of the 20th century would be the reversal of the process. The time was coming when the population would pour out of the cities. London was too large, and it should be their persistent endeavour to reduce the population by developing new areas.

Mr. Andrew T. Taylor, who attended the Conference on behalf of the L.C.C., assured the meeting of the good intentions of that body. The present time, in the speaker's opinion, was highly appropriate for the inauguration of town-planning schemes in the Colonies, especially in Canada. The ratepayer, in London, was the bogie that sat for ever on the shoulders of authorities.

Mr. Francis Swales commented briefly upon the lack of harmony in point of view that had characterised the various papers delivered at the Congress.

Councillor Galbraith, of Glasgow, desired to know where the money was to be obtained to carry out schemes of development and improvement. Everything was satisfactory on paper, but how were they to set about converting Glasgow? If they could not show a clean city, they could at least show a clean Clyde. No one appeared to have tackled the financial aspect.

Professor Adshead said that Professor Reilly rightly emphasised the unsuitability of the country cottage in the town, and vice versa. They had got to consider what type of house would be directly suitable for the areas lying between urban districts and the towns. It was proposed to erect only twelve houses to the acre; but it would probably be found that twenty houses to the acre was a more appropriate number.

Mr. Herbert Ibberson feared that in the smaller towns there would be considerable danger of town-planning matters getting entirely into the hands of one man, who would probably be the borough engineer. He would like to urge all delegates from municipal bodies, when they returned to their councils, to impress upon its members the fact that beauty was a commercial asset.

CLOSING ADDRESS.

Following Mr. Burnham's paper, Mr. L. Cope Cornford read a paper on "Cities of the Future: their Chances of Being." On Thursday afternoon, in the East Gallery, papers were read on a scheme for the improvement of Trafalgar Square (by Mr. William Woodward) and town planning in relation to old and congested areas (by Mr. Arthur Crow); and, in the Great Gallery, a paper on the planning of Khartoum and Omdurman (by Mr. W. H. McLean), followed by a description of some lantern slides by Major Stanton; great interest being given to this latter meeting by the presence of Lord Kitchener in the chair. A paper by Mr. John Sulman on "The Federal Capital of Australia" could not be read for lack of time.

Professor Beresford Pite, in a closing address to the Conference, said that the Town Planning Committee of the Institute, which at the inception of the recent legislation was constituted to consider and advise upon its progress, would continue its labours, and, after the transactions of the Conference had been published, would issue a report on the conclusions arrived at, adaptable to the present needs of authorities preparing town plans.

NEWS IN BRIEF.

Mr. Edwy Goodwin Clayton, T.C.S., F.I.C., writes that, as the result of experiments he made some years ago, he found that the black incrustation on the Portland stone of which St. Paul's Cathedral is built is "mainly sulphate of lime formed by the action of sulphuric-acid-charged rain upon the Portland stone."

* * *

The proposal of the Law and General Purposes Committee of the Kensington Borough Council, that the new Sessions House should be erected in Kingsway, is being strongly opposed. The Finsbury Borough Council having proposed to remodel the old Sessions House at Clerkenwell for the use of cases arising in North London, Kensington, while approving the principle that the Sessions House should be on the North side of the Thames, considers that there should be one central building for the use of the Quarter Sessions for London, and that it should be in Kingsway. To this proposal, however, the shopkeepers in Kingsway are likely to raise objections. It is pointed out that a site equally central will soon be vacant, when the whole of the King's College Hospital is removed to Camberwell.

* * *

It appears by a report of the Improvements Committee that the Commissioners of Works are in negotiation for a site in Kingsway, for the offices of the Public Trustee. The site, which has an area of about 8,000 square feet, has frontages on Kingsway, Sardinia Street, and Lincoln's Inn Fields, and it is to be made a proviso that the forecourt in Lincoln's Inn Fields shall not be built upon above the present level. Agreeing to the request of the Government Department, the Committee recommends that the land, instead of being sold outright, shall be conveyed subject to a perpetual rent charge of £2,000 per annum, the right being reserved to the Government of purchasing the Council's interest in the land at any time prior to September, 1959, if the Council desires to sell it.

* * *

Dublin Corporation has conferred the freedom of the city on Sir Charles Cameron in recognition of his half-century's work on behalf of the public health of the city. It is pointed out that Dublin, which from a sanitary point of view did not formerly possess a high reputation, is now comparatively free from almost all malignant diseases.

* * *

Dr. William Butler, Medical Officer of Health for Willesden, in a report to the Education Authority, urges them to take into consideration at an early date the provision of shower baths in the elementary schools. He advocates that they should be supplied with hot and cold water, and be sufficient in number to enable a whole class of either boys or girls to be washed simultaneously. By this means, he says, a whole school might be bathed regularly not less than once a week without dislocation of school work. He suggests that with the requisite number of showers a class might be washed in half an hour, and soap and towels, with a teacher to supervise, would be all that would be necessary.

* * *

A memorial-stone erected over the grave in Stewarton Churchyard of Robert Burns and his son John Burns, the uncle and cousin of the poet, was recently unveiled.

The memorial is in the shape of an obelisk, 12ft. high, of Ballochmyle red freestone, and has been erected by the members of the Stewarton Literary Society. On one side of the base is inscribed the following quotation from a letter of William Burns, father of the poet, dated Lochlie, April 17, 1781:—"My brother lives at Stewarton. He hath two sons and one douther named John, William, and Fanny"; and on the opposite side is the sentence:—"The connexion between the poet and his uncle's family was a very close one. See letter, Ellisland, February 9, 1789."

* * *

After the death of Sir Philip Sidney in 1586, the Dutch States-General, in gratitude for the gallant Englishman's efforts on behalf of Holland, proposed to erect a monument to his memory. But the intention was never carried into effect. A committee has now been formed in the Netherlands with the object of discharging the obligation so long unfulfilled. The plan is to erect a monument on the field at Zutphen on the spot where Sidney fell, and an appeal is made to Netherlanders in England, and those Englishmen who are admirers of Sidney's personality, to support the project. Donations will be acknowledged by the treasurer, Mr. H. Van Alphen, Groenmarkt, 14, Zutphen.

* * *

Messrs. E. A. Roome and Co., builders, of 36, Basinghall Street, E.C., and Urswick Road, Homerton, N.E., have secured the contract for the erection of additions to the Monastery of St. Antony, Khedive Road, Upton Park, Essex, under the supervision of Messrs. Pugin and Pugin, architects, of Liverpool.

* * *

The Leeds Education Committee have provisionally accepted the tender of Messrs. H. Atkinson and Sons for the erection of the educational block of buildings for the Training College, at the sum of £43,795. One of the conditions of the acceptance, which has yet to be approved by the City Council, is that preference be given to local materials and the employment of local labour.

* * *

With reference to the paragraph on St. Andrew's Church, Starbeck, Harrogate, in our issue of September 28, p. 330, bottom of first column, the Buttermere Green Slate Company, Ltd., write that the slates used are coarse-grained original Elterwater from their quarries.

* * *

The necessary deposit to secure a site for his opera-house in Kingsway has been paid by Mr. Oscar Hammerstein, the American theatrical manager, who is now in town busily engaged upon the preliminary arrangements. Altogether the scheme is to cost nearly £300,000. The building is to be extremely imposing, and will provide accommodation for about 3,000. It will be ready next autumn.

* * *

During the past fortnight there has been a recurrence of subsidences or "crownings-in" at Quarry Bank, a village in the Black Country. The area principally affected is that known as Hammer Bank, near the dismantled Cradley Forge Ironworks, and in many instances the tenants have had to quit their houses in haste. The whole back wall of one building collapsed while the daughter of the occupier sat in the kitchen, but fortunately the masonry fell outward. The front of another house, a few yards off, split from top to bottom, and the occupiers had to beat a hurried retreat. In a third instance a washhouse parted from the main building, and while the wife of the occupier was digging potatoes in the garden a landslip occurred within a yard of her feet, and rocks were exposed beneath. Mouse Sweet Brook, a tributary of the Stour, has had its bed dropped two or three feet in places, and the masonry of a bridge over the main road leading to Cradley Heath is much broken.

* * *

The first modern hotel in Madrid has been inaugurated. The new hotel is a six-storey building situated opposite the Prado Museum. Most of the contractors employed were Spanish, but many foreign companies, including several British firms, supplied machinery and furniture.

* * *

A noteworthy building has been accomplished by the completion of the extension of the Embankment block of the Savoy Hotel. The alterations involved not only an extension of the river front, but the addition of a new storey on the top, yet the whole of the operations had to be carried out and completed in the space of only eight weeks. In addition, the work was carried out without interference with the routine of the hotel—which throughout was full of guests—though it was in progress during the night as well as the day. It will be remembered that Messrs. Collcutt and Hamp are the architects; the contractors being Messrs. Leslie and Co.

PERSONAL AND PROFESSIONAL.

Mr. Edmond Coignet has been awarded a "Grand Prix," Class 28, at the Brussels Exhibition, 1910, for his system of reinforced concrete.

* * *

Messrs. C. Leary and Co., timber brokers, etc., 4, Lombard Court, Gracechurch Street, London, E.C., announce that on October 1 they opened an office at 322, Tower Buildings, Water Street, Liverpool. Telephone number, 303 Central; telegraphic address, "Unbiased, Liverpool."

* * *

Mr. Frank W. Chapman, Imperial Chambers, 18, Norfolk Row, Sheffield, announces that he has taken into partnership Mr. J. Mansell Jenkinson, A.R.I.B.A., and that the practice hitherto carried on by Mr. Chapman, in the name of Hemsoll and Chapman, will in the future be known as Chapman and Jenkinson. Mr. Jenkinson served his articles with the late firm of Hemsoll and Paterson, and for the past seven and a half years has been associated with Mr. Chapman as assistant.

* * *

To mark his retirement from the position of City Architect, Mr. G. R. Kirkby entertained the staff of the Bradford Corporation Architect's Department at Wilson's Café, Darley Street, Bradford, on October 6. After tea, Mr. Kirkby said he had arranged the little function in order that, in saying farewell to the municipal service, he might acknowledge to the whole of the staff his personal indebtedness to them for the earnest, loyal, and unremitting aid which he had received from them during a period of considerable stress, and without which co-operation he would have been unable to discharge his personal obligations to the City Council. On behalf of the staff, Alderman Trotter asked Mr. Kirkby to accept a case of pipes as a small token of the esteem entertained by the officials in the department for their retiring chief.

SOCIETIES REPORTS.

The Architectural Association.

The following are further extracts from Mr. Arthur Keen's inaugural address, part of which was published in our last issue:—

The views of science, he said, are never crystallised: they deal with facts, and therefore advance is inevitable whenever sufficient basis for it is offered, however distasteful it may be to those whose opinions may have to change; but art being a matter of personal feeling and expression, and free from compulsion, is therefore conservative. For architectural design to be real and living it must be so intimately related to construction and to practical requirements as to be inseparable; and this can only become possible if the architect is an intelligent imaginative artist, able to turn his back if necessary on all preconceived ideas, but at the same time utterly unable to do anything that is not instinct with beauty.

It may be, as Professor Lethaby has suggested, that great developments might follow from dealing with the problems of the architect from the scientific standpoint, and I can well believe that it might be so if the average architectural undertaking were of a monumental character or of such magnitude as the Albert Hall; but one can only feel that the scientific basis can hardly apply in general architectural design. But Professor Lethaby makes use of one notable expression in his recent paper, which was that "True originality is to be found by those who, standing on the limits of the sphere of the known, reach out to some apprehension and understanding of what is beyond; it is the next step in orderly development." That is to say, we must have full knowledge of the art of the past before we can produce original conceptions of any value. He himself has given us ample illustration of this in his own work; for it is full of originality and charm, but it proceeds from study of such close and accurate character as very few people are capable of. The terrible vagaries of the "New Art," if art it can be called, afford sufficient indication that it is past the power of man to originate anything beautiful; he can only proceed from what is known and from what is around him, with the beauty of nature as his chief inspiration.

The means and methods of expression have varied in every age. At one time the churchman and the mason have worked side by side in contrivance, arrangement, and construction; at another the eager artist of the Renaissance has left the paint-brush or chisel and built great frowning walls of rusticated masonry, has played with light and shadow in sunlit columns and great overhanging eaves or cornices, or has enjoyed the excitement of daring feats of construction; or, again, the religious earnestness of the Gothic revivalist has striven to win back the secrets of the ancient masters and to do something worthy of the faith, ideals, and traditions of an ancient church. There is no lack even to-day of ideals or of teachers, from those who want us to "think imperially" in matters of design, to those who would make all beauty grow out of the character of material and the capacity of the craftsman. All have their place—all are right and all are wrong; some think we should go back to absolute simplicity and thereby be sure not to offend good taste. Others hold that, while renouncing architecture, so called, in favour of mere sound building, we must offer our clients the gratification that comes from harmonious blending of colours, ingenious arrangements of materials, tool-marks, instead of mouldings in stone and wood, and the texture of handiwork instead of the smug perfection of the machine. Others, again, go to another extreme and say we are to train our students in the art of arranging noble masses of building in dignified piles with all the wealth of elaboration that columns and entablatures, dome, vault, and lantern, stately terrace and wide-reaching colonnades can give them. Each method is right in its way, and simplicity is as delightful in a Devonshire rectory as the art of the craftsman in a village church; or the grandeur of dignified elaboration in a national building; but the main test of all design is fitness, and it is not by designing palaces that one will learn to build a village school; not by working in a plasterer's shop that we can gain such skill as Soane displayed in the wonderful interiors he contrived, or that Bodley used in building his great church at Pendlebury. I do not undervalue the training in handicraft at all; it is most valuable; it helps a man to an appreciation of what we may call "values" in material and workmanship. It adds to his pleasure and interest in his work, and makes him understand the respect that is due to the workman. But it must only be accessory to his studies in the things that concern the architect as distinguished from the builder and the craftsman. The architecture of cities has to be learnt as architectural design and not as craftsmanship; and there is no better way of learning it than by the orderly methods of a well-organised school such as ours.

Mediæval Architecture.

Mr. Banister Fletcher, F.R.I.B.A., gave on Monday, in last week, the first of a course of twenty-four University Extension lectures on "Mediæval Architecture," at the Victoria and Albert Museum, South Kensington, S.W.

Mediæval architecture, he said, was a continuous evolution from the early round Arched or Romanesque period to the Pointed Arch or Gothic period, and was not the result of efforts reflecting the tastes and ideas of individual architects, but was the result of forces and tendencies underlying the whole life of mediæval times. Mr. Fletcher referred to the prominence of the clergy, the monastic communities, the secular canons and friars and military orders, and the extraordinary power and influence of the papacy, the crusades and the influence of dogma on church planning, the condition of the people, the wild state of the country with few roads and the necessity of pack horses for carrying building materials, the Feudal system, the growth of the towns and the trade guilds of London. Views were then shown connecting Mediæval Architecture with the styles of the past, also of the various types of buildings erected in the mediæval period in Europe. The lantern slides, of which some twelve hundred will be shown, are a special feature of the lectures, rendering the acquisition of a knowledge of architectural history comparatively easy, while the visiting class after each lecture enables students to study systematically the objects in the museum.

The lectures are given on Monday evenings at 5 p.m., in the Lecture Theatre of the Victoria and Albert Museum, South Kensington, S.W. Particulars of the course can be obtained from the hon. secretary, 120, Cheyne Walk, Chelsea, S.W.

TRADE AND CRAFT.

Hydraulic Power Lifts for Cranes, etc.

The London Hydraulic Power Co. have just issued a new illustrated booklet giving the objects of the company and a description of their works, with the conditions of supply. The progress of the company during the last 28 years is narrated, and the comparison of hydraulic power with electric is interesting to the users of both kinds of power. The pamphlet can be obtained at the office of the company, 9, Bridge Street, Westminster, S.W.

Eighteenth-century Design Firegrates, and a New Range.

The Carron Company, Carron, Stirlingshire, have issued two handsome coloured pictorial showcards illustrating pictorially their eighteenth century disign firegrates, and the new Carron range in which is comprised "the oven with the inner glass door." The firegrates are carefully executed replicas from exclusive models designed by craftsmen, who were eminent in the brave days of Chippendale, Sheraton, Heppelwhite and the brothers Adam, when handicraftsmanship reached its zenith. The range of designs admits of selective adoption for almost any modern scheme of home decoration, and the "finish" may be brass, bronze, or armour-bright. In the new Carron range the progress of the cooking can be ascertained through an inner glass door, which, by excluding the ingress of cold air, maintains the even temperature of the oven. There is a hot closet with sliding doors, a thermometer registers the temperature inside the oven, and all the flues are of cast-iron, doing away with all possibility of unsatisfactory working caused by badly constructed brickwork flues.

Laundry Equipment.

Messrs. W. Summerscales and Sons, Ltd., Phœnix Foundry, Keighley, have issued a new illustrated catalogue giving particulars of various types of plant for the full equipment of laundries. The catalogue is so comprehensive that architects dealing with this class of building will find it eminently useful. A copy of it will be forwarded on receipt of a postcard from any of our readers.

FEDERATION NEWS.

York.

An executive meeting of York Master Builders and Contractors' Association was held at the Old George Hotel, on September 27th, the vice-president (Mr. W. E. Biscomb) in the chair.

The chairman referred to the loss which the association had sustained since its last meeting in the sudden death of one of its oldest members and officials, Mr. Thomas Rawling. He had for many years taken an active part in the work of the Association, and had for some years filled the office of secretary. A letter of condolence was ordered to be sent to the widow and family.

York Board of Studies: Conference With Employers of Labour.—A report was given of this meeting, at which the following decisions were arrived it:—1.—It was agreed that employers might, when engaging employees under 18 years of age, make their appointments conditional on their consenting to attend evening schools or technical classes. 2.—It was decided to recommend employers to repay the fees to all students at the end of the session who complete 75 per cent. of attendances, and who have received a satisfactory report from the head teacher. 3.—No recommendation was made as to the giving of prizes or bonuses. Different opinions were expressed, some being in favour of giving prizes or bonuses and others against. 4.—It was resolved to recommend all employers as to the advisability of making promotion and increase of wages dependable on the production by the employee of certificates and reports, which are issued by the Education Committee, showing that satisfactory attendance and progress in evening and technical classes has been made. 5.—It was decided to ask employers to take into consideration the question of reducing the hours of labour of those employees who attend evening classes. 6.—It was agreed to ask employers to publish posters in all factories and workshops stating what facilities they are prepared to afford for those in their employ who wish to attend evening schools. The posters will be provided by the Education Committee. After discussion, the result of the conference was approved, and it was resolved that the matter be placed before the general meeting, with the recommendation that the movement be encouraged in every possible way, and that an advisory committee be appointed if required.

Letter to Architects.—A letter drawn up under the direction of the Yorkshire Federation was read. It was resolved that the secretary should carry out the wish of the Federation and arrange for the letter to be circulated in the York district.

Notification of ¼d. an Hour Increase on Skilled Workmen for Daywork.—It was resolved to recommend to the general meeting that the increase should be notified to the public by means of an advertisement in the local papers for one week.

National Reserve Fund. — It was resolved to place this matter on the agenda for the next general meeting.

Sheffield Building Trades Exhibition.—The attention of members was drawn to this Exhibition, to be held from October 14th to 22nd, and the general interest of such an Exhibition to all those who were engaged in the building trade. The Federation having fixed a meeting in that town for the 20th, it was suggested that many of the members would possibly like to visit the Exhibition on that occasion, and the secretary was asked to notify the members of the date fixed.

A resolution received from the painters' association, with a request to place the same on the agenda for next meeting, was considered, but as the matters brought forward were fully provided for in the new sub-contract form, it was considered that no useful purpose could be served by placing the matter on the agenda.

Commission of the Peace.—It was resolved to take the opinion of members at the next meeting as to whether representations should be made in the proper quarter with a view to obtaining a building trade representative in the place of the late Councillor Mansfield, J.P., deceased.—J. Hague (Solicitor), Secretary.

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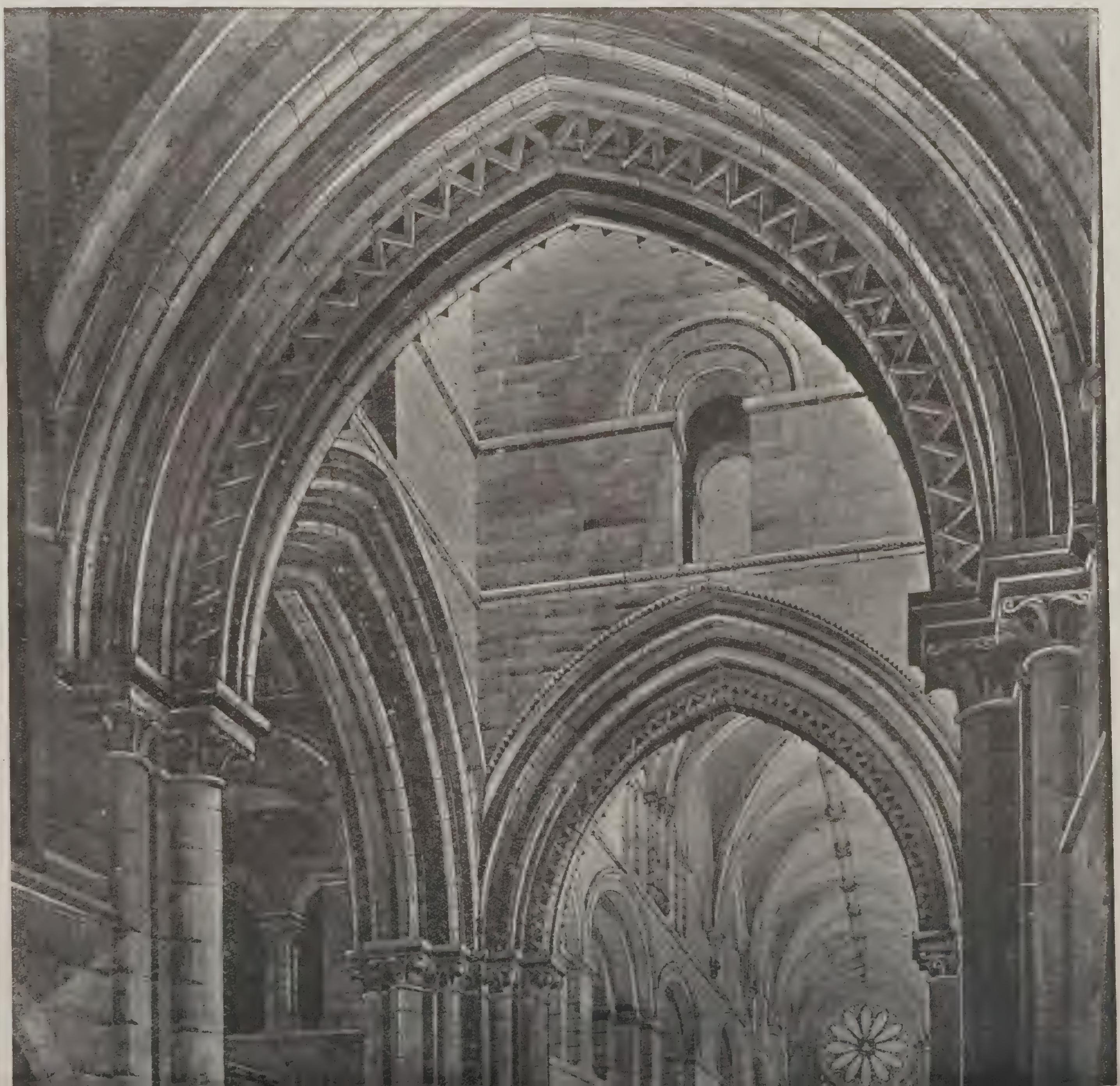
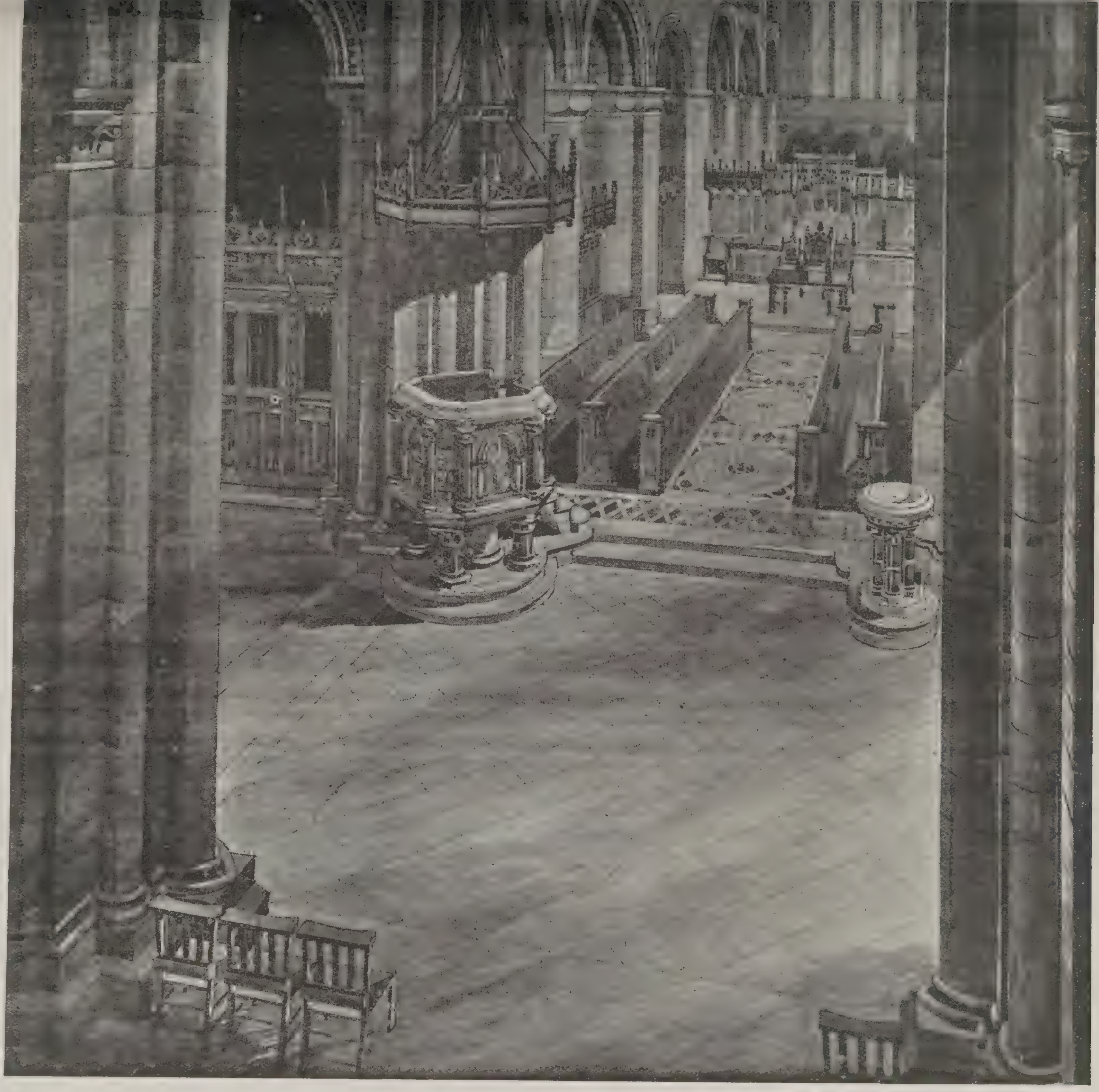
Supplement to The Architects' and Builders' Journal, *October 26th.* 1910.





KIRKWALL CATHEDRAL RESTORATION: VIEW LOOKING EAST SHOWING INTERIOR WITH GALLERIES AND GLAZED SCREENS REMOVED, AND TRIFORIUM OPENED UP. HIPPOLYTE J. BLANC, R.S.A., F.R.I.B.A., ARCHITECT.

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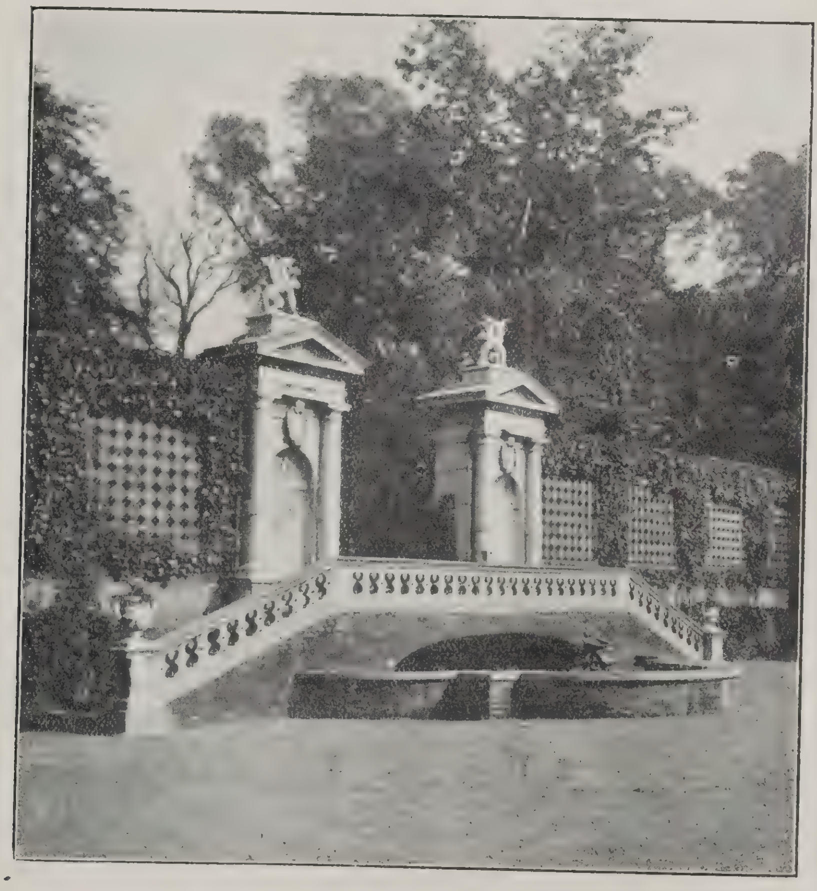
THE ARCHITECTS' &
BUILDERS' JOURNAL

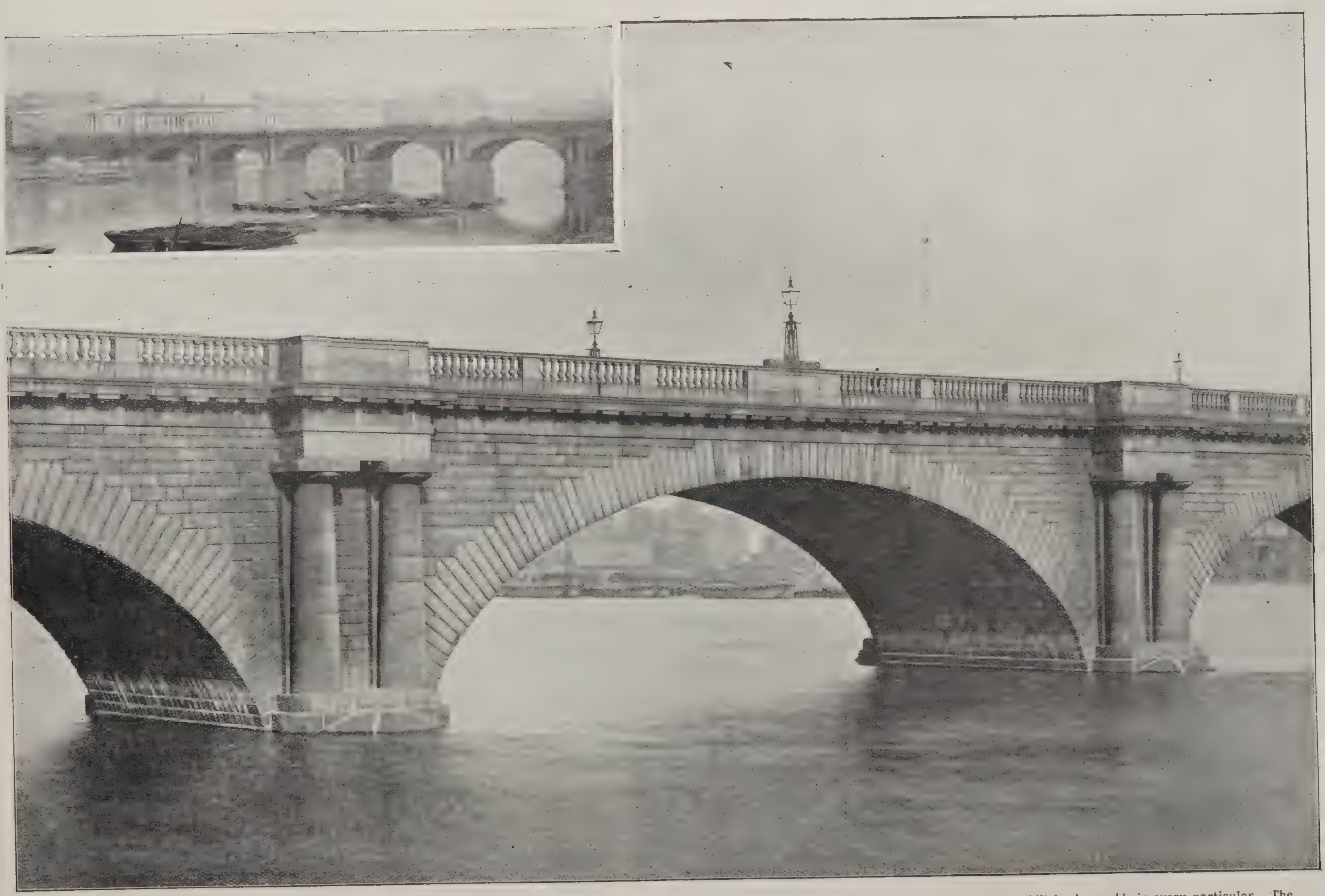
WEDNESDAY,
OCTOBER 26th, 1910.

Volume XXXII. No. 821.



Besides John Thorpe, the name of Inigo Jones is associated with Holland House. The gate piers shown above were designed by him, and executed by Nicholas Stone. Their original site is forgotten, as they were moved several times before being finally re-erected in 1850 in the middle of a screen wall projecting from one corner of the house.

THE INIGO JONES GATE, HOLLAND HOUSE, KENSINGTON.



This is unquestionably the finest of the Thames bridges. The original design was made by George Dodd, but this was completely revised by Rennie, whose skill is observable in every particular. The bridge was commenced in October, 1811, and opened on June 18th, 1817—the anniversary of the Battle of Waterloo, whence it received its name. There are nine equal semi-elliptical arches, each of 120 ft. span, with a versed sine of 32 ft. The bridge was built at a cost of £937,392 for a private company, who levied tolls for all traffic over it, varying from ½d. to 1s. 6d. In 1879 it was purchased for £474,200 by the Metropolitan Board of Works, and it is now under the control of the London County Council.

WATERLOO BRIDGE, LONDON. DESIGNED BY SIR JOHN RENNIE AND GEORGE DODD.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

OCTOBER 26th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 821.

Note: The List of Contents will be found on Page V of the front advertisements

Mural Painting and the New Panels in the Houses of Parliament.

THE essential quality of mural painting, as distinguished from what may be called picture-painting, is that it is painting which is in fact attached to, or forming part of a wall, instead of being separately framed and moveable, and which is æsthetically subordinate to, and more or less a part of, the architecture of the building which it decorates. An oil or water-colour painting in a moveable frame is a work of art complete in itself, and one to be judged and valued for its own sake alone and without reference to any surroundings; a mural painting is required to be in harmony with its architectural framing, and to appear as part of the decoration of the building. To take this position satisfactorily it must be, to a certain extent, as one may say, architecturalised. A degree of realism which would be quite suitable in a picture would be out of place in a mural painting, as removing it too far from the character of the conventional detail of architecture; and effects of distance, of aerial perspective, are out of place also; the mural painting is part of the wall and is not to carry the eye far beyond the wall and endeavour to cheat us into the belief that the wall is removed and that we are looking into space. In this respect it is under somewhat the same æsthetic conditions as stained glass. And as an element in the decoration of a building it is desirable that it should show clear, bright, and harmonious colour, in this respect again resembling stained glass. A dreary moorland landscape with a leaden sky may form a very poetic picture, but would hardly be decorative in effect. The mistake of attempting scenic effects of perspective is seen *in extremis* in the great gallery at Burghley House, where a distant landscape is supposed to be seen between the columns, and foreshortened figures are represented as flying into the room. The mistake of want of colour is seen in Thornhill's paintings in the dome of St. Paul's, which even when fresh must have had a heavy and dull effect as colour, though they have considerable merit as design.

The medium which was in use in the great days of Italian mural painting, *fresco*, had the special virtue and fitness that it almost compelled the composition to assume the character suitable to mural decoration. Fresco will not lend itself to effects of aerial perspective; it is too intractable a material for that; and it almost necessarily produces clear and bright colour effect of a somewhat flat description; deep effects of shadow are practically out of the question with fresco. And no other method of painting so closely incorporates the picture with the building. Its great difficulty is that it has to be executed piecemeal, from a previously coloured design, on as large a portion of the plaster as can be kept wet for one sitting.

There have been difficulties, in this climate, with the behaviour of fresco after completion, owing to the effect upon it of our damp atmosphere. In all probability more experience in the selection and mixing of materials would get over this, and it is probably owing mainly to the trouble of the piecemeal execution in wet plaster that the French, who do so much in mural painting, a good many years ago adopted the system of executing such paintings in oil in the studio, and having them afterwards fixed in place on the wall by a method called *marouflage* (not "marophlage," as the "Times" spelt it in describing the new paintings at the Houses of Parliament). The advantage of this is that the artist can work at his picture at leisure and in comfort, and can retouch portions already executed, which is impossible in fresco. The work once done on the fresh plaster cannot be meddled with after it is dry. The disadvantage is that the artist completes his work under a different light and amid different surroundings from those in which it is to be permanently placed, and what appears quite satisfactory in the studio may not appear equally well in its final position. Perhaps the best of all conditions for mural painting is when the work is executed in tempera on the dry plaster surface *in situ*, like Leighton's two paintings of the Arts of Peace and the Arts of War at South Kensington, which were painted where they stand, and are two of the most satisfactory pieces of mural painting we have to show in England.

The best class of subjects for mural painting are those in which figures play the principal part, and in which the composition is kept as much as possible on a foreground plane and with comparatively few figures. Where there is a considerable crowd of figures, some of them necessarily in the background and at some distance, and where there cannot be much effect of aerial perspective, the distant figures are apt to look too much like figures on a reduced scale. And a distinction should always be made between the treatment and the subject for vertical walls and that for ceilings. Ceiling paintings come equally under the head of mural decoration. Two mistakes have been frequently made in ceiling paintings, even by great painters. One, which was very common in the later days of the Italian Renaissance, is to draw the figures as if seen from below in upward perspective, so that we get the soles of the feet of a number of foreshortened figures. The other mistake is to paint a ceiling as if it were a wall laid horizontally, one side being the ground level and the other the top of the picture. This is bewildering to the spectator below, who hardly knows from which position to study the painting. The only thing to do with figure compositions for ceiling pictures is to treat them so that the figures appear not to stand but to *float*. No one understood this art better than the late M. Marioton, whose ceiling pictures were for many years among the best exhibits at the Paris Salon, and were always compositions of symbolical figures floating in the sky; thus avoiding all complication as to which was "the right way up" of the picture, and at the same time giving a lightness of effect which seemed to raise the ceiling rather than depress it. A ceiling-painting should never seem to bring the ceiling downward nearer to the eye; the object should rather be to uplift it.

The French have done a great deal of late years in the way of what is called decorative landscape, which may almost be said to be a specially modern form of art. It consists mainly in suppressing realistic detail and treating landscape in masses of colour in different planes; a suggestion of landscape rather than a representation of it. Some fine things have been done in this way, but it is a very difficult and delicate art, and one in which it is very easy to transgress the line which separates suggestion from realism.

In England the development of mural painting moves very slowly. It is some thirty or forty years since the frescos in one of the corridors in the Houses of Parliament were painted, and it has taken us all this time to venture on the further experiment in another corridor which has just been completed. When we compare this with the annual appearance at the Salon of immense paintings intended for the decoration of Town Halls and other public buildings all over France, at the expense of the State or of municipal authorities, and notice that even this comparatively small undertaking is furnished by private munificence, and not out of public funds, the contrast is rather humiliating.

With two exceptions, the names of the artists employed on the six pictures are not very widely known, and perhaps we may assume that the explanation is that the peers who undertook the cost of the different paintings claimed the right to select the painters. It is not quite the principle on which national buildings should be decorated, and certainly not one which would be admitted in France, where the State or municipal authority would select the artists, probably as the result of a sketch competition. There is a wide difference between the old frescos in the other corridor and the new paintings. The old ones are treated pictorially; indeed, Ward, who executed two of them, simply repeated two of his easel pictures in fresco—the same composition, but with necessarily a very different effect, so that they look rather like the original pictures with the shadows taken out of them. The new pictures are all treated decoratively, in a flat manner of execution, and with a great deal of bright, clear colour. This is as it should be; whether, however, it was quite desirable to express by actual gilding the gold portions of robes or insignia may be questioned. Gold, in a picture, does not impress one as a colour; it is a thing *per se*, and will not blend with the rest of the picture; and thus the gold sceptre, or whatever it is, in one of the compositions, makes a distracting line blazing at one across the picture. The light in which they are seen is exceedingly unfavourable, as there is a window above each, which throws the light in one's eyes and makes the picture appear to be comparatively in shadow.

We are not familiar with the name of Mr. H. A. Payne, the painter of "Plucking the Red and White Rose in old Temple Gardens," but he has produced the best picture of the set. He has kept to a few foreground figures, avoiding anything like distance, or a secondary group of figures; the action and expression of his two principal figures is vigorous and expressive, and the work ought to give him a reputation. Students of history tell us that the incident is apochryphal, but that is not of much consequence from the artistic point of view. The next best, we think, is Mr. Cadogan Cowper's "Erasmus and Thomas More visiting the Children of Henry VII. at Greenwich." This also is a picture kept to a foreground plane as far as the figures are concerned; the artist has introduced his favourite incident of a window in the rear of the group, through which the Thames and the sails of vessels are seen, but it is kept very subordinate, and does not disturb the composition. Mr. Eden's "Abbot receiving the Charter from Henry VII." we do not care very much for. Mr. Salisbury, in "Henry VIII. and Catherine of Arragon before the Papal Legates," has made fine and characteristic figures of the King and Queen; there is a noble and pathetic expression in the countenance and action of the unhappy queen. Mr. Board's "Latimer preaching before Edward VI. at Charing Cross," decorative enough in effect, is rather stiff in composition, and not very expressive, and the introduction of the crowd in the rear illustrates one of the difficulties we have spoken of in this conventional style of painting; they do not look like distant figures so much as like figures on a smaller scale. Mr. Byam Shaw, from whom we expected much, is a little disappointing in his "Entry of Queen Mary and Princess Elizabeth into London"; it is too crowded, and where there is not the resource of perspective in tone and colour, a crowd is apt to make a confused composition; and the horse seen in diminishing perspective has the effect of his head being a long way from, and too small for, his hind quarters. The figures of the Queen and Elizabeth are very good, and expressive of the contrast in their characters.

This is a most interesting experiment in mural decoration, and shows a much better understanding of what is required in decorative painting than the old pictures in the other corridor. And yet, pausing a moment to look at these latter before leaving, one is tempted to ask—is there anything in the new pictures so expressive, and with so much of the great qualities of painting as we find in poor Ward's "Last Sleep of Argyll"?

The Architect and His Public.

THE saying that "we have plenty of architects but no architecture" has been revived (as was inevitable) in consideration of the Town-planning Exhibition. It contains as much (or as little) truth as most epigrammatic utterances. If we have no architecture, where is the proof of the existence of the architects? Some of it is on the walls of the Exhibition. Much more of it is in the many noble and beautiful utterances of such architects as write and lecture, as they do most copiously, on architectural ideals. But we do not agree that, as the epigrammatist insinuates, these are merely architects *in posse*. They must have achieved something in the concrete; otherwise they would not get a hearing; and any very glaring discrepancy between aspiration and accomplishment, doctrine and practice, may always be conveniently attributed to lack of opportunity. The apology would usually have the virtue of truth. It is because of the unequal strides with which the architect and his public seek to cover the ground, that so little progress is made. The architect lacks the stimulus and the inspiration that would be derived from a public having purer ideals, a more delicate feeling for æsthetics, or at all events a more highly trained intelligence and a quickened regard for architecture. "An Artist," writing in the "Morning Post," thinks that the "ineffectual condition" of having "plenty of architects but no architecture" will continue "until there is established an intelligent Governmental or municipal control over the decoration of the streets." Possibly; but the condition precedent to such intelligent public control is, as we have said, an intelligent public, and how to obtain such a public is the crux of the problem.

Trunk Roads and Garden Roads.

A PAMPHLET which has just been issued under the title of "Spread the People" deals boldly with an aspect of town planning that has received comparatively little attention. The pamphlet is published by the London Municipal Society, and the author, Captain George Swinton, a well-known alderman of the London County Council, proposes that a new road of considerable width should be constructed, say from London to Manchester, not along the line of the greatest population, such as would be chosen by a railway engineer, but along the line of least resistance from a financial point of view—that is to say, through land which has nothing more than rural agricultural value on each side. Along this road would spring up factories and the homes of the workers; while exceptionally picturesque spots would be connected with the main roads, and would be chiefly occupied by private residences of a superior order. The "garden road" would be connected with the main roads and the principal secondary roads. For less than the two millions and a half sterling which Kingsway and Aldwych have cost London, a new garden road, embodying Captain Swinton's suggestions, could be made from Portsmouth to the Scottish borders. Convenience of locomotion would not be the only benefit of such roads. The congestion of population which is the direct cause of physical deterioration and of the production of unemployables would be relieved, and the spreading of the people amidst rural surroundings should secure physical regeneration. Further, the recent railway strikes in France have demonstrated the wisdom of not putting the food supply and other resources at the mercy of a line of railway which, in various ways, may be easily put out of running, whereas a broad roadway, traversed by swift motors, would be comparatively difficult to block, and would be at all events a very useful alternative and accessional route. But the basic idea of the garden road is to spread work and factories, homes and villages. The new road, and the new conditions which it would introduce, might suggest new types of buildings. The project, therefore, seems to come well within the purview of the architect.

Builders' Burning Topics.

THE quarterly meeting of the National Federation of Building Trades Employers of Great Britain and Ireland, which was held on October 11, at the new offices of the Federation, Koh-i-noor House, Kingsway, had under consideration several items of rather more than ordinary importance. It was, for instance, decided to appoint a deputation, consisting of the officers of the Federation, to confer with the Council of the Association of Municipal and County Engineers on the subject of the appointment of independent arbitrators in municipal forms of contract, and the conference has been fixed for October 29th. Nothing but good should come of it. There could, we imagine, be no better way of approaching a subject that is of equal interest to both parties; and if a mutually satisfactory decision is reached, as there is no reason to doubt that it will be, a vexed question will be in a fair way towards friendly settlement. An understanding upon the matter would doubtless prevent much costly and harassing litigation; the cases that have already come before the courts, though tending to strengthen the hands of the contractors, have left several important points open to dispute. The contractors, indeed, will go into the conference with the assurance that the measure of equity for which they contend will be welcomed as warmly by the architect and the engineer as by the builder and contractor; for who would not be glad to escape from the invidious position in which a referee or arbitrator is placed when he is called upon to deliver judgment as between his employers and the contractors? All that the contractors are asking for is provision for the appointment of arbitrators who shall be entirely independent and therefore entirely beyond suspicion of any manner of bias, unconscious, conscious, or subtly sub-conscious. Another item concerning contracts which was under consideration at the quarterly meeting bore reference to Clause 30 of the agreed form, which, it has been suggested, should be amended with a view to securing more prompt settlement of contract accounts. This matter was adjourned for consideration at the next meeting. It is too large and too complicated a subject for offhand settlement. The broad fact that large and reputable firms of contractors have been brought to bankruptcy by the pernicious practice by building owners of leaving heavy accounts unsettled for years, and of paying no interest whatever on the locked-up capital, is admittedly a matter of the utmost gravity; yet in some quarters the delicacy of pressing clients for settlement has been so sensitively felt as somewhat to embarrass the situation. Possibly a fully adequate discussion of the matter may clear the atmosphere of certain misconceptions, and perhaps increase the courage of those few members who at present seem unwilling to commit themselves to a vigorous assertion of their just rights. Of minor interest was the decision to place before Mr. Lloyd George several important points with regard to the Finance Bill which had not been considered at the conference (held at inconveniently short notice) to which the Chancellor had invited the officers of the Federation. Also, a resolution was passed to the effect that, in view of the intention of the Government to introduce legislation for providing a scheme of unemployment insurance applicable to the building trade; and having regard to the already heavy and ever-increasing cost of workmen's compensation insurance, the attention of the Legislature should be called to these facts, and to the need there is for some relief of the burdens already imposed, before proceeding with the further scheme of unemployment insurance. This is a matter in which the interests of builders and contractors are vitally involved. Their liabilities under the Compensation Act are already well-nigh intolerable, and the calm proposal to add to them should be—and doubtless will be—opposed with the utmost determination and spirit. In such matters it is always advisable to take time by the forelock, and, if possible, nip the evil in the bud; for it is notoriously easier to prevent bad legislation than to provide a remedy for it when once it has become established. The Workmen's Compensation Act is a case in point. Although it bears so heavily on the employer, and although it tends more and more to re-act on the workmen themselves in various ways, so that even to them it is anything but an unalloyed blessing, its drastic amendment is hardly within the range of practical politics. That lesson will not be lost upon the Federation.

St. Paul's Bridge and "the City Man's Idea of Architecture."

MR. LEONARD STOKES, P.R.I.B.A., writes to correct what he regards as a rather serious error in the report of the Bridge House Estates Committee with respect to the much-debated matter of the proposed St. Paul's Bridge. The report says that a deputation from the Institute "suggested that for æsthetic and architectural reasons they [the committee] should consider the advisability of adopting the line for the suggested new bridge to come out opposite the south door of the central transept of St. Paul's Cathedral, and, further, that the best architectural advice should be employed in connection with the scheme." Mr. Stokes says that the first part of this statement is incorrect, and that therefore the further statement as to the inferiority of the alleged R.I.B.A. scheme and its great extra cost is gratuitous. The R.I.B.A. deputation, Mr. Stokes states, "carefully confined itself to urging upon the committee the desirability of obtaining the best architectural advice before any scheme was decided upon—surely, as he claims, "a highly reasonable, proper, and obvious suggestion." He regrets that this advice has been unfortunately ignored, and he fears that, "unless Members of Parliament have nobler views than those of the City Corporation, the die will be cast, and no amount of 'artistic embellishment'—the City man's idea of architecture—will ever save the scheme from failure"; and he asks, "Was St. Paul's Cathedral designed in this fashion, and are not the hundreds of other fine buildings in London evidence enough, without going further afield, that architecture, when properly handled, can produce the noblest monuments of which the hand of man is capable?" To this very plain speaking Mr. Stokes appends an observation on the King Edward Memorial for London, "the executive committee for which seems to contain representatives of all possible interests except architecture, the one which enters perhaps more largely than any other into the very numerous suggestions already made for this Memorial." The Corporation members are understood to pride themselves on being before all things good men of business; but surely it is not even good business to ignore the advice of experts; nor, again, is it good business to saddle the City with a bridge that, defying the best architectural opinion, can hardly enhance the City's credit; and the converse holds good. But they have committed themselves to the scheme to which Mr. Leonard Stokes objects so strongly; for, at a Corporation meeting held on Thursday last, the Bridge House Estates Committee's report, recommending the reconstruction of Southwark Bridge to the width of Queen Street Place, and the construction of a new bridge near St. Paul's, at an expenditure of £1,646,983, was adopted almost unanimously. It now, therefore, only remains to be seen whether "nobler views" will prevail when the subject comes before Parliament.

CHRONICLE AND COMMENT.

Mr. A. C. Benson on Ruskin.

At Magdalene College, Cambridge, on Wednesday last, Mr. A. C. Benson opened a course of lectures on "The Life and Work of Ruskin." John Ruskin, he said, was born at No. 50, Hunter Street, Brunswick Square, London, on February 8th, 1819. The house was precisely and typically the very house in which one would not expect so rare a flower to bloom. It was distinguished to-day by a tablet disc like the top of a chocolate birthday cake. Ruskin's father was a successful wine merchant, who was not only an honest tradesman, but a lover of scenery and beauty. His mother must be confessed to have been a grim figure. Much that was tedious had been written about the family, but no doubt when eugenics and Mendelism were more advanced they would be able to trace the breeding of a genius as easily as they now did that of a greyhound. The fact that Ruskin was the son of first cousins and that he was of Scottish descent had a great deal to do with his temperament and character, and Ruskin also owed much to his Bible training. Mr. Benson said he had always regarded it as a supreme blessing that Ruskin by birth and family touched both ends of the social scale. He was essentially a lonely man, partly because he was a dreamer and partly because he gave his heart away. His education was unconventional. His was a thoroughly precious childhood, but one dare not say what should have been altered. He lived too much with his elders and obtained a touch of old-maidishness which never left him. He was entered at Christ Church, and his mother went up to Oxford to look after him. Thus there was a danger that he would become a gigantic joke, but his engaging simplicity and charm triumphed over all obstacles. At the age of twenty-three this young man, with a mind as clear as light and as full of eager force as a mountain stream, sat down in light fashion to write one of the great books of the century, and thereupon he gave up the idea of entering the Church and becoming a Bishop, which had been his father's aspirations for him. Mr. Benson then went on to review Ruskin's earlier works, showed how he was subjected to an artistic conversion on visiting Venice, and pointed out his errors of judgment and how these were affected by the fact that he was not greatly endowed with imagination.

Tapestry of St. Edward for the Abbey.

A tapestry representing the now vanished picture of St. Edward the Confessor, which was painted about 1308 on the back of the chancel sedilia, has been presented to Westminster Abbey by Mr. Henry Yates Thompson. The portrait has been reconstructed with the aid of strong lights by Mr. Tristram, who has been very successful in copying the ancient paintings on the Norfolk screens, and the tapestry has been faithfully woven from his drawing by Messrs. Morris and Company. It is of the simplest possible texture and shading, such as would occur in a Flemish tapestry of the fourteenth century, and measures 8ft. in height by 3ft. 6ins. in width.

Deadlock with the Mall Scheme.

A deadlock has unfortunately occurred with regard to the part of the National Memorial to Queen Victoria at the Charing Cross end of the Mall. The clearance which is required in order to allow the entrance and buildings at this end to be properly seen is not proceeding. Three authorities are concerned—first, the Government, which, through the Office of Works, is executing the scheme; secondly, the Westminster City Council; and, thirdly, the London County Council. As the two latter are understood to take up the attitude that it is the Government's business to carry out the work to a conclusion in a manner creditable not to the metropolis alone, but to the nation, and as the Government, on their part, appear to be looking to the ratepayers of London to bear the expense, the deadlock which has arisen seems to leave only one certain prospect—namely, that the memorial at its principal entrance (the Charing Cross end) will be left hidden away and imperfectly finished. That would be a blot upon the undertaking such as all who value the movement for beautifying London would desire to avoid.

Quality in Stone Carving.

In the annual report of the Sheffield Society of Architects and Surveyors for the session 1909-10 it is stated that the Stone Carvers' Trade Association presented a memorial to the Council condemning the practice of sub-contracting for this class of work. "The Association considers that this course promotes the tendency to accept the lowest tender, irrespective of the quality of the work, and suggests that much of the poor carving of the present day is the direct result of this procedure. The Association asks for the support of all architects, who may help by refusing to pass work which is poor in execution, or not properly finished, and by these means help to raise the standard of quality." With this the Council of the Sheffield Society expresses sympathy, and trusts that members will endeavour to give their support to the movement, which has for its object a higher standard of workmanship.

Conference of Federation Secretaries.

The conception of the annual conference of secretaries of the National Federation of Building Trades Employers was a happy idea, and, so far, has been effectually materialised. The meetings have always been well attended, and the proceedings have never failed of the businesslike and practical character that is natural to a meeting so constituted. The assembly at the Victoria Hotel, Manchester, last Wednesday, was no exception to this rule. The papers read were few, brief, but pithy, and the discussions upon them were of appropriate quality. The most controversial of the papers was that read by Mr. Bertram B. Moss, of Liverpool, on "The Advantages of a Reference List about Architects, Surveyors, Clerks of Works, etc." Mr. R. Budd explained the "Builders' Standardised Accounting under the System of the Builders' Office Organisation Co." Mr. A. G. White, the General Secretary of the Federation, contributed a characteristically thoughtful and philosophical disquisition on "The Need for a more Efficient Means of Ascertaining the Opinion and Wishes of Our Members"; and the address from the chair (which was, of course, occupied by the President of the Federation, Mr. S. Smethurst, J.P.) was all compact of practical wisdom and practicable ideals.

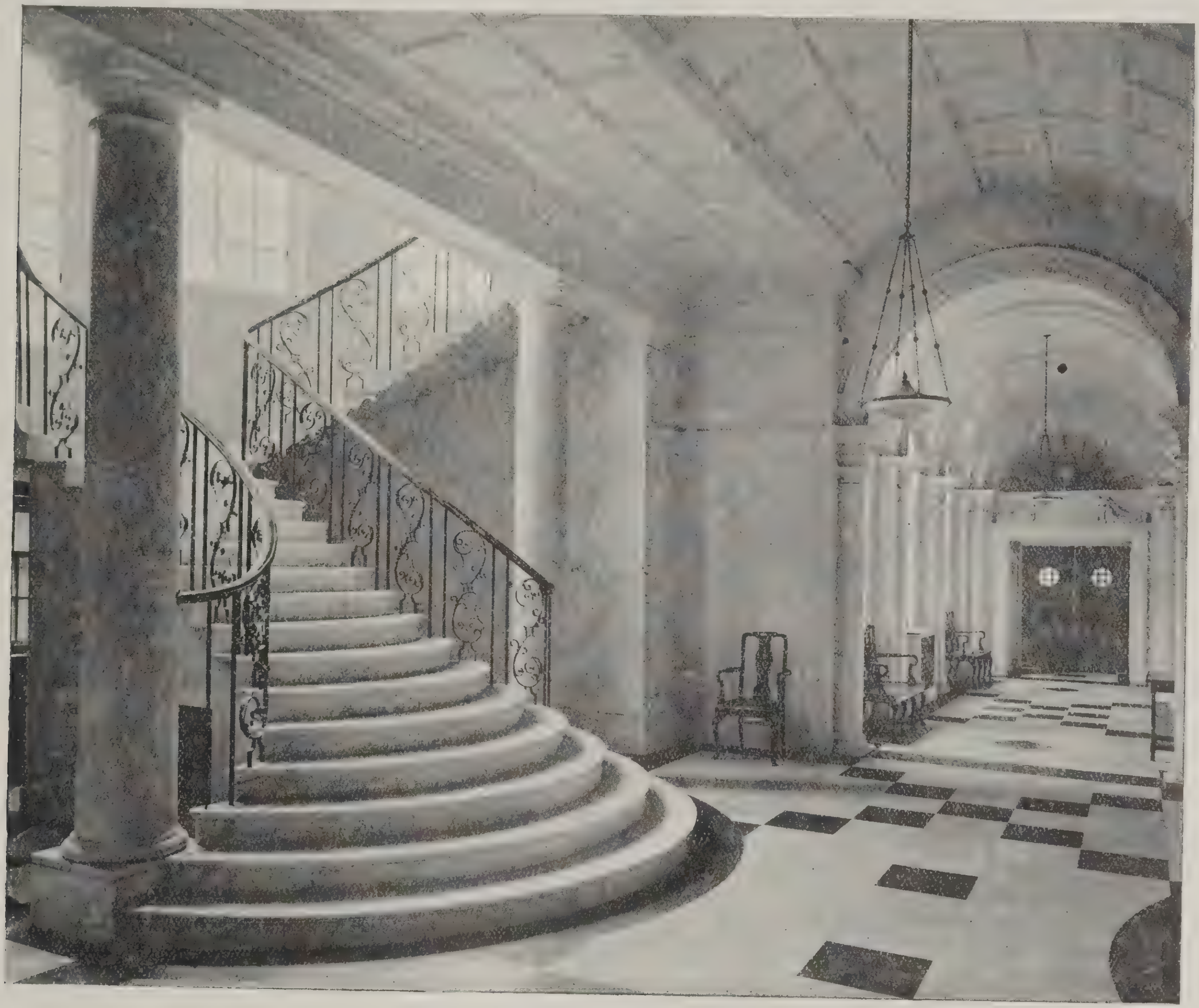
Kirkwall Cathedral.

(See Centre Plate.)

The cathedral of St. Magnus, Kirkwall, was begun in 1137, and works of restoration and extensions were carried on up to as late as the sixteenth century. In the thirteenth century the tower piers and arches were rebuilt, and transept chapels were added. Towards the close of the thirteenth century the apse was dismantled, and an extension of three bays finished square, and was constructed as a presbytery. A roof of timber terminated the tower, but whether as a spire or a dwarf cone, as the tower shows at present, cannot be determined. It was burned in 1671. Restorations were conducted in 1856. In the early part of last century the choir end of the fabric was fitted with galleries, and the area set out with closed pews. Under the will of the late Sheriff Thoms a large sum was set apart for restorations, repairs, etc., including the removal of the galleries and the reseating of the whole fabric, also for the insertion of a stained glass window to the Sheriff's memorial, and by his will the Sheriff suggested Hippolyte J. Blanc, R.S.A., architect, to be entrusted with the work. Our illustration shows the interior looking from the transepts eastward, delineating the effect of the removal of the galleries and also of the glazed screens between the choir and transepts and the opening up of the triforium and the removal of the lath and plaster infillings. The other portions were proposed to be confined to repairing the masonry of the exterior where required, but in no way disturbing the plan of the main building.

The Albemarle Club.

The Albemarle Club was founded in 1874, and is one of the earliest of its kind—being both for men and women. New premises being desired, the club acquired, a year or two ago, No. 37, Dover Street, W., built in 1765-1774, from designs by Sir Robert Taylor, and formerly the Bishop of Ely's house. The shape of the site necessitated a long corridor to the chief rooms on the ground floor, and, in order to obtain this, unobstructed, the old stone staircase from the ground to the first floor, was removed and re-fixed above. Owing to adjoining lights, it was not possible to connect the front and back portions of the building above the first floor, so the main staircase, which is placed half-way along the corridor, is only carried up one floor, and east and west staircases are continued above. The work is carried out with great skill, and is very carefully detailed. Messrs. Smith and Brewer, of Gray's Inn Square, were the architects.



NEW MARBLE STAIRCASE AT THE ALBEMARLE CLUB, DOVER STREET, LONDON, W. SMITH AND BREWER, ARCHITECTS.

A Philistine View.

The Philistine view of architecture and town-planning is frankly confessed by a writer in an evening paper, who openly rejoices at the thwarting of Wren's town-planning scheme, and thinks that "we have a nobler cathedral for our money than we should have had if we had given Wren that free hand which Mr. Lewis Hind demands for the artist in all circumstances." Sir Christopher, he acknowledges, would indeed have given us a noble city of Roman dignity; "but it would not have been London." There goes an old tale to every one of those crooked alleys and rambling streets which Wren's plan would have swept away. This view of Wren as a wild enthusiast who was only kept from folly and iconoclasm by the interference of the bumptiously ignorant is neither new nor in itself important; but it is nevertheless not totally destitute of value. It proclaims aloud the kind of thing which (minus, perhaps, the mawkish sentimentality about crooked alleys and rambling streets) the "commonplace man"—the designation is the writer's own—steadfastly believes, but seldom ventures to formulate. "We," he writes, "the dull public, called the tune in the case of Sir Christopher Wren's great project, and I am still prepared to defend our seventeenth century obstinacy."

The Tower of Southwark Cathedral.

When the new nave of Southwark Cathedral was built by the late Sir Arthur Blomfield the tower and eastern part of the building was not dealt with. Various defects having appeared, the Cathedral Committee called in Messrs. J. Oldrid Scott and Son to report on them. Their report was agreed to, and the tender of Messrs. Doves, of Islington, accepted. The work is now in hand. The exterior of the tower is in a very bad state, the stone facing being extensively decayed. It consists of various kinds of stone which was inserted at different times, nearly all being decayed, and giving the tower a very unsatisfactory appearance. This is now being largely renewed with Chilmark stone.

SOCIETIES & INSTITUTES.

Society of Architects.

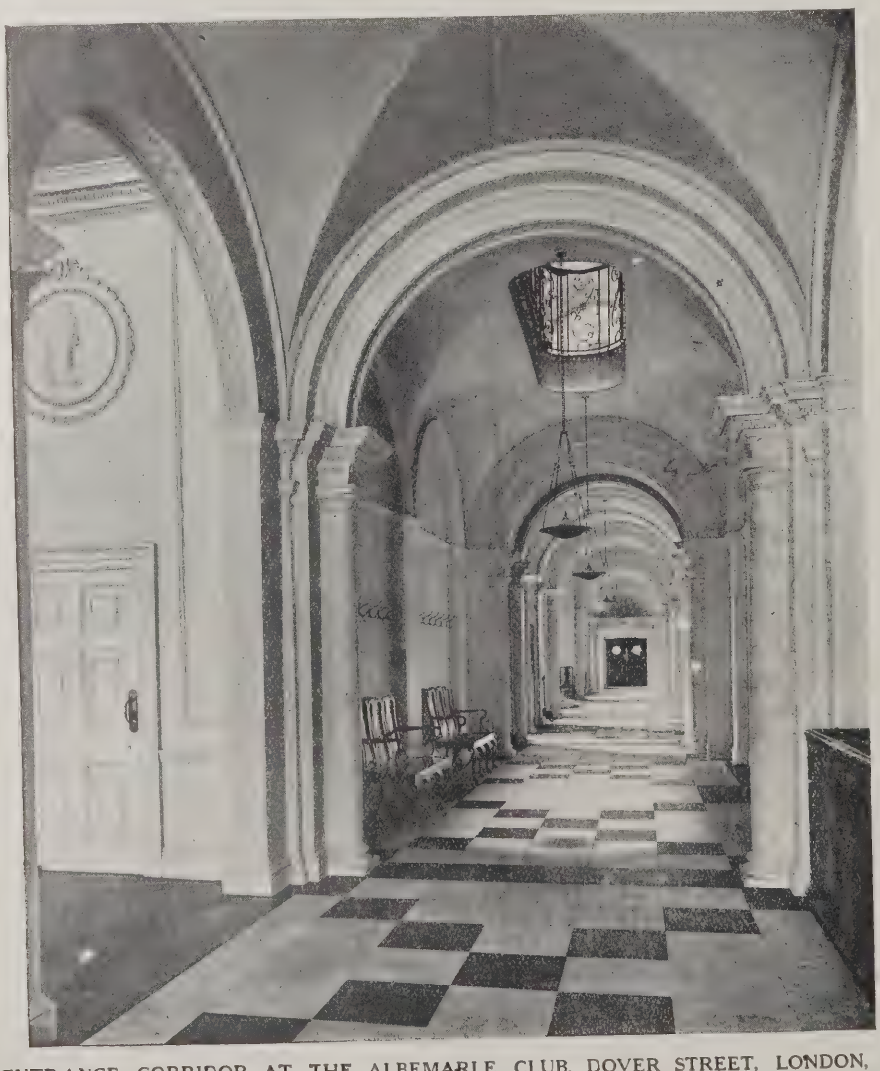
The 26th annual report of the Council was presented to the annual meeting of the society held on Thursday last. With reference to architects' registration the Council point out that the past year has not been propitious for dealing with the matter in Parliament, but progress has been made in other directions, and the Council feel that the way is being gradually cleared in the direction of a more united profession on this question. The Council have no intention of departing from the policy which the Society has hitherto pursued in regard to registration, "and it may again be stated that any Registration Bill which may be promoted elsewhere cannot be successfully carried through without the assistance of the Society." The Society are moving from Staple Inn Buildings to their new premises at No. 28, Bedford Square, which has been adapted to their needs under the direction of Mr. C. FitzRoy Doll, F.R.I.B.A. The formal opening of the new premises will take place on Wednesday, November 16th.

Birmingham Architectural Association.

In the course of his presidential address to the Birmingham Architectural Association last week, Mr. A. S. Dixon dealt at some length with brickwork. He said that the normal size of bricks, 9ins. by 4½ins. by 3¼ins., though no doubt the largest which could be conveniently handled with one hand, was constructively a bad shape. A wall built of such bricks was liable to cracks at a high vertical angle. The angle of possible cracks would be more nearly horizontal if the bricks were either thinner or longer, and in any case the æsthetic effect would be much better. Mr. Dixon passed on to consider the ways in which brickwork had been decoratively treated in the past. In Normandy, and especially in the neighbourhood of Dieppe, a school of bricklayers seemed to have come into existence who treated their bricks with such half-magic skill as to make one feel that no building material in the world was to be preferred to it. They played their wonderfully delicate pattern tunes in a scale of only three or four colours, and in some instances it seemed simple enough, but when we had tried to match it in England, such was the failure that unless he had happened to see the real thing it would be hard to make an Englishman nowadays believe that multicoloured brickwork could be good.

Liverpool Architectural Society.

At the meeting of the above Society held on October 17th, a paper was read by Mr. James Parkinson on "Specifications and Quantities." The author said he thought it was quite time that certain clauses were revised, some deleted altogether, and others inserted in their place. The clause asserting "that no compensation would be paid to the contractor for any losses or increased outlay that might arise through the drawings and specifications," and also "that any portion of work obviously necessary and not described in the specifications or quantities should be carried out by the contractor in a satisfactory manner and without any extra charge" were unjust. It was quite enough to be responsible for damage to life and limb without being made responsible for the architects' or surveyors' mistakes and omissions. They should each bear the brunt of their own mistakes, and these clauses should be removed. Then, again, contractors had often to wait an unreasonably long time for the final settlements of their accounts, and to his mind a new clause was necessary to the effect "that all accounts should be gone into and the final certificate granted within two months after the account has been rendered or 5 per cent. interest paid on the balance."



ENTRANCE CORRIDOR AT THE ALBEMARLE CLUB, DOVER STREET, LONDON, W. SMITH AND BREWER, ARCHITECTS.

Bristol Society of Architecte.

The opening meeting of the winter session of this society was held at the Fine Arts Academy last week. In response to the invitation of the President, Mr. Foster Wood, a good company of the members assembled in the principal galleries, which were suitably decorated for the occasion. Mr. Wood had arranged an exhibition of photographs, and part of the collection of the late Mr. John Foster, illustrating many beautiful architectural subjects, chiefly French, German, and Italian. Other contributions included photographs illustrating the society's summer excursion to Broadway, by Messrs. Lawrence, Denning, and A. R. Gough, together with a large number of illustrations of modern work kindly lent for the occasion by Messrs. Bedford Lemere and Thomas Lewis. The next meeting of the society takes place on November 14th, when an illustrated paper on Fountains Abbey will be given by Mr. G. H. Oatway, F.R.I.B.A.

Sheffield Society of Architects and Surveyors.

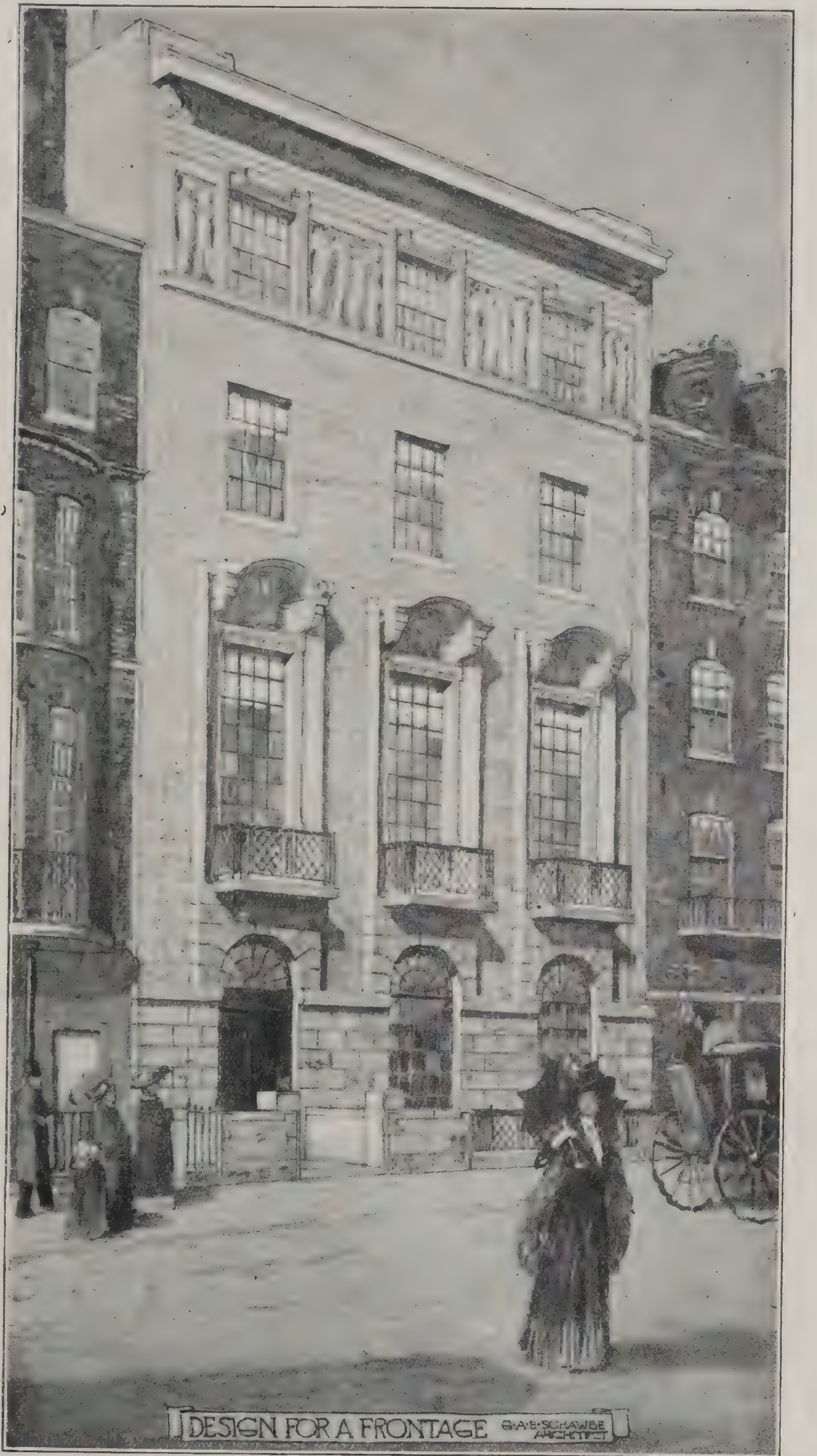
The opening meeting of the current session of the Sheffield Society of Architects and Surveyors was held on Thursday last. Mr. W. J. Hale, F.R.I.B.A., the president, entering on his second year of office, made reference to the Town Planning Act, and stated that regulations could now be made which might seriously decrease the potential value of a piece of land, but the owner would be without redress. Whether that was right or wrong did not concern them, but, as architects, they could rejoice in the fact that some restraint could now be exercised upon the exuberance and enthusiasm of the cottage house builder. What did concern them was that the power conferred on the local authority should be used for the benefit of the citizens at large, not merely for one class of the community. The local authority now had the power to determine how many houses should be placed on an acre of land, but if it used that power only with regard to cottage property it would be leaving an important part of its work undone.

South-Western Polytechnic.

The Calendar and Prospectus of the Day and Evening College for Men and Women at the South-Western Polytechnic, Manresa Road, Chelsea, S.W., includes particulars of trade classes in carpentry and joinery, painting and decorating, and plastering. There is a day school of art, and there are evening classes in architecture, to which Mr. Banister F. Fletcher, F.R.I.B.A., is delivering a course of twenty lectures on (I.) Mediæval (Romanesque and Gothic), and (II.) Renaissance and Modern; in Building Construction and Drawing, conducted by Mr. E. P. Wheeler, A.R.I.B.A., and Mr. F. G. Stephenson, A.R.I.B.A.; in Mechanics for Builders, conducted by Mr. W. C. Houston; in Land Surveying and Levelling (Mr. L. Lickis, F.S.I.); in Practical Geometry (Mr. E. L. Bates), and in Practical Mathematics (Mr. F. Charlesworth). There are also several courses of Electrical Engineering.

University of London.

A course of five lectures on "Reinforced Concrete" will be given at the Institution of Civil Engineers, Great George Street, Westminster, S.W., by permission of the Institution, by Mr. W. Dunn, at 5.45 p.m., on Fridays, November 4th, 11th, 18th, 25th, and Wednesday, November 30th, 1910. The chair at the inaugural lecture will be taken by Sir Henry Tanner, I.S.O., F.R.I.B.A. The following is the syllabus:—On patents—concrete for various purposes—columns and compres-



This was a suggested design for a new front to the premises of the Royal Institute of British Architects in Conduit Street, London, W. Portland stone was the material proposed to be used, with bronze balconies and railings, and the general effect heightened with bas-relief sculpture and careful detailing. The design, by Mr. G. A. E. Schwabe, of Buxton, was included in this year's Royal Academy Exhibition.

sion members—longitudinal reinforcement—lateral reinforcement in various forms—column footings and other details—on beams and reinforcement to resist bending—labour-saving tables—shearing and shearing reinforcement—retaining walls—dock walls and jetties—bridges—girder bridges—arch bridges—failures in reinforced concrete—quantities and cost data, etc. In addition to the lectures, a demonstration will be given at University College, showing the manner of failure of reinforced concrete columns and beams in the testing machines. The lectures are addressed to advanced students of the University and others interested in the subject dealt with. Admission will be by ticket obtainable on application to Dr. P. J. Hartog, Academic Registrar

PICTURE EXHIBITIONS.

The Goupil Gallery.

We have not always been able to feel much interest in the collections of pictures from time to time exhibited under the title of "The Goupil Gallery Salon," which often contain a good deal of crude and unattractive work. But the exhibition now on view is on a higher level than usual, and contains a great deal which is of interest. Among the pictures in the ground floor room we may especially mention Professor Moira's fine landscape, "Radcot Bridge," which has much of the quality of Constable, and Mr. Harold Knight's "The Reader," a large picture in which the figure of a girl in a dark blue dress is relieved against a brightly lighted landscape, with a powerful effect of realism combined with great breadth of style. Mr. Glyn Philpot's head of a man, with dead birds, entitled "The Poacher," is a work of considerable power; and for once we can admire Mr. Peppercorn's treatment of nature in a finely composed landscape, "Near Porchester." The ante-room contains some fine water-colour sketches by Mr. Russell, Mr. Carter, Mr. Rich, and others; and Mr. Ranken exhibits a powerful study of the columns of "The Parthenon" seen against a dark-blue sky. The first floor galleries contain some good landscapes; among them Mr. Bertram Priestman's "Sunshine and Mist," a real sunlight effect, and Mr. Friedenson's "The Sand Quarry." In the third room Mr. Orpen's life-size figure, "Bright morning by the sea," is a fine study of colour, light, and movement, in which the face of the figure is the weakest element. Mr. Von Glehn has a brilliant study of "Shipping, Venice," rather in the manner of Mr. Sargent; and among other things is a beautiful landscape by Miss Alice Fanner, "Le Petit Luxembourg, Paris," and a grand oil sketch of landscape and cattle by Mr. Arnesby Brown. There are also a number of interesting studies and sketches, in water-colour, and black and white, in the second floor rooms. The exhibition is well worth a visit.

The Leicester Galleries.

The Leicester Galleries contain two collections of unusual interest—Mr. Rackham's illustrations to "The Rhinegold" and "The Valkyrie," and Mr. Hugh Thompson's to "The Merry Wives of Windsor" and "As you like it." Mr. Rackham's genius in the grotesque is powerfully displayed, as might have been expected, in his conceptions of Alberic and the giants, and the Mimes; but he exhibits also great beauty and nobility of design in some of the more serious creations of the legend. His "Brünnhilde on the look-out rock" is a glorious creature, the very embodiment of the warrior-maiden. Some of the Rhine-maiden designs, especially the small design called "Rhine-maiden lamenting," show remarkable beauty of line. The collection is full of imaginative quality. The illustrations to the "Ingoldsby legends" we do not care so much for, and it is a question whether, in the present day, they are worth illustrating; their vogue is long past. Mr. Thompson's figures of Falstaff and Master Slender are delightful in their satiric humour, especially Falstaff's love-making (No. 12), and Slender reading to a very bored young lady out of "The book of riddles" (3). The illustrations to "As you like it" are less interesting, but Touchstone and Rosalind are very well presented. The series in illustration of Esmond show more drawing of costume than of character. The water-colour studies of animals by Mr. Dacres Adams, in the same room, are excellent; broadly executed drawings in which the build of each animal is indicated without any unnecessary or superficial finish. Altogether a most interesting exhibition, to be followed next month by collections of drawings by M. Dulac, Mr. Sutton Palmer, and Mr. Anning Bell.

Institute of Oil Painters.

The walls of the Institute in Piccadilly are too large to be covered easily by works mostly on a rather small scale, and both the oil and the water-colour exhibitions show a considerable proportion of works which, though up to a good standard of execution, are without any special interest. In the first room, Mr. Ginnett's "Crimson and Brown—The Torn Brocade," is a good picture of an interior with a figure. Mr. Hughes-Stanton's large picture of "Sunrise—Athens" is a powerful piece of effect, but he has surely rather exaggerated the height and scale of the Acropolis hill. Miss Airy's half-length of a boy, "The Wine-taster," is a clever work; so is Mr. Penn's "The Drudge," in the second room, a work of somewhat the same class and character. In the second room, too, is a really fine landscape by Mr. Montagu Smyth, "An English Waterway" (painted in a French style). There are other good landscapes in the room. In the large gallery, Mr. John R. Reid's "The Clachan, Ben Venue," is a landscape in his usual broad open-air style. Mr. Wetherbee's "Strayed Mariners" is, we think, the third repetition we have seen of the same subject—an antique sailing-ship plunging suicidally, with sails filled, right on to a rocky shore, watched by a naked nymph or siren in the foreground; an effective picture, certainly, but the behaviour of the ship seems a little improbable. The same artist contributes a fine early morning landscape, in which a group of lambs is introduced as "Forerunners of the Day." Among other works to be noted are Mr. Spenlove's "Night's Symphony"; Mr. Baird's "The Reaper," which would make a good decorative frieze; Mr. Snell's "A Derbyshire Dale," which he has filled with sunlight; Miss Gloag's "Bacchante and Fauns," a spirited and well-drawn bit of Paganism; Mr. Frank Walton's "Sutton Place Farm," most conscientiously executed landscape, a little too hard and precise in the painting of the foreground trees; Mr. Yglesias's "Old Farringdon Market" in the snow, with St. Paul's as a background; and Mr. Lavery's charming portrait of a little boy in a white frock. Mr. Jacomb-Hood, Mr. John White, Mr. Aumonier, and other well-known artists, are among the exhibitors.

Royal Society of British Artists.

The exhibitions of this Society at the Suffolk Street Gallery seem to have a certain staying power, and go on year after year, the collection as a whole never rising above mediocrity. The present one is a little above the average; there are some good landscapes, among them Mr. Foweraker's view of "Albi" with its fortress-like cathedral crowning the height; a picture interesting, too, in an architectural sense. Mr. H. W. Adams's "British Camp, Malvern Hills," is a fine winter landscape. Others that may be named are Mr. Gould's "Valley of the Torridge," Mr. Walter Fowler's "A coming shower," and a large "decorative landscape" by Mr. Alfred Hartley, good in composition, but rather unwholesome in colour. Then one is suddenly brought up by the picture of "An English Manor," by Sir Alfred East, painted with the force and vigour of a real landscape artist, and not a mere picture-maker. There are some good portraits and figure pictures of an academic type, and (as usual) a good many pleasing small works among the water-colours.

The Carfax Gallery.

There is little enough of beauty in most of the small works (little more than sketches and studies) by Mr. A. Rothenstein. To read the word "Romance" in the catalogue, as the title of the drawing, and then look at the drawing, rather takes one's breath away. There are some good pencil studies of figures, and the landscape called "Souvenir" is a good little sketch suitable to its title. But the collection is—

> "Thin sown with ought of profit or delight."

The Fine Art Society.

The Fine Art Society's Rooms contain collections of works by several artists, the most important being the pictures by Mr. W. T. Wood illustrating "Evening, Night, and the Dawn." These, of course, are studies of special effects of light and atmosphere, including some very successful moonlight pictures, a class of picture often spoiled by introducing more light and colour than moonlight ever gives, a mistake which Mr. Wood has avoided. There are one or two grand studies of cloud effect (No. 40 especially), and the collection as a whole is full of beauty. Mr. Edwin Noble exhibits a number of very clever animal studies, and Mr. Paul Woodroffe a series of water-colours in illustration of "The Tempest," which show poetic invention, and fine quality of colour.

MAGAZINES & REVIEWS.

In the "Art Journal" the most interesting paper to architects is that by Major Wilkinson on "Dinan," with illustrations by the author, in which the picturesque streets of the old town are brought before us very cleverly. Mr. Hind's "Consolations of an Injured Critic," which has been going on for some months, is a kind of small-talk of and around Art, the chief use of which seems to be to furnish occasion for the sprinkling of a good many illustrations over the pages. One of these is Rodin's ghoul-like ébauche, which he impudently labelled "Balzac," which was rightly refused by the committee who had commissioned the statue, and over which many silly people have gone crazy. "Gardens in Japan" is the subject of an illustrated article by Mr. R. H. Smith. It seems that the Japanese regard our revived idea of formal gardens as an absurdity. Their gardens, on the other hand, seem as if they had been made by accident. The illustrations here do not convert one to the Japanese ideal, at all events.

In the "Burlington," "Notes on Italian Medals," by Mr. G. F. Hill, is continued, with a good many illustrations. Mr. Clutton Brook contributes a paper on "The Weakness and Strength of Turner," a subject of interest in itself, but a theory of Turner's weakness and strength which puts "Petworth Park" above the "Téméraire" seems *ipso facto* suspect. We quite concur in an editorial note suggesting that steps should be taken to procure a better representation of Holman Hunt's work in the National Gallery.

The "Edinburgh Review" contains an article on the interesting subject of "The Gothic contribution to Renaissance Art," considered apparently more in reference to sculpture than architecture. The conclusion of the author seems to be that Gothic influenced the Italian Renaissance; which, as far as architecture is concerned, is just what we should question. Gothic never took fair hold upon Italy, and the Italian Renaissance in architecture was just the throwing over of what hold it had. The real Gothic contribution to the Renaissance, in architecture, is to be found in France rather than in Italy. The same issue contains a very sensible article on "Eastern Art and Western Critics," in which some plain truth is spoken as to the futility of the attempt made by certain writers on art to persuade us that Indian and Chinese paintings are just as good art as, say, Greek sculpture, and as beautiful if we will only look at it from the right point of view. This is another of the artistic crazes of the day, which will probably not last very long; but we are glad to find an important review like the "Edinburgh" taking a sound view of it.

In the "Fortnightly Review," Mr. Madox Hueffer writes an article on Holman Hunt, rather vulgar in its sneers at the Academy and at various persons who did not like Mr. Hunt's art, though we quite agree in his estimate of some of Mr. Hunt's pictures, and that such a painting as "Strayed Sheep" establishes its author as a great painter. But it has to be remembered that there is a good deal in Hunt's method of painting and his view of the relations between art and nature which is much open to criticism, and cannot be accepted as showing a right path in art, however one may acknowledge its power from the painter's point of view.

The "Berliner-Architekturwelt" is largely taken up with illustrations of the work of the classes in connection with the Industrial Art Museum of Berlin; designs for rooms, and designs for various decorative details. Some of these are good, but on the whole they do not seem up to the level of the best National Art Schools work in England, and some of the decorative design is by no means in the best taste. Illustrations are also given of the new Rath-haus for Frankfort-on-the Oder, and also that for Friedenau; both by Herr Otto Kohtz, an architect who seems to have a style of his own, if that can be called a style which seems a medley of eccentricities, and makes a Council House look like an odd sort of magnified cottage.

The "Contemporary Review" contains an article on Holman Hunt by Mr. W. M. Rossetti, partly concerned in setting right some misconceptions on Hunt's autobiography in regard to Dante Rossetti, and his relations with the Pre-Raphaelite brotherhood; but it also contains some appreciation of Hunt's art which is in bette taste than Mr. Hueffer's article before referred to.

The "Home Counties Magazine" contains, among other articles of interest, one (which is to be continued) on "The open air statues of London," with photographi illustrations which are, however, too smal in scale to be of any value except fo identification. The article serves to remind one of a great many such statue which one hardly notices in daily walks i London, partly because one gets used t them, partly perhaps because most c them are of so little character or interes They are a poor set on the whole; it is onl here and there that we come on a wor that has some artistic distinction abou it. There has no doubt been some im provement of late years, and a sculptor of eminence is now usually employed; but the mistake is too frequently made of producing realistic costume statues, whereas a portrait bust with symbolical figures or reliefs in connection with it is far preferable, and avoids the rather ludicrous effect produced by sculptured tailoring.

FIRE PREVENTION NOTES.

Some Recent Fires. Among the more notable fires that have occurred since the last issue of our Fire Prevention Notes, was one at Messrs. Vickers, Sons, and Maxim's naval construction works, Barrow, where the large joiners' shop (300ft. long, and about 90ft. wide), and several other departments were destroyed, the damage being estimated at £30,000. The fire seems to have originated in the joiners' shops. On the same day there was a destructive fire at Croydon, which, breaking out in a fried-fish shop, spread over a covered passage to a cinematograph theatre, only the roof of which was destroyed. It is significantly recorded that "the female assistants in a drapery establishment near by were so alarmed that they hurriedly left the building, many of them in their night attire." The draper's shop was in no way involved; but, in view of recent events, the alarm of the girls is only too easy to understand. One has, indeed, a haunting fear that panic among assistants who live in a state bordering on chronic terror may at some unlucky moment result in catastrophe.

Nervous Panic. In order to get rid of this highly dangerous state of nervous tension, it is necessary to employ visible and tangible means to restore a reasonable measure of confidence. Drapery establishments, it is perfectly obvious, require very special attention. If the owners of such buildings will not give it voluntarily, they must expect that the Legislature will require it of them. In fact, it will be surprising if, in the circumstances, they much longer escape the special legislation which in certain quarters is being vehemently demanded. Legislation would probably take the form of a demand for better means of escape from fire—a good thing in its way, no doubt, but perhaps less necessary than provision for actual fire-prevention. Means, both structural and material, exist in abundance for rendering even a drapery establishment reasonably immune from ignition. That they are not generally adopted is due partly to false notions of economy, partly to ignorance, and partly to the complaisance of architects who refrain from insisting strongly enough on the necessity of incurring the slight extra expense which would place even a drapery store within the category of ordinary risks.

Another Drapery Fire. A further destructive fire at a "general outfitters and drapers'" has occurred in Islington. The fire, which did damage to the extent of thousands of pounds, is said to have started in a shop where large stores of furniture and linoleum were kept, and was soon raging so fiercely that thirty fire engines and 200 men were unable to do much more than prevent the fire from spreading to adjacent premises. The frequency of such fires lends force to the suggestion that the highly combustible contents of the buildings involved ought to be more systematically, not to say scientifically, stored. At present they are only less dangerous than high explosives, and yet, in order to make an attractive display, they are, in the majority of cases, disposed about the premises in such a primitive fashion as to make immunity seem no more than a lucky accident.

Dangerous Display. Surely they could be displayed in greater safety with less profusion, and more use could be made of the many materials available for the construction of light and elegant fire-proof receptacles, on which a spark might fall, or against which, for at all events a short time, a flame might play, without much danger of ignition; instead of which, it is the universal practice to store flimsy materials in highly inflammable cardboard boxes, which are placed on woodwork shelves that are as dry and inflammable as tinder. From their fireproof receptacles the goods could be produced as required, instead of being scattered about the premises in lavish display, and thus left at the mercy of the many agencies of spoilage, and destruction.

Fire-Escapes and the London County Council. Although the act by virtue of which the London County Council have power to call upon an owner to provide means of escape in case of fire has been in force for five years, there have been few cases decided with regard to it. Its terms are very simple. The expenses must, in the first instance, be borne by the owner; but if he (the tenant) is liable under his lease, or by agreement, he may be called upon to contribute part or pay the whole. The terms of S. 20 of the Act are (in a shortened form) as follows: "The owner . . . who has paid or incurred the expenses . . . . may . . . apply to the County Court . . . and such . . . court may thereupon issue a summons requiring the several persons entitled to any estate or interest in the building to appear before the court, and the court may make such order concerning such expenses or their apportionment among all the several persons entitled to any estate or interest in the building as appears to the court to be just and equitable in the circumstances of the case, regard being had to the terms of any lease or contract affecting such building."

Relief from Liability. The absence of decisions bearing on this section is probably due to the fact that tenants have been so bound by the covenants in their leases that they have paid the whole costs without a murmur, whereas occupying owners who have been called upon to pay are not concerned with the provisions of the section. A recent case in the Shoreditch County Court, however, shows that a tenant in occupation under a lease made before the Act came into force may be relieved of some part of his liability. In that case, an order was made upon an owner to provide the means of escape from premises let under a 21 years' lease made prior to 1905. The cost of the fire escape was £77 9s. 4d., surveyor's fees were £5 5s., and solicitor's fees £15 15s. The tenant was subject to the usual stringent covenant as to payment of all outgoings, charges, assessments, etc. The County Court judge held, in the first place, that the solicitor's costs could not be made part of the burden to be placed on the tenant, and in apportioning liability for the remainder, he decided that the tenant was liable to pay three quarters, and the landlord one quarter. He felt himself entitled to place some of the burden on the landlord, because it was reasonable to presume that, if the lease came to an end without the necessary works being carried out, the County Council would still be entitled to call upon the owner to do the work. The value of the premises was then materially enhanced.

The Application of a Principle. One sees in this case the application of a principle which ought, in justice to be more often applied as between landlord and tenants. There are many liabilities foisted upon tenants, and voluntarily incurred by them, which should be borne in part at least by the owners of property. True, they are imposed by the lease, and liability has been accepted by the tenant; but they are none the less hard to bear. This decision above set out shows that the legislature has conferred a measure of relief upon tenants, but when leases made since this Act came into force are examined, it will probably be found that an express covenant is inserted imposing upon the tenant the whole liability for this particular outgoing.

Brick v. Cement. In the United States, the brick builders and the concrete construction contractors are more sharply divided, and more bitterly antagonistic to each other than, it is to be devoutly hoped, they will ever be in this country. They lose no opportunity of scoring off each other. Thus the "Brick" publishes the following statement: "We have lately noticed in various concrete publications and advertisements a recapitulation of the assertions that were made by the same people with such great effrontery at the time of the Baltimore and San Francisco fires. The substance of the song is that reinforced concrete saved both cities; that it was the reinforced concrete buildings that stood best, etc., etc. All this is very amusing when we remember that there was not a single reinforced concrete building in the fire zone of San Francisco, for such construction was prohibited by law, and that all the concrete there was present existed in column protection, and in floor arch filling between steel beams. In Baltimore, likewise, there was one insignificant four-storey concrete building, and one reinforced concrete storey in another building. All the other concreting was in steel framed buildings. Yet, remember, that it was the reinforced concrete buildings that saved Baltimore!"

The Retort Courteous. To this the "Cement Age" retorts: "We are glad to have an influential journal like 'Brick' sustain a statement made in 'Cement Age,' namely, that there were no large reinforced concrete buildings of the modern type in Baltimore or San Francisco when those cities were destroyed by fire. It is only recently that a prominent magazine published an attack on concrete in which it was alleged that this material was destroyed by fire in both conflagrations, leading the reader to infer that reinforced concrete buildings had proved vulnerable under practical tests. There isn't a particle of evidence to show that concrete saved either city, and we are to have 'Brick' corroborate our statement on that point. While such concrete features as had been introduced in several buildings made a better showing than any other material, there were, as stated, no important buildings constructed of reinforced concrete throughout. In expressing appreciation of 'Brick's' strict regard for the truth, however, we cannot refrain from calling attention to the indisputable fact that there were hundreds, if not thousands, of brick buildings in both cities, many of them in the so-called fireproof class, and it is entirely pertinent to inquire as to what happened to them."

The Important Point. It is not often that rival newspapers in America are so remarkably polite to each other. But the chief point to be noted is that the chief point at issue between the rival materials —brick and cement—is, which of the two affords the better protection against fire? Into the merits of the general question it would be profitless to enter; but this intense concentration on the all-important object of fire-proofing buildings is very noteworthy, and we should like to see the interest in it similarly intensified in this country.

COMPETITIONS.

Nottingham Eye Infirmary.

Seven firms of Nottingham architects were invited to take part in a competition for designs for a new eye infirmary, to be built with frontages on the Popewalk and Oxford Street, and the assessor, Mr. A. N. Bromley, has given his award to Mr. A. Marshall, King Street. The expenditure is limited to £8,500. In the designs provision is made for 14 beds for males, and the same number for females. There is to be a flat roof of reinforced concrete covered with asphalt, and all the floors are to be of steel and concrete, with fireproof ceilings to the top floors, while maple-wood blocks will form the floors of the wards, and of the out-patients' department. The total space is 227,878 cubic feet, and it is estimated that the scheme can be carried out at 8¾d. per cubic foot, making a total of £8,308 6s.

Stockport Library.

The result of the competition for a library at Stockport is announced as follows,—1, Bradshaw and Gass, Bolton; 2, Joseph Holt, Manchester; 3, G. H. Wenyon, Dudley.

Sheringham Council Offices.

At a meeting of this Council held on October 14th, the Council selected the plans submitted by Messrs. Stanley Simons and Co., of Sheringham, as the most suitable for their requirements, and next in order of merit were: F. Endell Rosser, M.S.A., of Staines, and F. R. Scott, of Norwich.

East Anglian Institution for Blind and Deaf Children, Gorleston-on-sea.

The awards in this competition were announced in last week's issue. Upon the competition generally and the successful competitor's design, the assessor reported as follows:—

"The conditions and instructions to competing architects supplemented by answers given to certain questions put by competitors have made quite clear the requirements of the governors, and they may be congratulated upon the result of the competition. A great deal of thought and labour has been expended by all the competitors, and some quite admirable designs have been produced.

"The problem set to the competitors was not a simple one, especially in view of the number and variety of the buildings comprised in the whole scheme. The grouping and inter-relation of these buildings and their position on the site and aspects secured must constitute important factors in any decision upon the respective merits of the designs.

"Compliance with the regulations of authorities concerned, efficient drainage, economy of cubical contents and cost and the provision for playing fields are all among the matters which have had my careful consideration.

"I have carefully compared all the designs submitted, and I place first that numbered 3. The drawings present an extremely well thought out scheme. The plan is well arranged and is most economical; corridors are short, and there is no wasted space; the buildings are well lighted and ventilated; the drainage is simple and efficient. The arrangement on the site secures to the full all advantages of aspect; the elevation is simple, suitable, and expressive.

"Rather more than half the site is left free for playing fields, which moreover are well situated to obtain the maximum amount of sunlight and, for a considerable area, come under the shelter of the buildings from the N. and N.E. winds.

"The future enlargement of the Institution would be simple. I have checked the cubing of the building as given by the author of the design and it is reliable.

"With regard to cost, I am of opinion in view of the variety and extent of the accommodation to be provided that the whole of the work will not be carried out with such satisfactory finishings although of the simplest kind as are properly required for buildings of this character within the limits laid down by the governors. This design is most economical in plan and treatment, and the author estimates the cost at £7,865 0s. 0d. The estimate is fairly made, but must, I think, be regarded as sanguine."

LIST OF COMPETITIONS OPEN.

OCTOBER 31, ETC., ROMFORD GARDEN SUBURB. Particulars in our issue for October 12.

NOV. 5. JAN. 14, 1911. TREVOR SQUARE ESTATE, KNIGHTSBRIDGE. Particulars in our issue for October 10th.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—Particulars in our issue for October 19th.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in our issue for October 12.

DEC. 1. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. Particulars in our issue for October 12.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12.*

[*The Council of the Society of Architects recommend to their members "the desirability of not competing."]

DEC. 14. DOUGLAS (ISLE OF MAN.—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

MARCH 15, 1911. THEATRE AT SAN SALVADOR. A competition, open to the architects of all countries, is announced in connection with a projected new theatre at San Salvador. The author of the first premiated design is to receive 8,000 francs, and 4,000 francs will be awarded as a second prize. Particulars may be obtained from M. le Dr. Guillen, Chancelier du Consulat Géneral de San-Salvador, 14, Rue de Vaugirard, Paris. The last day for sending in drawings is March 15, 1911.

OBITUARY.

Mr. J. W. Clark.

Mr. John Willis Clark, who died at Cambridge on October 10, at the age of 74, had written books on a great variety of subjects—topographical, biographical, bibliographical, and antiquarian—and his *magnum opus* was the "Architectural History of the University and Colleges of Cambridge," which he edited and greatly enlarged from the manuscript of his uncle, Prof. Willis.

FIRE-RESISTING ROOFS.

"This is the day of permanent and fire-resisting roofs," says an American writer, and, in the States, as in this country, nothing in building development is more striking than the rise in popularity of various permanent roofing materials. "The high-grade permanent roofs of various kinds—slate, clay, tile, high-grade sheet metal, cement, asbestos, metal shingles, etc."—are, everywhere in the States, superseding the wood shingles that were formerly so common a covering for country houses. The change is partly due to the comparative scarcity of wood, partly to the extension of the railways, which while they brought the sparks which set fire to the wood shingles, brought also the fire-resisting materials that are being generally adopted: cause and effect thus being in close association. To show the necessity for the increased adoption of fire-resisting materials, it is picturesquely, if somewhat ambiguously, stated that in America "a house catches fire every three minutes," causing a fire loss amounting in 1908 to the astonishing total of 579,000,000 dollars, representing "a fire burden of three dollars each per year for every man, woman, and child in this country." Against this 300 cents. per capita, the rate for Germany is only 49 cents., while that for Italy is but 12. The reason for the excess is that sixty per cent. of the American fires are caused by sparks from chimneys, locomotives, etc., and by fires spreading from adjacent buildings by way of the wood-covered roof. The substitution of fire-resisting materials will in course of time reduce these appalling figures to the normal or average. What is of chief interest to us in this record is the instructiveness of the tremendous contrast between fire-resisting materials and those that are otherwise.

Town Planning Exhibition.

The Town Planning Exhibition of the Royal Institute of British Architects will remain open at Burlington House until Saturday next, on which day it has been decided, at the suggestion of Mr. John Burns, to admit visitors free to the exhibition. Tickets may be obtained on personal application at Burlington House.

* * *

New Town Hall for Marylebone.

The Marylebone Borough Council have decided to proceed with their scheme for building a new town hall on a site which will have frontages to Marylebone Road, Gloucester Place, Great Quebec Street, and Salisbury Mews. The building will cost £60,000.

* * *

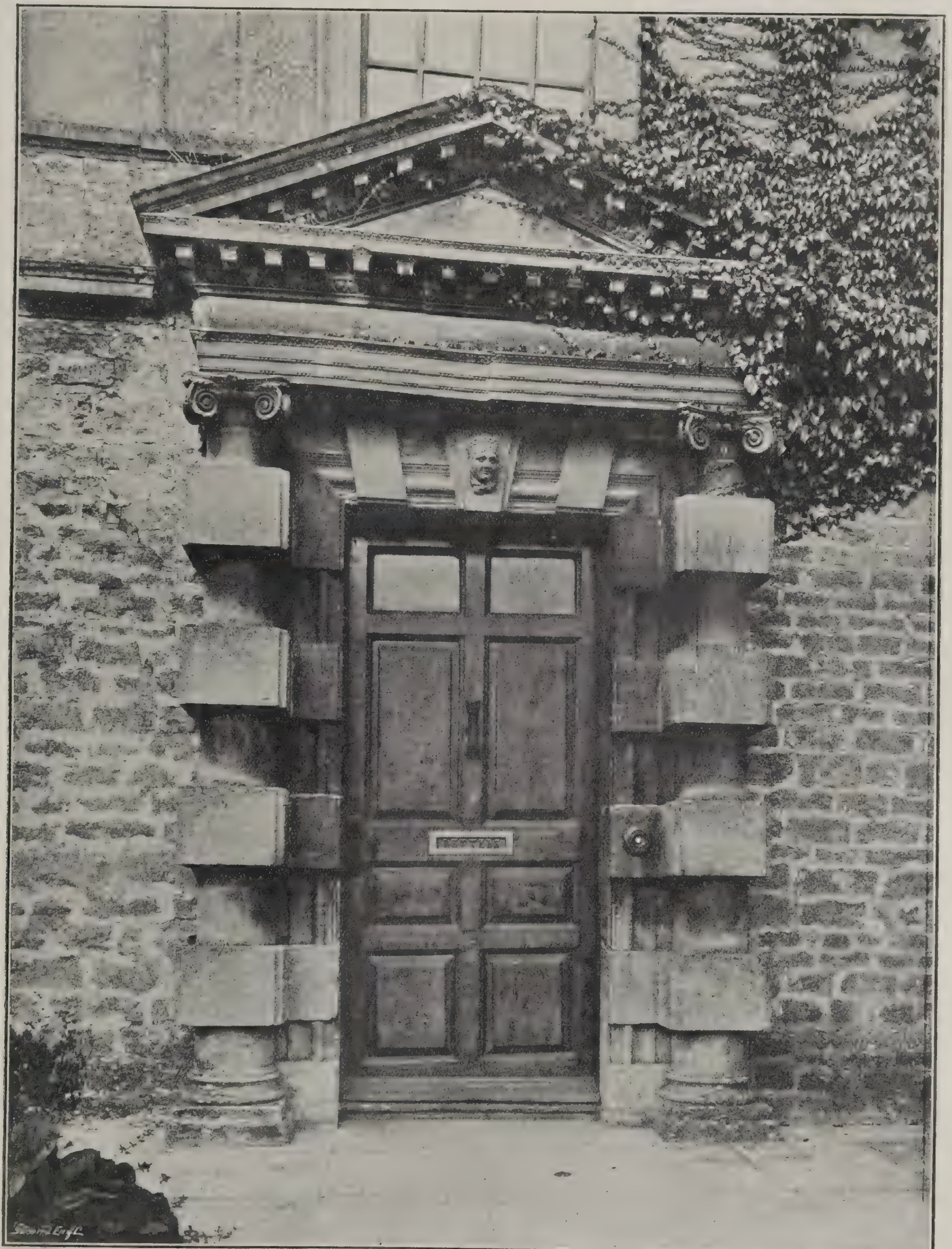
Scottish Exhibition, 1911.

Building operations have begun with the Concert Hall of the Scottish Exhibition of History, Art, and Industry, to be held in Kelvingrove Park, Glasgow, next year. Like the other buildings, the Concert Hall has been designed by Messrs. Walker and Ramsay, architects.

* * *

The Slade Professorship at Oxford.

On Thursday evening last, at the Gallery of the Royal Society of Painters in Water Colours, Mr. Selwyn Image received an address of congratulation on his appointment to the Slade Professorship of Fine Art at Oxford. It was presented by Mr. Halsey Ricardo, Master of the Art Workers' Guild, on behalf of a large number of artists and literary men.



The proportions of this doorway are admirable, and the moulded enrichments very finely worked. The opening measures 8 ft. 3 in. by 3 ft. 8 in.; the height of the columns is 9 ft. 8 in. and that of the architrave, frieze, and cornice—not including the cymatium—7 in., 6 in., and 7 in. respectively. The crowned head on the keystone is supposed to represent Queen Caroline, wife of George the Second.

DOORWAY AT EAGLE HOUSE, BATHEASTON, NEAR BATH (C. 1729). BY JOHN WOOD THE ELDER.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

NEW BUILDINGS.

PROPOSED AND COMPLETED.

Blaydon (Durham).—At present the church has only seating accommodation for 600 persons, which is stated to be inadequate for a parish of close upon 14,000 inhabitants. It has been proposed to widen the existing north aisle, making this the main aisle, and to build a new north aisle at an estimated cost of £2,000.

* * *

Calverley (Yorks).—A scheme is on foot to construct a new county road and bridge over the river Aire at Calverley, at an estimated cost of £20,000, in place of the present old toll bridge, which was erected in 1776.

* * *

Clevedon.—A Local Government Board inquiry has been held at the Public Hall, by Mr. W. O. E. Meade-King, into an application by the Urban District Council to borrow £1,210 for the purpose of erecting a shelter on the Green Beach.

* * *

Dawlish.—A Local Government Board inquiry has been held by Mr. A. A. G. Malet, M.I.C.E., at Dawlish Vestry Hall, into the application of the Urban District Council for sanction to borrow £4,000 for the purposes of street widening at the junction of Exeter and Strand roads.

* * *

Doncaster.—The Doncaster Town Council in committee have approved of a scheme for the erection of 138 houses on vacant land in Marsh Gate, near the new bridge. The scheme is estimated to cost £31,500, including the value of the land, which is fixed at 4s. per square yard.

* * *

Doncaster.—The Corporation have approved the scheme prepared by their surveyor, Mr. Kirby, for the erection of artisans' dwellings in Marchgate. The scheme provides for the building of 140 houses on the vacant land adjoining the new bridge, reserving the frontage to the North Bridge Road for the erection of business premises. The estimated cost, allowing for the value of the land at 4s. per square yard, is about £31,500, and the scheme proposes the letting of the houses to working class tenants at rents from 4s. 6d. to 5s. per week.

* * *

Halifax.—The work in connection with the erection of the new church of St. Matthew's, Northowram, Halifax, will be proceeded with in the early part of next year. The church is designed in the fifteenth century Gothic style, and will provide seating accommodation for 650. The building will be set back from the main road about 130ft., in order to be further away from the noise of the trams. The morning chapel is on the south side of the chancel, adjoining which is the south entrance. The vestries and the organ will be placed upon the north side of the chancel, and the font will be under the west window, midway between the north and south entrances. A tower is to be built near the south-west entrance, and connected with the main structure by means of an open porch. The inner and outer walls will be of local stone, and the roofs of stone slates. The site is now being prepared and levelled, and it is intended to lay out the surrounding ground, which is some 4 acres in extent. Messrs. Walsh and Nicholas, of Halifax, are the architects.

* * *

Ilkeston.—St. Mary's Church, Ilkeston, which has undergone extensive alterations, has been re-opened by the Lord Bishop of Southwell. The extension of the church necessitated the pulling down of the tower and west front, and their re-erection at a spot 40ft. to the westward of their original position.

Keighley.—The new church of St. James, Cross Roads, has been consecrated by the Lord Bishop of Ripon, and cost, exclusive of the site, about £3,000. The building is constructed of local stone, in the Perpendicular Gothic style, and provides accommodation for about 400 persons. Messrs. W. and J. B. Bailey, Keighley, were the architects, and the following the contractors:—Masonry, Messrs. Waddington Bros., Oxenhope; joinery, Mr. Ineson Taylor; plastering, Mr. Jonas Brearley; slating, Mr. Wm. Thornton, Bingley; plumbing and heating apparatus, Mr. Sedgwick Binns, Haworth, painting, Mr. J. Turney, Haworth; and iron work, Messrs. W. Walker and Co., Idle.

* * *

Lanark.—The new St. Mary's Roman Catholic Church has been consecrated on completion, and was erected from the designs and under the supervision of Messrs. Ashlin and Coleman, architects, Dublin. The building consists of nave and aisles, with tower and baptistery, transepts, chancel, and four side chapels. The nave is divided into seven bays in the length, with quatrefoil polished Galway granite columns supporting the deeply moulded pointed arches of the nave arcade. Immediately over the nave columns moulded niches with octagonal canopies and crocketted spires for figures form an ornamentation to the interior. The total length of the nave from the chancel arch is 92ft. by 44ft. in height. The transepts opening off the aisles are 24ft. wide by 38ft. in height. The exterior is built with broken coursed ashlar facing of local stone, with dressings finely chiselled from Auchinheath Quarry. The roofs are covered with green Westmorland slates, with ridges of crested tiles. The tower and spire rise to a height of over 150ft. The carved oak benches, etc., are the work of James D. Bennett (Limited), of Glasgow.

* * *

London, W.—The new Radium Institute, in which his late Majesty King Edward was greatly interested, is now almost complete. The building, which stands near the corner of Ridinghouse Street and Langham Place, opposite the Queen's Hall, will, it is anticipated, be ready for opening within the next week or two. Mr. T. P. Figgis, F.R.I.B.A., London, is the architect.

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Lancaster.—Lord Ashton has contributed £500 towards the scheme for the restoration of the Parish Church, Lancaster, which it is estimated will cost £2,000.

* * *

Malvern.—Lady Grey has laid the foundation stone of the new Holy Trinity Parish Hall, which is in course of erection at a cost of £1,582. The site of the hall is at the junction of Worcester Road and Trinity Bank. The plans provide for a main hall on the ground floor (57ft. 6in. by 28ft. 6in.) capable of seating 275 people, and in the basement for a room (34ft. 6in. by 28ft. 6in.). The two public entrances to the main hall will be approached by a flight of steps from Trinity Bank and Worcester Road, the principal entrance being from Trinity Bank. The walls will be constructed of local bricks, covered with cement rough-cast above the plinth line. Below the plinth line brindled bricks will be used, and the roof will be covered with green slates in diminishing courses. There will be a complete installation of electric light, and the main rooms and entrance lobby will be heated from an apparatus in the basement. Mr. H. Percy Smith, of Worcester, is the architect.

* * *

Manchester.—The Manchester City Council has decided to erect an art gallery and free library, at a cost of £250,000, on the site of the old infirmary in Piccadilly. The site was purchased from the infirmary trustees for £400,000, and much of it has already been applied to street widening.

Dr. E. Petronell Manby, Local Government Board Inspector, has held an inquiry at the Manchester Town Hall into the Council's application for sanction to borrow £5,600 for the erection of a convalescent ward pavilion at the Monsall Hospital.

The County Council have secured a site in the Carnarvon Road district for extension purposes, and have decided to build infant schools on the Lady Bay side to cope with the increased population there.

* * *

Newcastle-on-Tyne.—The new extension for technical instruction at Rutherford College has been formally opened on completion by Professor Michael Sadler. The annexe is on the east side of the original building, with which it communicates on the first floor by a bridge, and has involved an expenditure of about £7,000. It comprises, on the ground floor, engineering, electrical, and physical laboratories and a class-room; and, on the first floor, three technical drawing rooms, and a class-room. The building is constructed of red brick with diaper of darker brick and terra cotta dressings. The floors of the engineering and electrical laboratories are covered with patent jointless flooring, and those of the physical laboratory and first floor class-rooms by wood blocks. The roof is a concrete flat, covered with asphalt. The heating is by low-pressure hot water, and a complete system of mechanical ventilation is installed. Messrs. Oliver, Leeson and Wood, Newcastle, were the architects and Messrs. Middlemiss Brothers the contractors. The J. R. Ward Company, of Newcastle, have installed the heating, and Messrs. Matthews and Yates, of Manchester, the ventilation apparatus.

* * *

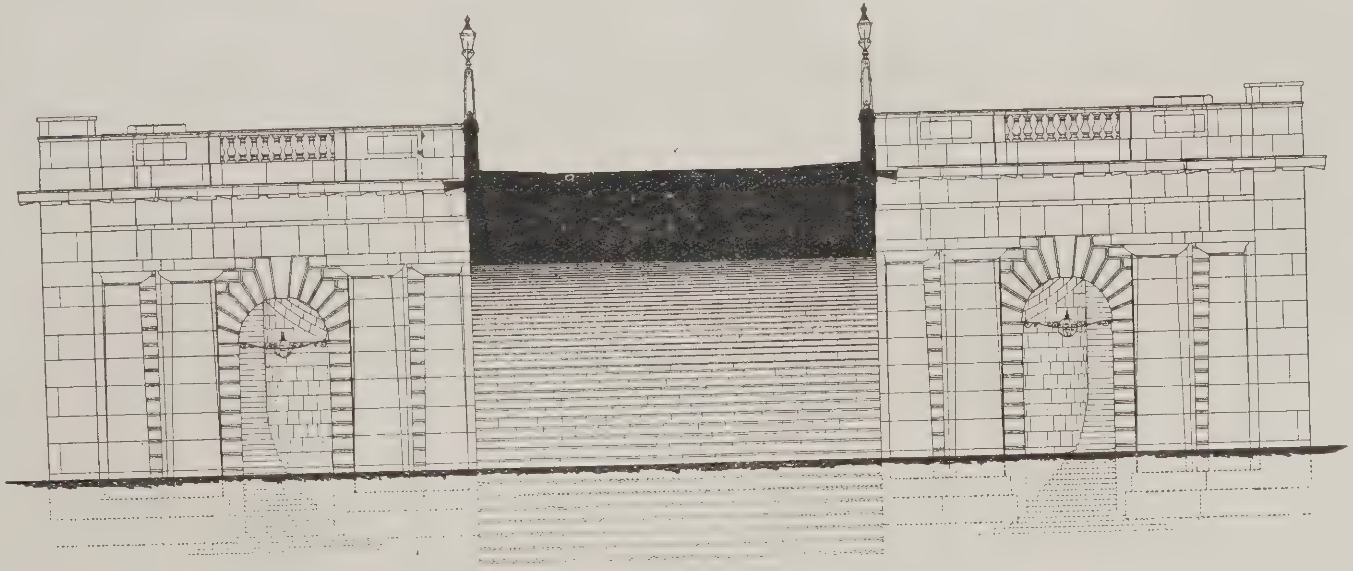
Northampton.—The foundation-stone has been laid of the new Congregational Church, situate in Abington Avenue. The building is designed in the Decorated Gothic style, and will comprise: Nave with one centre and two side aisles, choir, organ chamber, vestries and gallery. The nave arcade will have five moulded arches on either side, supported on octagonal piers, the whole being executed in rubbed Bath stone. At the junction of Abington Avenue and Purser Road will be a tower, having eight deeply recessed belfry windows with oak louvres. On both sides of the clerestory will be five three-light tracery windows, and in the end wall of the choir, a rich four-light tracery window, while a five-light window will face Purser Road. The whole of the windows will be glazed with cathedral glass. The roof is open to the apex, and the main principals are constructed with hammer beams and decorative curbed braces resting on moulded stone corbels. The doors, panelling, gallery front, pulpit, organ case, and seating will be executed in polished Austrian oak. The walls externally will be faced with local Duston stone, the windows, mouldings, plinths, copings, etc., of Bath stone, and the roofs will be covered with red sand-faced tiles. The steps to the entrance and choir will be of white Mansfield stone. The heating will be by hot water on the low pressure system. The ventilation will be by patent ventilating panels in the aisles, and Barrel ventilators in the nave roof. The total cost of the building will be about £4,500, and accommodation will be provided for 550 persons. Messrs. Ernest R. Sutton, F.R.I.B.A., and F. W. C. Gregory, of Nottingham, are the architects, and Messrs. E. D. Sharman, Northampton, the contractors.

* * *

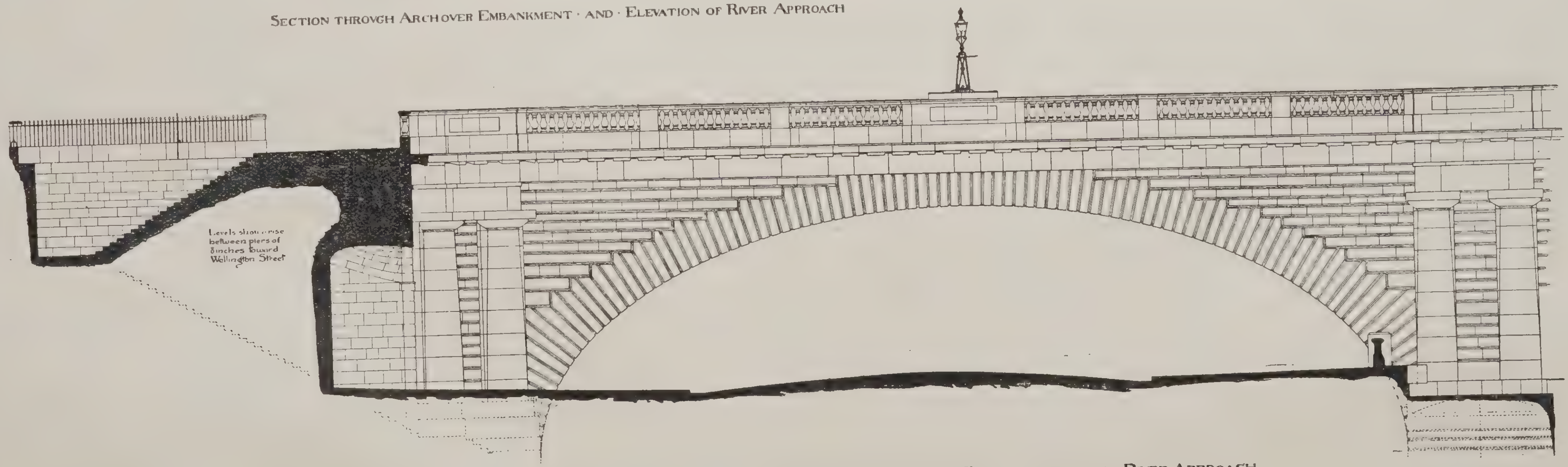
Pitlochry.—Moulin School Board has been called upon by the Education Department to provide accommodation at Pitlochry Higher Grade School for the teaching of gymnastics, cookery, and laundry work. It was originally proposed to erect an iron and wood structure at a cost of about £600, but the Department refused to sanction this. At a subsequent meeting of the Board plans for a two-storey building of stone and lime were submitted by Mr. W. Bell, C.E., at an estimated cost of £2,444. The Board provisionally approved of these, and instructed the Clerk to forward them to the Education Department.

The facing is of Cornish granite, and the interior and filling of Craigleith and Derbyshire stone. The coping to the balustrade is also of Cornish granite, but the balusters themselves are of Aberdeen granite. Waterloo Bridge was the first bridge over the Thames to be built with coffer-dams.

WATERLOO BRIDGE, LONDON. MEASURED AND DRAWN BY H. R. HIDE.

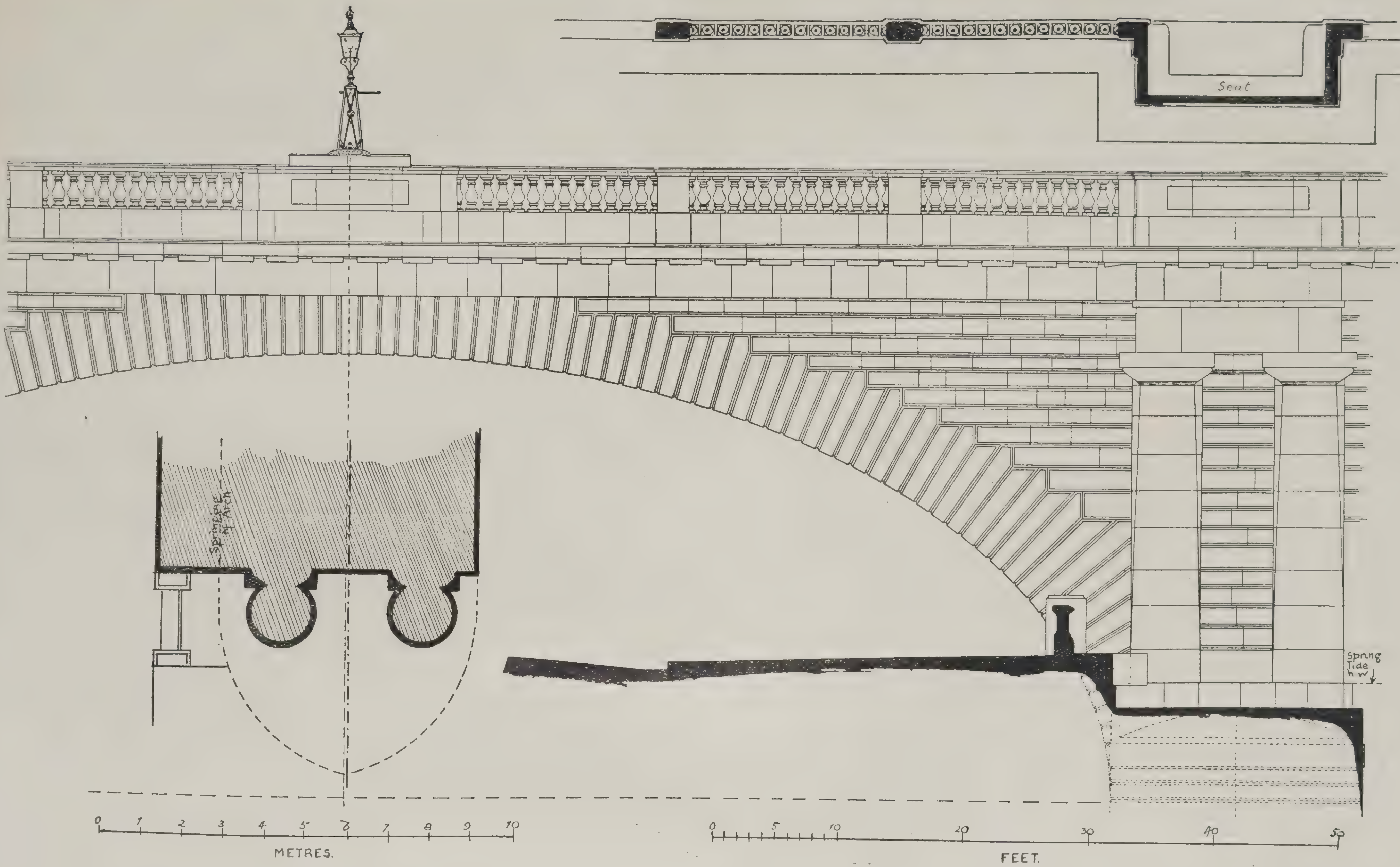


SECTION THROUGH ARCH OVER EMBANKMENT · AND · ELEVATION OF RIVER APPROACH



WEST ELEVATION OF ARCH AND SECTION THROUGH RIVER APPROACH

The drawing here reproduced shows the span over the Embankment; but as all the spans are the same, it may be taken as corresponding to the photograph reproduced on p. 418 of this issue. Dotted lines on the above drawing indicate the portions of the structure covered up when the Embankment was made. The roadway across the bridge is 28 ft. wide, and the footways on each side are 7ft. wide.



The arch, based upon a true ellipse, is ramped, the diameter running parallel with the cornice; and the horizontal line of the bridge being practically level without any camber, allows the cornice to return and mitre properly on the projecting bays of the piers.

WATERLOO BRIDGE, LONDON: DETAIL. MEASURED AND DRAWN BY H. R. HIDE.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

- ***(1) Enquiries about buildings to measure in particular towns and districts.***
- ***(2) Enquiries embodying questions which have been set in examination papers.***
- ***(3) Enquiries which ask for or require the preparation of special designs as part of the answer.***

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries must be sent on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Dry Rot.

"ENQUIRER" writes: "Kindly favour me with a suggestion as to the special precautions against dry rot which should be taken in the following circumstances. A house is being built on a site till now covered with pine trees and a certain amount of heather, this meaning that the top soil, at least, is peaty. The site is nearly flat and inclined to be damp. The trees have been felled, and the roots grubbed so far as possible, but necessarily some of the roots and a large amount of chips from the felling will remain in the ground. I am afraid that these roots and chips will set up dry rot where sealed down under a concrete floor; where the floors are of wood joists it can probably be obviated by adequate ventilation. I had a very persistent case of dry rot in a house constructed about 10 years ago. It reappears with warm weather each year, and I am inclined to think it is due to shavings, etc., which have been sealed down under the cement floors. and have infected the whole of the bottoming and soil. I am anxious to avoid any risk of this in the present instance, and would welcome any suggestion, especially an inexpensive method, as the house has to be constructed as cheaply as possible.

"In the case where the dry rot already exists. the floors are of ordinary concrete with a cement finish, the skirtings being also of cement. There is no wood floor in the affected part of the house; the nearest wood are the strapping and the door posts and architraves, and it is these which periodically become affected. The fungus also appeared on the cement skirting of an internal brick wall, where there was no wood at all, the plaster being direct on the brick. When I opened up the concrete floor here, I found the fibres of the fungus extending in all directions through the bottoming. This I thought might have been caused by sealing down shavings and chips of wood."

—In the absence of an inspection and of full particulars and plans, I could not give the causes of dry rot in the cases mentioned. If architects and builders would remember that warm, damp, and stagnant air is said to be the chief cause of dry rot, and if they would always have in mind that all the authorities on the subject believe that the germs of dry rot are in all timber, then clients, architects, and builders would appreciate the difficulty of diagnosing dry rot and its causes.

Carbolineum and Jodelite coated over the wood and over the cross cuts are supposed to prevent dry rot. Air grids are said to prevent dry rot, but as the air is generally impregnated with moisture, it follows that the more air grids the more moisture.

Has the concrete floor, in this case, like tiled and painted surfaces very often do, set up dew point? If so, then the moisture might creep up the end grain of the architrave and other woodwork; if the room were then closed up for some time there would exist the theoretical conditions necessary to develop the dry rot inherent in the timber.

P.O.

Concrete Fixing Bricks.

A Gloucester correspondent writes: "Why not make your own fixing bricks with coke breeze concrete, mixed 5 to 1 of cement? The method is as follows:—Construct a dozen moulds the required shape (the ordinary size of a brick for preference, to assure better bonding), and commission the nearest brickmaker to make a specific quantity. The cost in this locality is about 5s. per 100."

Books on Land Taxes and Valuation.

"SQUARE" (ROCHDALE) writes: "What books would you recommend dealing with the new land taxes and valuations? If more than one, please state which you consider the best."

—"The New Land Valuation," by Clement E. Davies, B.A., LL.B., barrister-at-law. The new land duties, licensing duties, stamp duties. and alteration in death duties, with practical examples in valuation, by Cuthbert J. Lake, F.S.I., 8vo, cloth, 298 pages, 7s. 6d. nett, postage 4d. "Land Values," the taxation of land values under the Finance Act, 1910, containing review of the fiscal burdens on land—provisions of the Act under the heads of valuations—duties imposed, appeals, text of the Act. with notes to each section, appendix of Acts, forms and regulations. By Edward S. Cox-Sinclair, barrister-at-law, and Thomas Hynes, LL.B. (Lond.), barrister-at-law. 8vo, cloth, 418 pages, 10s. nett, postage 6d. "Law of Land Values." The law relating to the duties on land values and mineral rights, and to the valuation of the same, with the incorporated enactments, full of explanatory notes, with a practical introduction by E. M. Konstam, of the Inner Temple, barrister-at-law. 8vo, cloth, 421 pages, 12s. 6d., 10s. 6d., postage 4d. B. T. Batsford, 94, High Holborn, W.C. There are many other books on the subject, but the three mentioned are to be particularly recommended.

St. Fagan's Church, Glamorgan.

A correspondent writes:—"There are a very fine piscina and sedilia in the above church, which is one of the best in the county. A drawing by William Eaton, A.R.I.B.A., was published in 'Details' last September. There are also a good font and stoup in the church."

Books on Duties of Clerk of Works, and Testing of Materials.—Cost of Building in Ireland and in England.

"CHELT" writes: "1. Please recommend a book on the duties of the clerk of works.

"2. Also a book on architects' tests for materials.

"3. Is the cost of building in Ireland (Dublin district) the same as in England?"

—1. "The Conduct of Building Work and the Duties of a Clerk of Works." A handy guide to the superintendence of building operations, by J. Leaning, F.S.I., 2s. 6d. nett. B. T. Batsford, 94, High Holborn.

2. "The Testing of Materials of Construction." A text-book for the engineering laboratory, and a collection of the results of experiment, by W. Cawthorne Unwin, F.R.S., B.Sc., with 5 plates and 188 illustrations and diagrams, 8vo, 16s. nett. Batsford.

3. We recently had an opportunity of comparing prices in Dublin with those ruling in Hampshire. On receiving the bills of quantities we compared the prices with Dublin rates, and found the former to be on an average 18 per cent. lower. Brickwork was 35 per cent., tiling (roofs) 22 per cent., and so on.

Concrete Reservoir.

W. B. (CUMBERLAND) writes: "A reservoir for water is being built of 4 to 1 concrete walls and bottom. It is 30ft. long and 11ft. wide, by 5ft. deep inside measurement. The walls are 16in. thick, the bottom is 8in. Are the walls strong enough to withstand the pressure of the water, or should they be strengthened by buttresses? They have no batter, and are 16in. thick from top to bottom."

—The design for the reservoir is weak, as there is insufficient provision against overturning. The reservoir could be built in reinforced concrete with less thickness of walls, so that probably economy would be effected notwithstanding the superior quality of the concrete and steel in the reinforced concrete.

D.

Extending Church Over Grave.

H. E. I. (LEEDS) writes: "It is proposed to extend the vestries, etc., of a small village Nonconformist chapel, but the only plot of ground available is an old grave, dating from 1860-1865. I believe it is the grave of the wife of a former minister of the place. (1) Can we extend over this, covering the site with concrete? (2) Is any permission required from the Home Secretary, or from any other authority? (3) If so, are the costs likely to be prohibitive? (4) Ought the owner of grave (if known) to be communicated with? Any further information relating to the matter would oblige."

—H. E. I. does not say whether the burial ground in question is a disused burial ground or not, and much depends upon the answer to this question. Assuming the burial ground is still in use, the consent of the incumbent or rector must first be obtained, otherwise any person who builds or places concrete on any part of the burial ground is guilty of a trespass in respect of which an action might be brought (*Beckwith v. Harding* (1818) 1 B. and Ald. 508), nor is there any procedure by which the incumbent may be compelled to give his consent, except the very expensive process of applying for a "faculty" to the Chancellor of the Diocese. In the case of a disused burial ground, the Disused Burial Grounds Act 1884 (47 and 48 Vict. c. 72) applies to prevent the erection of any buildings, "except for the purpose of enlarging a church, chapel, meeting house, or other place of worship." It must, however, be borne in mind that in the case of a consecrated ground, no tombstone or monument may be removed, or its position changed, without a licence or a faculty from the bishop. On such an application the bishop is at liberty to direct or sanction the removal or change of position of any tombstone or monument if he is of opinion that reasonable steps have been taken to bring the intention to effect such removal or change of position to the notice of some person having a family interest in the tombstone or monument (see Open Spaces Act, 1906, 6 Ed. 7 c. 25) S. 11. As to the expense of taking the necessary steps, we are unable to form an accurate opinion.

Drainage of House Subsequent to Erection.

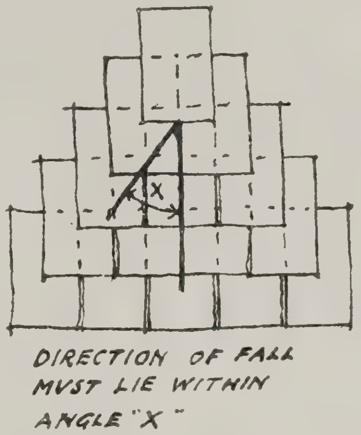
"SMALL PROPERTY OWNER" writes: "Please advise in the folowing case. Four or more houses are drained into one drain, and this one drain passes from back to front under one of the central houses. The sanitary authority insist on the main drain being taken up and relaid, after the houses have been built, say, 30 years. Who should pay cost? Is it the Borough Council? I have been informed they should; in fact, I have heard in a neighbouring district (i.e., one district of London) the Borough Council do pay."

—This query opens up a problem which has continually agitated the public health authorities for many years past. One has to enquire whether the pipe which it is required to relay is a *sewer*, or not. If it is a *sewer*, it is repairable by the local authority; if it is a *drain*, it must be repaired by the householder. The word "drain" (as defined by the Metropolis Management Act, 1855, s. 250) means any drain of and used for the drainage of one building only or premises within the same curtilage, and made merely for the purpose of communicating with a cesspool or other like receptacle for drainage, or with a sewer into which the drainage of two or more buildings or premises occupied by different persons is conveyed, and shall also include any drain for draining any group or block of houses by a combined operation, under the order of any vestry or district board; and "sewer" means and includes sewers and drains of every description, except drains to which the word "drain" interpreted as aforesaid applies. Now by s. 69 of the same Act, the borough council must repair and maintain every sewer which is vested in it; and the question, therefore, is whether the pipe in question is a sewer or a drain. On the necessarily meagre statement of facts which appears in our correspondent's letter, the matter is not easy to decide. For example, it is not stated whether the houses in question are drained by a "combined operation" (as to the meaning of which, see *St. Mathew, Bethnal Green* (*Vestry*) v. *London School Board* (1898) a.c. 1190). It has been decided under the Public Health Acts, 1875, that a drain passing through private ground but receiving the drainage of more than one building is a sewer (see *Travis v. Uttley* (1894) 1 Q.B. 233). If there is much at stake, we recommend our correspondent to take legal advice before he joins issue with the borough council. These bodies do not usually seek to impose liabilities upon householders unless they are sure of their ground.

X.

Tiling Eyebrow Dormer.

A. B. C. (Beeston) writes: "Kindly inform me of the best way to construct a roof in tiles without using specially made tiles over the stable window, as per enclosed sketch. I wish to use tiles to harmonise with other buildings. I do not wish to spread the curve wider than is necessary to avoid using lead underneath."

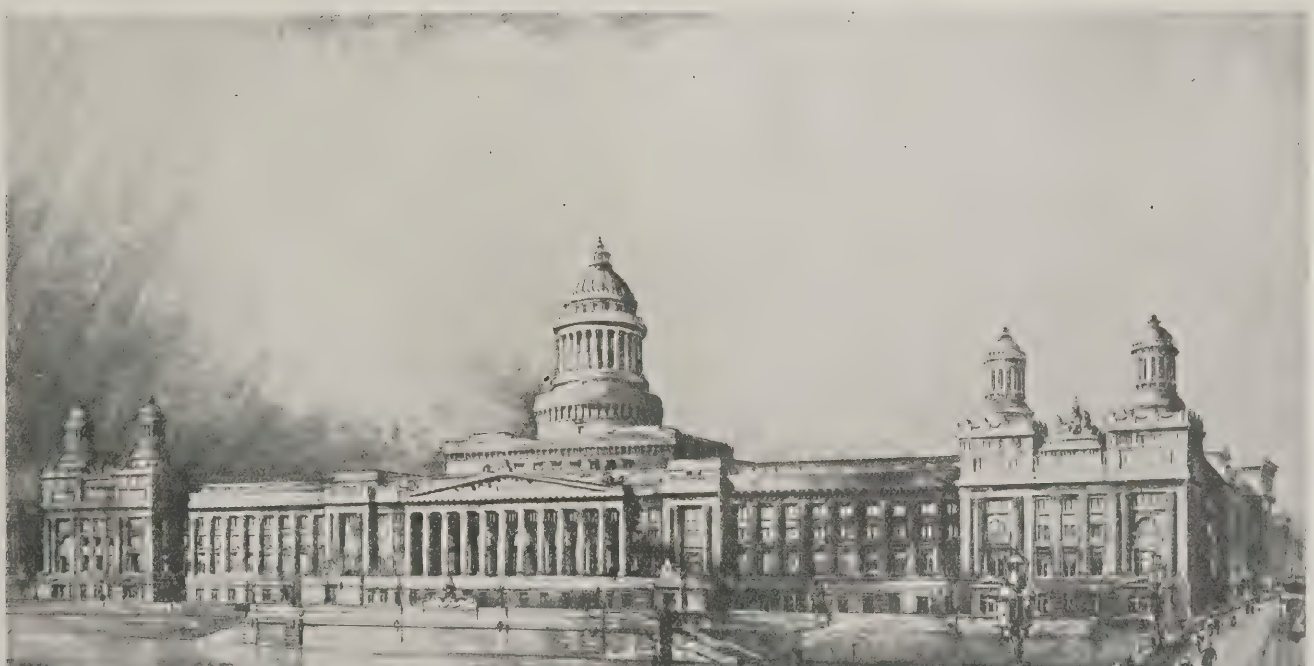


—No special form of construction is necessary for tiling an "eyebrow" dormer. The rafter feet follow the line of the dormer top, and each rafter consequently differs in its length and cuts. The tile battens are eased over the curve, saw-kerfing where necessary to facilitate bending. As the tile courses will require to run continuously over the "eyebrow," accommodating themselves to the shorter length at its apex, the gauge will vary. To obtain correct adjustment, after setting out the battens for the ordinary pitch continue the eaves course, and one next to the ridge over the dormer, and mark the space between them along the apex with an equal number of divisions to those of the ordinary spacing. The point governing the weathertightness of tiles laid in this way is the angle with the horizontal which is made by the diagonal running from the centre of the tail of one tile to the centre of the head of the adjoining tile on either side in the fourth course below it. Since the tiles on the rising sides of the "eyebrow" incline sideways as well as from head to tail, water runs across them diagonally, and if the rise is sharp enough to cause the angle made by the surface of any tile with the horizontal (which the water will follow) to run in a direction which will bring its plan line above the heading joints of this fourth course below (see sketch), the roof will leak. Messrs. Ames and Hunter make a speciality of this and other special forms of tiling, which the ordinary workman is likely to bungle.

G.

LIVERPOOL ARCHITECTURAL SKETCH BOOK.

The accompanying illustration of Professor Adshead's sketch for the London County Hall is taken from "The Liverpool Architectural Sketch Book," recently issued by the Proprietors of "The Architectural Review," Caxton House, Westminster, price 2s. 6d. nett. The design is interesting as embodying some of the tenets of those who are endeavouring to establish a monumental type of architecture in this country.



SKETCH FOR THE LONDON COUNTY HALL. BY PROF. S. D. ADSHEAD, F.R.I.B.A.

(*From "The Liverpool Architectural Sketch Book."*)

THE CITIES OF THE FUTURE.*

By E. Henard, Architect of the City of Paris.

There will always be in every large urban agglomeration, whatever its future expansion may be, a centre of intense activity, where buildings must necessarily continue to be very near one another, as in our cities at the present day. It is a portion of such a centre which I am going to examine. On one side I have illustrated a house dating from the last century, and opposite, another of modern construction. I shall not dwell upon any critical remarks as to the former; the arrangements are inconvenient, and the sanitary provisions deplorable. I introduce it here for the sole purpose of exhibiting a contrast with an up-to-date dwelling-house, and to bring out into relief the great progress that has been realised. Yet even the latter leaves very much to be desired. It is pretty certain that vacuum cleaning will become general, and that a system of pneumatic pipes will soon, in the interest of public health, become imperative for the suction and destruction of dust. The sewers cannot be used for such systems of conduits, which must necessarily be very extensive.

The applications of refrigeration are multiplying, and there is nothing absurd in prophesying the necessity of a network of pipes for liquid air. Coal is a fuel suitable for factories only, for it is both cumbersome and dirty. We can therefore assume that, in the future, petrol will be supplied from house to house through pipes, thus conveying everywhere a clean and more convenient fuel. Oxygen combined with petroleum would supply an intense heat, without smoke, for stoves, bakers' ovens, etc.

We may also imagine other special mains for the distribution of sea-water and pure air, conveyed either from an islet near the coast or from the top of a mountain.

All the evil arises from the old traditional idea that "the bottom of the road must be on a level with the ground in its original condition." But there is nothing to justify such an erroneous view. As a matter of fact, if we started from the opposite idea that "the pavement and carriage-way must be artificially constructed at a sufficient height to allow underneath a space sufficient to contain all the installations needed for the service of the road," the difficulty would disappear altogether. This, of course, implies an additional floor underground for the neighbouring houses, inasmuch as the ground floor would thus be raised to the level of the street.

[M. Hénard showed a plan and section of a road constructed in accordance with this new conception.]

The pavement and the carriage-way would be constructed once for all like a bridge roadway, and ought never to require any manipulations beyond those necessitated by the upkeep and repairs. The paving in wood or in any other elastic material would cover a cement-armoured monolithic platform. Such platform, constructed at a height of 5 metres above the ground proper, would rest laterally upon two masonry walls, parallel with the front walls of the frontage buildings, from which they would be separated by a small space. Between the lateral walls the platform would be supported by several lines of pillars, with spaces between them of about 4 or 5 metres. Immediately below the bridge roadway would be suspended the whole system of pipes required for the purposes we have just enumerated, viz., vacuum cleaning, supply of compressed air, river water, sterilised pure water, petrol and liquid air; conveyance of letters; supply of pure air, etc.; and then all the systems of electric cables (telegraph, telephone, light, energy, high-frequency currents, etc.).

Underneath said systems, which would all be easily accessible and controllable, a space of 25 metres in height would be left, absolutely open up to the old ground level. Four railway lines would then be laid, one metre apart, upon which would run trains of small trucks to remove all rubbish and refuse, as and when required, to convey all heavy and cumbersome materials, and to clear the rubbish from building or repairing yards.

This underground street would be permanently lit by incandescent lamps and glass plates on a level with the pavement. The natural ventilation promoted by electric fans would be produced by high chimneys located at given intervals through the party-walls between the houses. Each frontage would, at the base-line, be separated from the next by a regulation recess of 2 metres by 1, at the end of which would be located the ventilation flue. This arrangement would greatly improve the architectural aspect of the frontages, which would thus be sharply divided from one another.

To sum up, this arrangement amounts to unfolding the modern street into two streets: one above in the open air, solely intended for the traffic of light vehicular and pedestrian traffic, and the other located below, on a level with the ground and underneath the former, which would take up all the pipe systems, remove the house refuse, and transport heavy materials and goods.

By generalising such a plan we are led to conceive a city possessed of streets with a very heavy traffic which would have three or four superimposed platforms, according to the requirements. The first platform would be for the pedestrians and vehicles, the second for the tramways, the third for the various mains and channels requisite for the removal of refuse, and the fourth for the transport of goods, etc. We should thus have a many-storeyed street, as we have a many-storeyed house, and the general problem of traffic, however heavy, would be solved. It is probable, however, that streets unfolded as I have just described would suffice, at least for a very long time, under the present conditions of urban life.

Light and energy will be conveyed by electricity. Petrol and oxygen will supply heat. Liquid air will keep up refrigerators in every larder for the preservation of eatables. In addition to heat radiators we shall also have cold radiators, which will enable us to keep in each house, in all seasons, the temperature we require. Finally, the power given us of varying as desired the temperature, pressure, and quality of the air inhaled, as well as the ambient electric effluvia, would enable us to provide in each flat one or more "health chambers," closed by close-fitting double windows and doors, in which the overworked occupant on his return from town would find a permanent habitation and atmosphere to keep up both his health and that of his family under all the hygienic conditions which now he can only obtain occasionally by taking an annual holiday.

When this progress has been accomplished the physiognomy of towns will be changed. All the terraces will have become landing-stages for flying automobiles. Aviators will be able to fly from one terrace to the other, starting and landing as they please.

We would then, however, have to face a very grave problem in regard to the movements of aeroplanes over cities and to the safety of the inhabitants.

We may now, with these hypothetical data, endeavour to form a general idea of the great cities of the future.

In the centre of the nucleus will rise the colossal orientation tower, 500 metres high and surmounted by a powerful beacon. Around the base of this tower will spread out the historic town, with all its art treasures and ancient monuments. A first belt of big towers from 250 to 300 metres high will warn off all aviators from the forbidden area. Structures of divers forms and easy to recognise, say eight in number, will be erected, so as to indicate the principal points of the compass. Then we shall have the annular zone of flat-roofed houses, from 2 to 3 kilometres in width, upon which the light aeroplanes of the "bee" type will be able to fly from terrace to terrace. Round the circumference a second belt of big standards or metallic poles, from 150 to 200 metres high, will mark the town boundaries and keep off the large airships. These standards, with their tops, will be used as watching-stands, where the aerial policemen will be permanently posted, seated ready on their light aeroplanes, to stop whenever required the flight of heavy machines over the town. Beyond this point landing stages will be arranged and form the terminus of all the great highways of the air. Farther away will be located the gigantic factories required for public purposes.

The town as a whole will be traversed by large radiating thoroughfares, occupied partly by raised platforms continuously moving, which will insure rapid communication between the different zones. These platforms will be terminated by large revolving cross-ways at the intersection of the main roads. Finally, large parks and flower gardens, as rest, health, and pleasure resorts, will be laid out in various parts of the town.

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*Abstract of a paper read at the Town Planning Conference, October 14th, 1910.

SOME FACTORS IN TOWN PLANNING.*

By Sir W. B. Richmond, K.C.B., R.A., Hon. Associate R.I.B.A.

The town-planning scheme would appear to indicate a general opening out for the employment of many and various factors immediately connected with the arts of architecture, sculpture, and painting. But besides these, many branches of what are called the minor arts will necessarily in time come under consideration. Metal work (chiefly wrought iron), woodcarving, fencing, stucco work, and, as it seems to me, essentially also the laying out of formal gardens, arbor culture as well as floral. Indeed, the idea which has prompted the initiation of this important movement seems to be fraught with possibilities endless as regards their practical and æsthetic value.

We all know that structure grows, or should grow, out of the plan. The plan, therefore, is the dominant note of each chord in process of development.

Symmetry of plan may be *ad nauseam*. Unsymmetric arrangement employed with obvious self-consciousness may degenerate into affectation and mannerism. Effect is promoted by balance of symmetry and unsymmetric treatment.

Many geometrical forms, other than the circle, oblong, or square, may be used with advantage, The oval, ellipse, together with triangles of various qualities of proportion, discreetly used and varied in their application, will redeem a plan from obvious monotony, and produce unexpected effects of light and shade upon elevations. Thus a pleasant variety might be attained, difficult spaces dealt with, and undue formality avoided.

In our climate, well-lighted colonnades, glass-covered areas—not necessarily narrow or restricted—would be most acceptable for winter plaisance and summer shade, whenever the latter may be essential in our fitful and rare summers.

In projected gardens—and I hope that all town-planning schemes may make gardens an important element—places should be arranged for fountains, also for bandstands.

Not far off from the gardens covered spaces might be considered indispensable as forming retreats in bad weather.

Of course, places of public entertainment, gymnasiums, schools, and churches will have to be considered.

If we cure the smoke evil, gardens on house-tops might be possible even in our climate: a whole row of houses of the poorer classes might possess a large area of flat roof—a healthy playground for children, and be a source of pleasure to "grown-ups." But while things are as they are, we are bound to insist upon open spaces within every area where new town planning is adopted—and these are almost of more imperative need to the poor than to the rich.

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*Abstract of a paper read at the Town Planning Conference, October 11th, 1910.

I cannot but think that the architect—who is, or will be, of course, the prime director of all town planning—should consult the sculptor and painter. Indeed, I think that an omission of representatives of the two professions from a committee of advice would be a great mistake.

Mural painting is pretty nearly certain to come into more general use when the smoke of our towns is abated. Sculpture, happily, is already inaugurated as in a measure an essential whenever a building is to be representative or illustrative of any noble purpose; yet not nearly enough is this the case, partly because the sculptor is not taken into the confidence of the architect *ab initio*. Wherever there is to be sculpture, the sculptor should be in consultation with architect from the starting of any plan. The same law should apply when coloured decoration is in view. The painter should be in consultation with the architect from the earliest moment of plan-designing.

GREATER LONDON.*

By G. L. Pepler, F.S.I.

The area of the county of London alone is 117 square miles, with a population of over 4¾ millions, and with Greater London, which is usually taken as the Metropolitan Police area and is undivided from London itself except by administration, has a population of 7½ millions and an area of 700 square miles. The most modest forecast of the population in 1931 is 9¼ millions. Within the fifteen-mile radius, to which distance and beyond London has already thrown out sturdy feelers, there are eighty-two authorities with town-planning powers. It is obvious that these areas are not in this matter isolated units, but are closely bound up in each other.

This brings us at once to what I think must be the starting-point of all investigation, viz., that the main problem must be considered as a whole, largely irrespective of administrative boundaries. In its essence the problem is one of traffic, a problem that is daily getting more acute. In 1907 in the county of London the police dealt with 17,055 people injured by traffic, of whom 283 were killed.

Not only is traffic daily increasing in volume, but it also gets faster and faster.

Another cause of congested traffic is the poor arrangement of most of the railway termini and the fact that traffic must concentrate at certain times for certain trains.

A glance at the map shows us that whereas London appears fairly well served with radial roads, concentric communication is bad. Radial railways also abound, but, except for the Underground, circumferential communication is not well catered for. The same remark applies also to trams.

In detail many of these shortcomings are being gradually rectified, but the Town Planning Act gives scope to look ahead, so that plans can be made to meet the growing evils and prevent their happening in new districts. No doubt we most of us know particular districts with certain peculiar needs in this respect, but for Greater London a definite, bold, comprehensive scheme is required.

London county has an area of 6,620 acres of parks and open spaces, or about one-eleventh of its whole area, but unfortunately it needs a special excursion to get to most of them, partly because of their position and partly because traffic is not allowed through them, as in continental cities.

As to possible improvements, the chief suggestion of the Advisory Board of Engineers to the Royal Commission was that two great avenues should be driven through London, each 140 feet wide. The one from West to East was to be 4¾ miles long, and connect Bayswater with Whitechapel; that from North to South to be 4¼ miles long and connect Holloway with the Elephant and Castle. The first was estimated to cost £15,500,000 and the second £8,500,000. They were to have trams on the surface and trains immediately under the surface. The engineers made out a perfect case for the project, and yet the cost has been considered prohibitive, the London County Council reporting that they had already incurred liabilities to the full extent of their existing means of revenue.

This brings us to the consideration of a project that should relieve existing traffic pressure in the centre and at the same time make provision for the future. The suggestion I wish briefly to elaborate, and of course it is one that has previously been made in various forms and has recently been most clearly put forward by Mr. Barclay Nivern, is for a great girdle round London. The line that I think this girdle should take as far as possible follows open country, utilises existing bridges, which of course would have to be widened, and avoids steep levels, or where they are inevitable follows the line of a good existing road. Fortunately also for its purpose, the suburbs it would cut through have developed longitudinally rather than laterally, so that the proposed road could be steered to cross at the narrowest parts. An instance of this is at Croydon, where approaching from the west I get right to the main Brighton road without crossing built-upon land. Also, in many cases I have diverted it round built-upon areas, in preference to widening the existing road, which is a method strongly urged by the Traffic Branch of the Board of Trade.

Briefly, some of the advantages of such a ring road would be:—(1) To provide a means by which a great deal of fast traffic could circle London instead of passing through; (2) generally to link up existing radial roads and outer suburbs; (3) to open up a great deal of fresh land which, if properly town-planned, could form an almost continuous garden suburb round London, with the ring as its basis; (4) open land adjoining the ring could in many cases be preserved as park land, so that if boldly conceived and properly made it would form a great park way; (5) it would assist the forming of outer markets and so save much produce going into London only to come out again.

With regard to road traffic, I would have one smooth paved road reserved for fast traffic only, with a penalty for use by vehicles unable to go at least twelve miles an hour, which would be a great encouragement to motorists to use it in view of the almost continuous ten-mile speed limits on most of our radial roads. Another road should be reserved for heavy mechanical traction, and specially paved to that end.

We must have plenty of grass and trees, and those of us who have seen the Berlin trams running through grass would welcome the same plan here. To make drawing clear, I have shown houses fronting this road, but probably in most cases in future suburban development we should aim for improved highways with few houses directly fronting them, but rather set back round greens or facing narrow and inexpensive side roads only constructed for the purely domestic traffic of the houses facing them. By this means our houses will be free from dust, and, in the aggregate, building estates will be capable of quite as much, if not rather more, economical development than at present.

As to cost, compare the size and importance of London with Paris, and at the same remember Paris has recently entered into a scheme of improvements costing £36,000,000.

The average price of the land, balancing one thing against another, should not exceed £500 an acre, or a total of £4,800,000. Of this the actual way, including roads, pleasance, and railway, would only take up a width of 326 feet, or a total area of 2,371 acres, leaving 7,229 acres to be resold or leased. No doubt sufficient land for oases could be retained and the balance sold to bring in an average of £800 an acre on, say, 7,000 acres, making a total return of £5,600,000. The probable profit on the land at a modest estimate would therefore be £800,000, which would certainly pay for the mere road construction and pleasances, and the trams and railways should be treated separately as business concerns paying for their own construction.

As regards construction: The two extravagances are a new bridge at Richmond and a tunnel at Woolwich. With regard to the former, it is a needed improvement; with regard to the latter, it would be a great boon, and a foot tunnel is already in hand.

THE PRESERVATION OF ANCIENT FEATURES.*

By Professor G. Baldwin Brown, M.A., Hon. A.R.I.B.A.

The author's aim was the reinforcement, by arguments suited to the occasion, of the old principle that in the laying-out and alteration of our towns utilitarian considerations should not override the claims of beauty and of historic association; that zeal for city improvement and extension should be tempered with a conservative care for older monuments, and for those natural features which give individuality and charm to civic and suburban sites. The author said that the speculative builder had done less harm in England than in Scotland, and in parts of the Continent, where he is apt to express himself in large tenements.

More attention must be directed to that prominent figure in our time, the progressive municipal administrator, who discards antiquated methods and appeals for the votes of the urban elector from his platform of "efficiency." Such a one is apt to regard the considerations urged in this paper as "sentimentality," and, though he is ready enough to pay them a passing tribute of lip homage, he has never taken them really seriously. A civic official may profess in words a sensitive regard for these æsthetic considerations, and then proceed to ignore them in practice in the most cynical fashion. The average civic administrator, though desirous of doing his duty in all departments of his activity, needs as a rule considerable urging before he will go a step out of his way to preserve an object of natural or architectural beauty, or some site or monument of historical interest.

Even the enlightened town-planning enthusiast needs some watching. There is a significant sentence in a recent book by one of these, in which the writer exclaims: "It is so infinitely easier to achieve the hygienic, artistic, and economic objects of town planning when starting with a clean slate that one would like to see our overgrown towns done away with, and new ones built in their stead, if only this were possible." The writer does not go on to say that he would like his clean slate foursquare and flat, and ruled all over in rectangles with parallel lines —indeed, he would probably, on reflection, hardly stand to the more modest desire that he actually expresses—but his *obiter dictum* points to the possible danger of a doctrinaire insistence on certain special advantages that might, after all, be too dearly bought.

The French law now enables local authorities to schedule as protected, with the consent of the proprietors, objects or sites of pre-eminent natural beauty, and, as a last resort, to save them, if needful, for the public good by the process of compulsory purchase. The establishment in Prussia of a special conservator, with machinery at his disposal for the supervision and safeguarding of the natural beauties of the Fatherland, is a well-known fact that needs only to be referred to in passing.

The recognition by our own Government in the recent Town Planning Act of the national importance of this preservation of ancient features carries with it a logical consequence, on which a word may be said in the light of what has just been quoted from the rescripts of foreign ministers. It is obvious that there will now rest upon all the various departments of the British public service, concerned in building or pulling down, the obligation to assist in a loyal spirit in carrying out in matters of detail the expressed policy of the administration.

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*Abstract of a paper read at the Town Planning Conference, October 12th, 1910.

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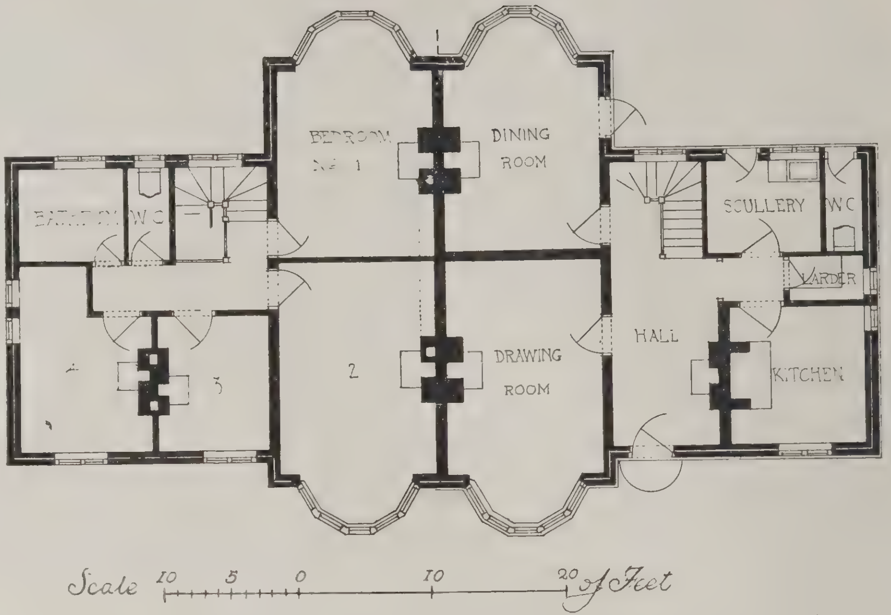


First Floor Plan. Ground Floor Plan.

NO. 4 AND 5, WINTERSTOKE GARDENS, MILL HILL. M. S. BRIGGS, A.R.I.B.A., ARCHITECT.

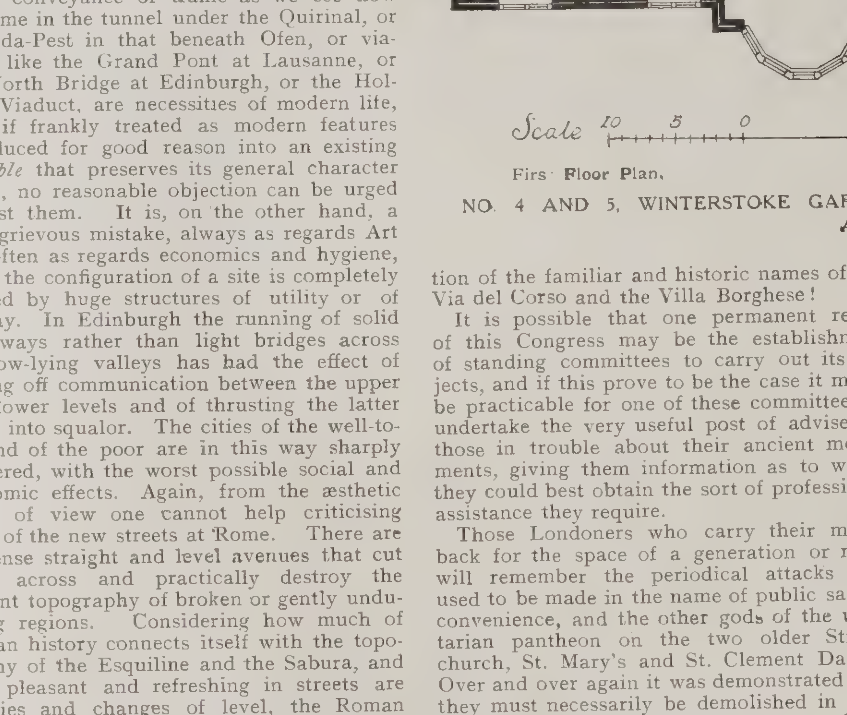
One practical object which is here in view is the devising of means by which alterations and improvements in our towns may be carried out without the disastrous demolitions of fine old buildings or the obliteration of the characteristic natural features of a site.

The arrangement of new streets and spaces in accordance with the configuration of a site, so that natural indications are followed out in Art, is so obviously right that one would apologise for mentioning it were it not for the glaring contraventions of the principle in certain modern towns. This does not mean that artificial lines of communication are never to be allowed. Such devices for the ready conveyance of traffic as we see now at Rome in the tunnel under the Quirinal, or at Buda-Pest in that beneath Ofen, or viaducts like the Grand Pont at Lausanne, or the North Bridge at Edinburgh, or the Holborn Viaduct, are necessities of modern life, and, if frankly treated as modern features introduced for good reason into an existing *ensemble* that preserves its general character intact, no reasonable objection can be urged against them. It is, on the other hand, a most grievous mistake, always as regards Art and often as regards economics and hygiene, when the configuration of a site is completely altered by huge structures of utility or of display. In Edinburgh the running of solid causeways rather than light bridges across the low-lying valleys has had the effect of cutting off communication between the upper and lower levels and of thrusting the latter down into squalor. The cities of the well-to-do and of the poor are in this way sharply sundered, with the worst possible social and economic effects. Again, from the æsthetic point of view one cannot help criticising some of the new streets at Rome. There are immense straight and level avenues that cut right across and practically destroy the ancient topography of broken or gently undulating regions. Considering how much of Roman history connects itself with the topography of the Esquiline and the Sabura, and how pleasant and refreshing in streets are flexities and changes of level, the Roman ædiles of to-day would seem as ill-advised in plans of this kind as in their recent alteration of the familiar and historic names of the Via del Corso and the Villa Borghese!

It is possible that one permanent result of this Congress may be the establishment of standing committees to carry out its objects, and if this prove to be the case it might be practicable for one of these committees to undertake the very useful post of adviser to those in trouble about their ancient monuments, giving them information as to where they could best obtain the sort of professional assistance they require.

Those Londoners who carry their minds back for the space of a generation or more will remember the periodical attacks that used to be made in the name of public safety, convenience, and the other gods of the utilitarian pantheon on the two older Strand church, St. Mary's and St. Clement Dane's. Over and over again it was demonstrated that they must necessarily be demolished in view of the exigencies of the traffic, and the defence of them on æsthetic and historical grounds was only just strong enough to keep public opinion from sanctioning their destruction. What has been the result? These two long-threatened monuments have not only ceased to be obstructions, but are now the centres—the very eyes, so to say—of a grand architectural scheme, of which they may be regarded as the generating *foci*. This scheme did not start with the speculative builder's first principle of clearing away everything that was growing upon the site, but took these monuments as a starting-point, and worked from them and round them, to the happy result of which we are all witnesses. It is the most instructive and at the same time the most encouraging object-lesson in the right method of treating town-planning questions in our older cities. Let us hope that Croydon will ultimately deal in the same happy fashion with its own urban problem of Whitgift Hospital, and that the friends of ancient monuments in all our ancient centres of population will take fresh courage for the fight that they have continually to wage against what is at best indifference, at worst an active spirit of vandalism.

In the protection of natural and artistic beauty we must be vigilant and insistent, for we have to combat indifference and, what is perhaps worse, a professed willingness of purpose that breaks down at the first fence. We must hold up our end against the doctrinaire with his clean slate and paper projects, and must plead in our urban schemes for the grace of variety, for the interest of historical association, for the value in modern life of those monuments of the art of the past, which have not only an æsthetic charm hard to compass in modern work, but are centres round which the national and civic patriotism of the young may be taught to grow.



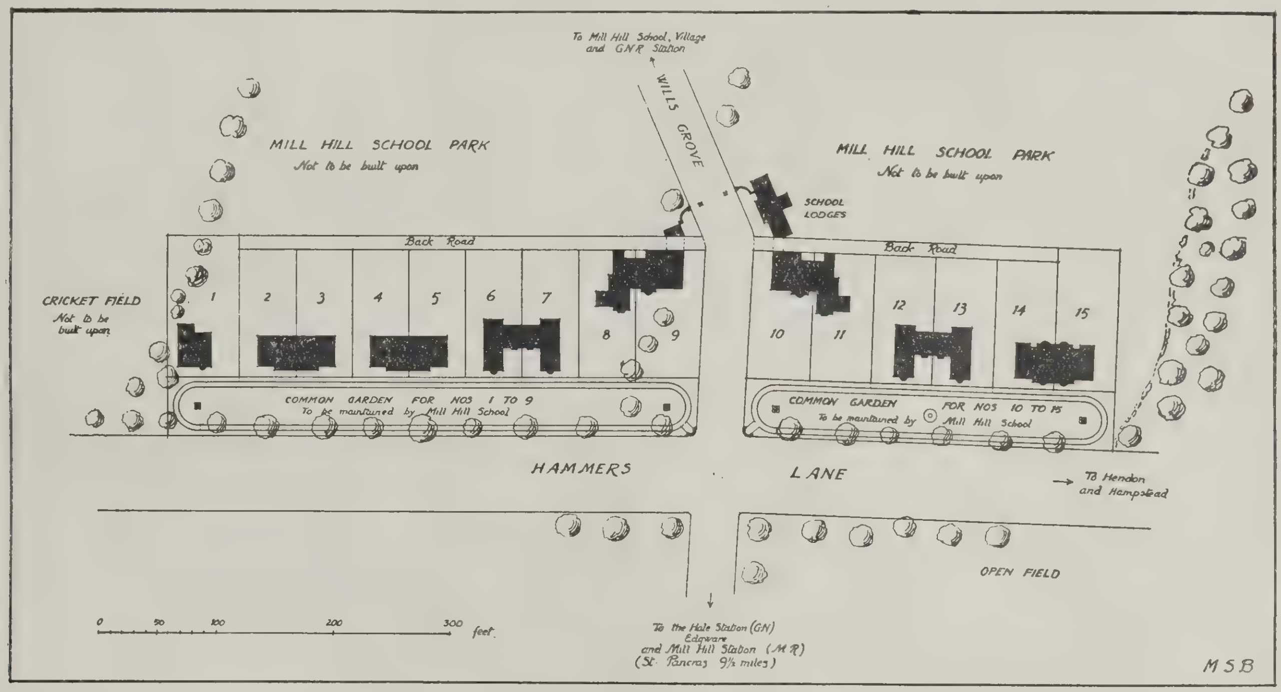
First Floor Plan. Ground Floor Plan.

NOS. 6 AND 7, WINTERSTOKE GARDENS, MILL HILL. M. S. BRIGGS, A.R.I.B.A. ARCHITECT.

WINTERSTOKE GARDENS, MILL HILL, N.W.

(See *pages* 439, 440, *and* 441.)

With garden cities on every hand, and the Town Planning Act at last making its influence felt, it is not surprising that many architects and (which is more helpful still) many landowners are beginning to realise that the idea may be adapted to schemes which are by no means vast in their scope. The Mill Hill School authorities, instead of selling the frontage in their possession, without enquiry, have only leased their parcel of ground on conditions which admit of no slack workmanship and no ill-considered schemes. Their architect is himself an alumnus of the school, and the builders are experts in garden city work. A scheme has been prepared by which all the fine trees along the frontage to Hammers Lane are preserved, and virtually all those within the part of the park earmarked for building will also remain. The fifteen houses now being erected are planned so as to lead the eye up to a central entrance to the school park by way of Mills Grove. Here will be formal gate-piers, and probably lodges. For the mutual benefit of the school and the occupiers of these houses, the private gardens behind are not to be fenced in in the usual way, but are to be left sufficiently open to allow of a clear view up the magnificently timbered school park, always to be left open and undisturbed. But the feature of the design which chiefly entitles its promoters to claim for it all the essentials of the garden city ideal is the long garden in front maintained by the school and sacred to the uses of the owners of these houses alone. Our bird's-eye view, taken in conjunction with the block-plan, shows the treatment of these gardens as nearly as can be settled at this stage, with a vista of many hundred feet along a stretch of greensward bordered by flower beds and the fine row of elms in front. They are spaced so far apart that the residents need not have the usual suburban drawback of being overlooked by each other. The four houses (8, 9, 10, and 11) forming the centre piece, are to be in the Georgian style, with carefully chosen brickwork and dark tiled roofs, while in the other blocks the architect has adopted a slightly more modern treatment, in keeping with Georgian tradition. A detached house occupies the plot next to the school's first eleven cricket ground, and the remainder are semi-detached. For the rest, the plans and perspectives are self-explanatory. The materials used are simply the Tring, Crowborough, and Osta bricks, with occasional rough-cast walls, and red sand-faced tiles throughout. The builders are Messrs. William Moss and Sons, of Loughborough, and of the garden suburb at Hampstead. The architect is Mr. Martin S. Briggs, of 14, North Audley Street, Grosvenor Square, W., and 16, Brockenhurst Gardens, Mill Hill.

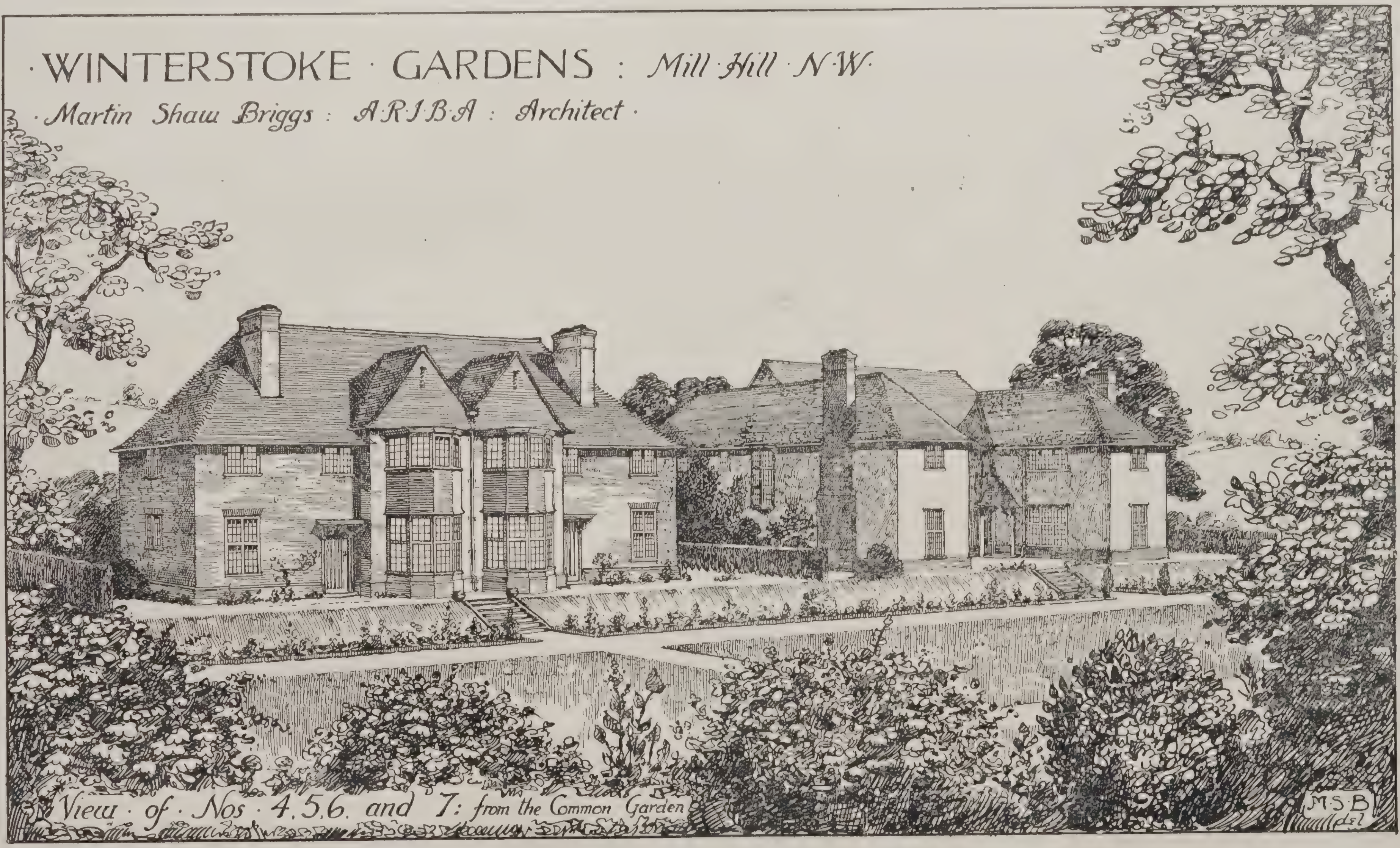


WINTERSTOKE GARDENS, MILL HILL: SITE PLAN.

HISTORY AND DEVELOPMENT OF REINFORCED CONCRETE.

Introductory to a course of about 60 lectures on Reinforced Concrete which is to be given this session at the London County Council School of Building, Ferndale Road, Brixton, S.W., by Mr. H. Kempton Dyson, Secretary of the Concrete Institute, a special free public lecture on "The History and Development of Reinforced Concrete" was delivered on Tuesday, 27th September, of which the following is a summary: It is only within recent years, namely, about the last 12, that reinforced concrete as a method of construction has come into prominence. The subject, however, is not entirely new, because it is over 50 years since attention began to be directed by inventors thereto; and, indeed, reinforced concrete of a kind has been done for ages almost. The roof of a tomb constructed by the Romans 100 years or more B.C., situated on the Via Appia, has been found to consist of a slab of lime concrete in which bronze rods were placed crossing each other latticeways to strengthen or reinforce it. In the wide sense the Romans reinforced concrete in other ways, by timber and tiles, while at one point it has been found that the Great Wall of China on a bad subsoil was built on a kind of concrete raft in which timber, reeds, and rushes were embedded to strengthen it. In the Middle Ages timber was frequently employed to reinforce rubble concrete walls.

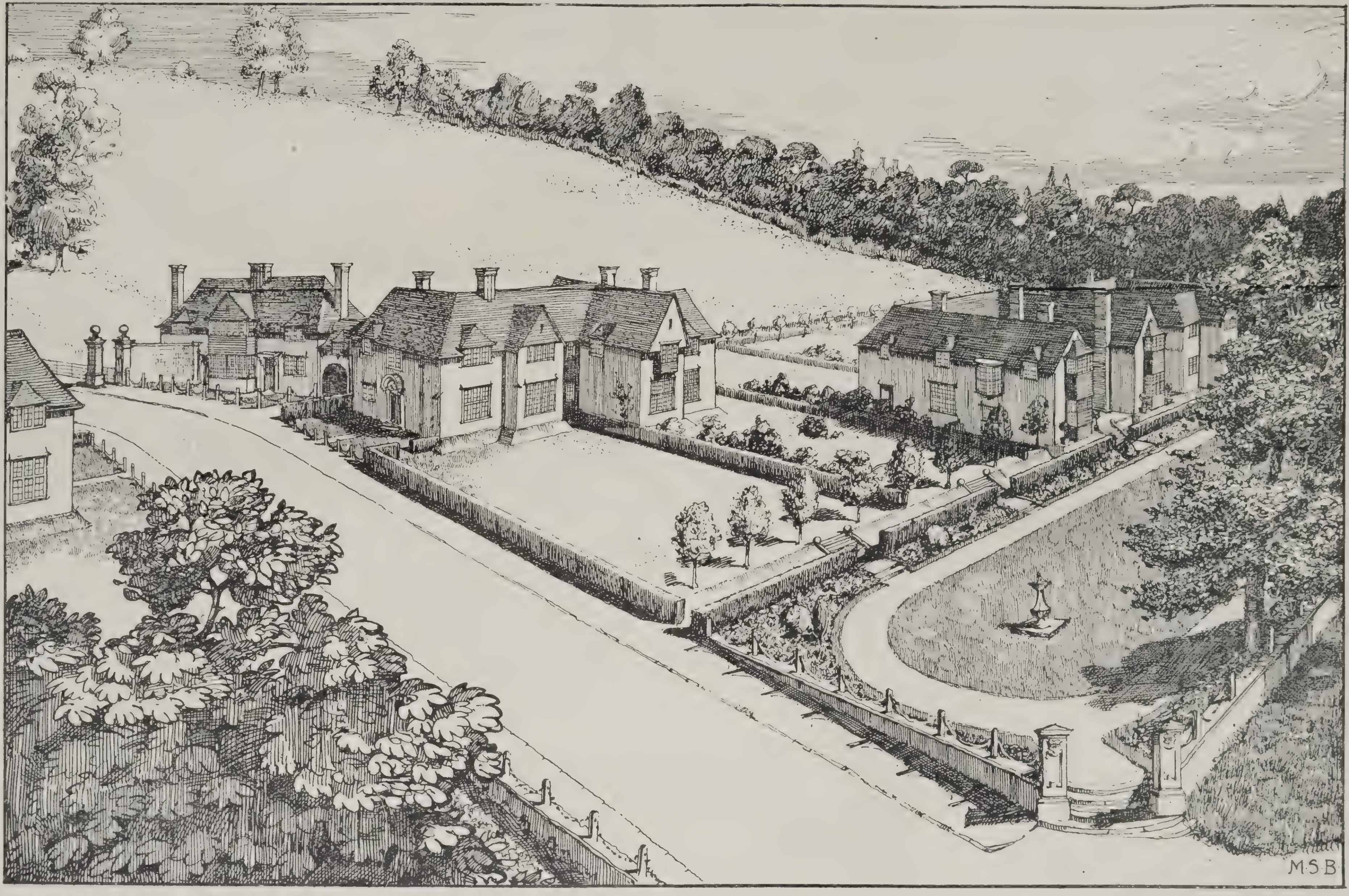
The first suggestion of an idea of reinforcing concrete in modern times seems to have been a statement in J. C. Loudon's "Encyclopedia of Cottage, Farm, and Village Architecture," published in 1830, in which it was suggested that flat roofs might be constructed of a lattice work of iron tie rods thickly embedded in cement, and cased with flat tiles. In 1840, about two systems of floor construction were employed in Paris, known as the Vaux and Thuasne systems; the former consisted of round rods, closely spaced, hooked over flat wrought-iron bars placed on the edge some distance apart, and embedded in a slab of plaster of Paris concrete: while the latter employed small iron joists with hangers or stirrups placed over them in which round rods were suspended, placed in holes in the stirrups. Plaster of Paris was, however, not a proper cement to be employed, as it caused the embedded iron to rust, and probably the reason reinforced concrete did not arrive sooner was that the world was waiting for a suitable cement for making concrete—it needed Portland cement, which was invented in 1824, but was not manufactured to any extent until some years later. The first real inventor of reinforced concrete in the modern sense seems to have been J. B. Wilkinson, a plasterer of Newcastle-on-Tyne, who took out a patent for floors and beams of the same in 1854. M. François Coignet, a Paris contractor, took out a patent in 1855 for reinforcing slabs with a network of iron rods, and a M. Lambot, another French contractor, proposed the construction of ships by means of concrete with an embedded skeleton of wire, and he constructed a punt of the kind which was shown at the Paris Exhibition of 1853, and is still in service in a pond at Miraval, where he resided. The development of the subject was extended by the following inventors: C. C. Dennett (1857), Matthew Allen (1862), Frederick Ransome (1865), H. Y. D. Scott (1867), Philip Brannon (1870), who first suggested the driving of reinforced concrete piles, Monier (1867-1873), Thaddeus Hyatt (1873-1877), who conducted a great many tests on reinforced concrete beams, and showed how to make calculations for determining their strength, W. H. Lascelles (1877), W. E. Ward (1875), H. J. Jackson (1877), E. L. Ransome (1884), J. C. Golding (1884), W. H. Lindsay (1885), William Simmons (1885-6), who designed the block of offices No. 63, Lincoln's Inn Fields, London, which, constructed of reinforced concrete, is still in use and in excellent condition, Lee and Hodgson (1885), who invented a spirally reinforced concrete column, Bordenave (1887), Cottancin (1889), W. H. Briggs (1889), J. Mayoh (1890), A. J. B. Ward (1891), C. A. Day (1891), Franz P. Meyenberg (1891), who introduced the first loose stirrups in beams, F. G. Edwards (1891), P. Stuart (1892), Koenen and



·WINTERSTOKE · GARDENS : Mill·Hill ·N·W·

·Martin Shaw Briggs : A·R·I·B·A : Architect ·

View · of · Nos · 4, 5, 6. and 7: from the Common Garden



WINTERSTOKE · GARDENS ·

Martin · Shaw · Briggs : Architect :

Wayss (1892), François Hennebique (1892). There have been many systems invented subsequently, over seventy being upon the market in Europe and America to-day. Reinforced concrete is now used for the following: Beams and slabs, cantilevers, arches, columns, piles, pipes, masts, telegraph, tramway, and electric light poles and standards, reservoirs, barges, boats, punts, pontoons, caissons, ordinary walls, retaining walls, fence and fence posts, clothes posts, hitching posts, paths and pavements, cowhouses, piggeries, greenhouses, sheds, warehouses, offices, churches, houses, etc., railway sleepers, chimney shafts, sea protection walls and groynes, tables, window frames, safes, strong rooms, garden seats, cabinets, and other furniture—yea, even tombstones and coffins. Reinforced concrete possesses the advantages of strength, durability, freedom from continual painting and upkeep, hygiene, fire resistance, freedom from vibration, and economy.

FEDERATION NEWS.

London Master Builders' Association.

A special adjourned and an ordinary Council meeting were held at the new offices, Koh-i-Noor House, Kingsway, W.C., on Thursday, the 13th instant, under the presidency of Mr. Leonard Horner (president).

A committee was appointed to confer with the Royal Institute of British Architects on the L.C.C. suggested building regulations re reinforced concrete construction.

Legal matters relating to the new premises were considered.

Many questions of interest to the trade in general were discussed.—THOS. COSTIGAN, Secretary.

Midland Centre.

The usual quarterly meeting of the Executive Council of the Midland Centre of the National Federation was held in Birmingham on Thursday, October 6, the president (Colonel G. Barnsley, J.P.) in the chair.

The Secretary reported that there was no change in the National or Midland Centre Reserve Funds since last meeting. In regard to the former, he had (as instructed by the Finance Committee) applied for payment of sums promised. The Council considered the recommendation of the Finance Committee in regard to the publication of a Year Book, and the secretary brought before the meeting a quotation for printing the book which he had obtained. The following resolution was passed:—"That the recommendation of the Finance Committee in reference to the publication of a Year Book be adopted, and that the secretary be instructed to write the Local Associations on the matter, soliciting their support and co-operation." A special sub-committee (consisting of the members of the Finance Committee, together with Messrs. Jas. Wright, A. Chambers, and J. H. Walker) was formed to see the matter through.

The Secretary's quarterly report stated that the only difficulty with the operatives had occurred at Mansfield, where the carpenters and joiners had given notice of alterations of rules in regard to rate of wages, winter hours of work, overtime, etc., and notices for alterations of rules. The case was considered by the Local Conciliation Board, but no settlement resulted, and it was therefore referred to the Midland Centre Board. The decisions given by this Board, including an advance of ½d. in the rate of wages, were mainly in favour of the operatives.

The secretary attended the half-yearly meeting of the National Federation at Chester, and has since forwarded to the local associations copies of the minutes of the meeting. The work of the Centre had gone on quietly during the quarter, which had, of course, included the holiday season. As instructed, the secretary had drawn up a report on the Inter-trading Rule, and had sent a number of printed copies of same to the local associations. In cases where the rule is not in force, the secretary suggested that special meetings should be held to consider the advisability or otherwise of adopting the rule. Towards the end of last month the secretary sent to over a hundred builders who are outside the radius of any local association in the Midlands a letter pointing out the objects and advantages of the Federation, and requesting them to become individual members of the Centre. Very few replies had been received. The report was ordered to be entered on the minutes.

The secretary was instructed to attend the Conference of Secretaries at Manchester on October 19. The following resolution was passed:—"That this Executive Council requests the Local Associations in the Centre to insure the attendance of their secretaries at the Conference of Secretaries." [Held last week.]

Messrs. Jas. Wright (Nottingham) and F. Beck (Leicester) were appointed to represent the Centre on the East Midlands Advisory Committee in connection with Labour Exchanges Act.

The Secretary read a letter from Mr. A. G. White, in reference to the Leicester demarcation case in regard to domestic supply services. The following resolution was passed:—"That copies of the award in the Leicester demarcation case be sent to the local association in sufficient quantities so that each member of the Federation may receive a copy."

The next quarterly meeting was provisionally fixed for Thursday, 12th January, 1911.

Barnsley.

The monthly meeting was held at the King's Head Hotel, Barnsley, on Wednesday, Oct. 12th, Councillor G. Haigh, in the unavoidable absence of the president, occupying the chair, supported by fourteen members.

Mr. D. R. Snowden, a past president, whilst cycling, was run down by a taxi-car recently, and was seriously injured. A vote of sympathy with Mr. Snowden, and trusting for a speedy recovery, was unanimously approved of.

It was resolved that the present individual members' levy to the National Reserve Fund remain as constituted for the present. Mr. Gillott, the manager of the Local Labour Exchange, attended, and gave a short address on the general advantages, etc. He was accorded a courteous reception. The gist of his remarks were as follows:—He said Labour Exchanges had been established to solve the unemployment problem; he must admit that the exchanges would not altogether solve this complex problem. "What mainly constituted the unemployed?" (1) Unfit; (2) work-shy and idle; (3) too old at 40. "What could Labour Exchanges do?" Bring the unemployed workmen into direct contact with the employer, and vice-versa. It was very disheartening for skilled workmen to tramp the country—very demoralising; might be tramping many miles whilst employers in another part of the country were wanting workmen. Since the Labour Exchanges had been formed, they had filled over 242,500 registrations, and over 200,000 situations had been filled. In Barnsley, since August this year, over 1,750 had been registered, and over 1,000 situations filled, 60 per cent. of whom were skilled workmen. Labour Exchanges exist at present in France, Belgium, Germany, Austria, Switzerland, and Norway, but were municipal only, and not national, as in England. Berlin alone had filled up over 100,000 situations. Stuttgart had filled up 1,200 situations in one week. If Labour Exchanges were such a success in Germany, why not in England? They were very particular in registering a man, requiring the fullest and minutest details regarding length of employment in last situation, etc. If employers would utilize the Labour Exchange when in want of hands, instead of starting men haphazard, they would reap the benefit. It was to the Labour Exchange's own direct interest to send the best men. He asked the employers present to give them a fair trial, and not discredit them on a first failure. We had all to live and learn, but try again. He strongly appealed for the employers' support, to make the Labour Exchange the success it deserved to be, and he had every confidence the employers would help him.—J. DENTON, Secretary.

Wakefield and District.

The first meeting of the members of Wakefield and District Master Builders' Association after the summer vacation was held at the Great Bull Hotel, Wakefield, on Oct. 6th. In the absence of Alderman Judge (president), through illness, Mr. E. A. Elvey (vice-president) was elected to the chair.

Mr. Henry Fallas gave an interesting report on his visits to the meetings of the Yorkshire Executive Federation, held in Hull, Scarborough, and Bridlington, since the last meeting of the association, and expressed his satisfaction with the way in which several important questions brought before the meetings had been dealt with by the Council. On the proposition of Mr. Elvey, seconded by Mr. Fallas, the secretary was directed to attend the meeting of secretaries to be held in Manchester on Oct. 19th. [last week.]

The circular letter which the Yorkshire Federation are sending to the architects in Yorkshire, making certain suggestions with regard to tenders, quantities, schedule of prices, and other matters affecting contractors, was read, and on the motion of Mr. G. Crook, seconded by Mr. T. Lee, it was decided to send a copy of the letter to each architect in the district.

A discussion also took place on the report received from Mr. Davidson, Federation secretary, relating to the returns as to land values under the recent Finance Act.

During the meeting a new member was elected on the proposition of Mr. Fallas, seconded by Mr. J. P. Ashley.—J. BEAUMONT, Secretary.

Northampton.

At the annual dinner of the Northampton Master Builders' Association, which was held at the Grand Hotel, Northampton, Mr. A. M. Dunham (president) occupied the chair, and presided over a numerous company, which included the Mayor of Northampton (Alderman H. Butterfield, J.P.).

The Mayor, replying to a toast, said that there was a prospect of the town going ahead. Already they had prepared an Omnibus Bill to go to Parliament for the improvement of the Borough. Although all these things were not immediately to be gone on with, they were put in to avoid the expense in going again and again to Parliament for powers.

Mr. J. J. Martin proposed the health of the architects of Northampton. Mr. Sydney Harris, Mr. W. D. Gibbons, Mr. J. Brown, jun., and Mr. C. Crofts also responded. Mr. Brown thought that the trade would be benefited by an alteration in the by-laws, which he thought were antiquated.

Mr. J. F. Stops proposed "Success to the Northampton Builders' Association; and Mr. Dunham, in reply, said the master builders had had no serious difficulties of late. Trade had been a little bit slack, and perhaps that accounted for it; but any little grievance that had arisen with the men had always been amicably settled. He appealed to members to attend the meetings, and so settle any little grievances speedily and pleasantly.

Mr. J. Bird submitted the toast of "The Visitors," Mr. H. Green that of "The President," Mr. E. Archer that of the Vice-president, and Mr. R. W. Harris, in proposing the health of the secretary, paid a graceful compliment to the work of Mr. A. L. Airs.

The annual general meeting of the Northampton Builders' Association was held at the Peacock Hotel on Friday evening, Oct. 7th, when Mr. R. W. Harris presided over a well attended meeting. The secretary read the minutes of the last annual general meeting, held Oct. 8, 1909, together with an abstract of accounts for the year ending June 30, 1910, which were duly adopted.

The following officers were elected for the year 1910-1911:—Mr. A. M. Dunham, president; Mr. C. H. Green, vice-president; Mr. H. W. Hanwell, hon. auditor. The old committee were re-elected en bloc.

The thanks of the Association were accorded to the retiring officers.—ARTHUR L AIRS, Chartered Accountant, Secretary.

DEMARCATION DISPUTE IN MANCHESTER.

What might have resulted in a serious dislocation of a large section of the building industry in Manchester and beyond has, it is hoped, been happily averted by a recommendation arrived at at a joint meeting of the committees of the Master Plumbers' and Operative Plumbers' Associations, which was held in Manchester. It appears that for some considerable time friction has existed amongst the operative plumbers as to the employment of men as glaziers exclusively, the plumbers contending that glazing was a part of the work of plumbers. The basis of the dispute may be found in the fact that while the operative plumber receives 9½d. per hour, the rate of pay of the glazier is 7d. or 7½d., and the plumbers complained that while members of their trade were out of employment the work which legitimately belonged to them was being discharged by glaziers at a less rate of wages.

As far back as April 3 the operative plumbers in Manchester and elsewhere sent to the employers three months' notice that henceforth all glazing must be done by plumbers only. They were willing, however, that men at present employed as glaziers might remain in their present employ, but as they fell out or were discharged their work must be undertaken by plumbers. To this the Employers' Association sent a reply pointing out that glazing had never been considered as exclusively the work of the plumber, and that if they insisted on their claim, it was necessary, in accordance with the arrangements betwen the employers' and operatives' societies, that a new rule to this effect should be mutually agreed upon. To this the operatives replied that they were not breaking any regulation in what they were doing, and that no notice was required at all, but that they had given the employers three months' notice from motives of generosity.

Later, in June, the operatives wrote asking that a joint meeting might be held with the employers to discuss the matter. This meeting was held on June 29, but no decision was arrived at. On July 3 the employees wrote again to the employers stating that the three months' notice must stand, and that no more glaziers as such must be employed. On August 8 the operatives were informed by the employers that they could not recognise the demand of the operatives, but expressed their willingness to discuss the matter after receiving six months' notice, as provided in the rules existing between the parties. The employers based their case upon a clause in the agreement, which laid it down that any alteration of rule—such as, they contended, this claim of the operatives amounted to—must be subject to six months' notice given by either side, to expire on September 1. This notice had not been given. From time immemorial, they said, glaziers had been employed to do glazing only, especially by large employers, and that to give the work to plumbers exclusively was to change the custom, and was equivalent to a new rule. Upon this question the unions employed on several jobs in Manchester and Salford struck work; but at the joint meeting of the Committees of the Master Plumbers' and Operative Plumbers' Associations, it was finally recommended by a unanimous vote that glazing work shall be done by plumbers only, on and after September 1, 1911, the men who have been employed as glaziers only from September 1, 1910, to be retained until they are discharged, and not to be re-employed as glaziers.

This recommendation will be submitted to general meetings of the two Associations, to be held immediately; but it was stated that work would not be resumed by the operatives concerned till the recommendation of the joint meeting had been adopted.

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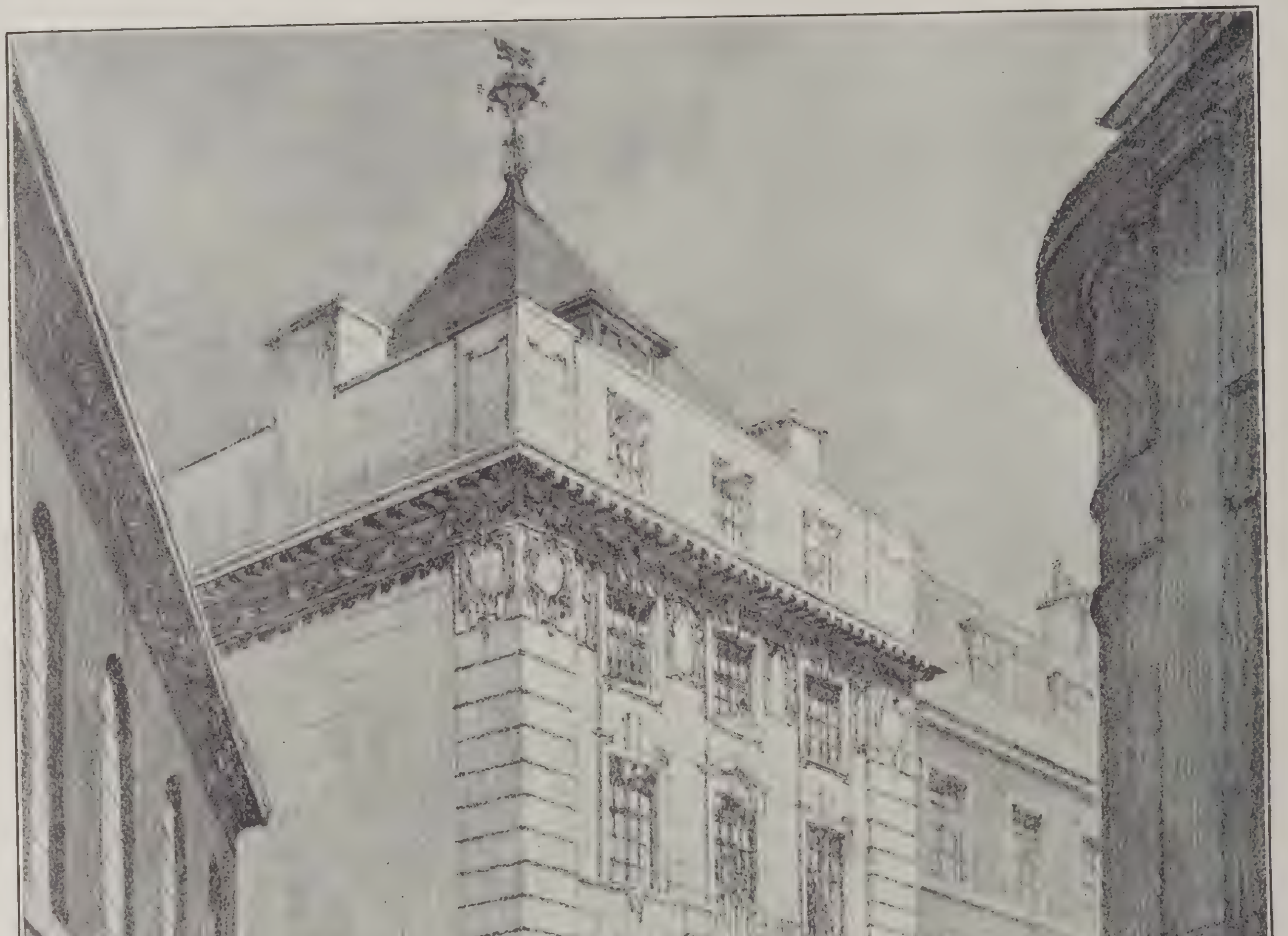
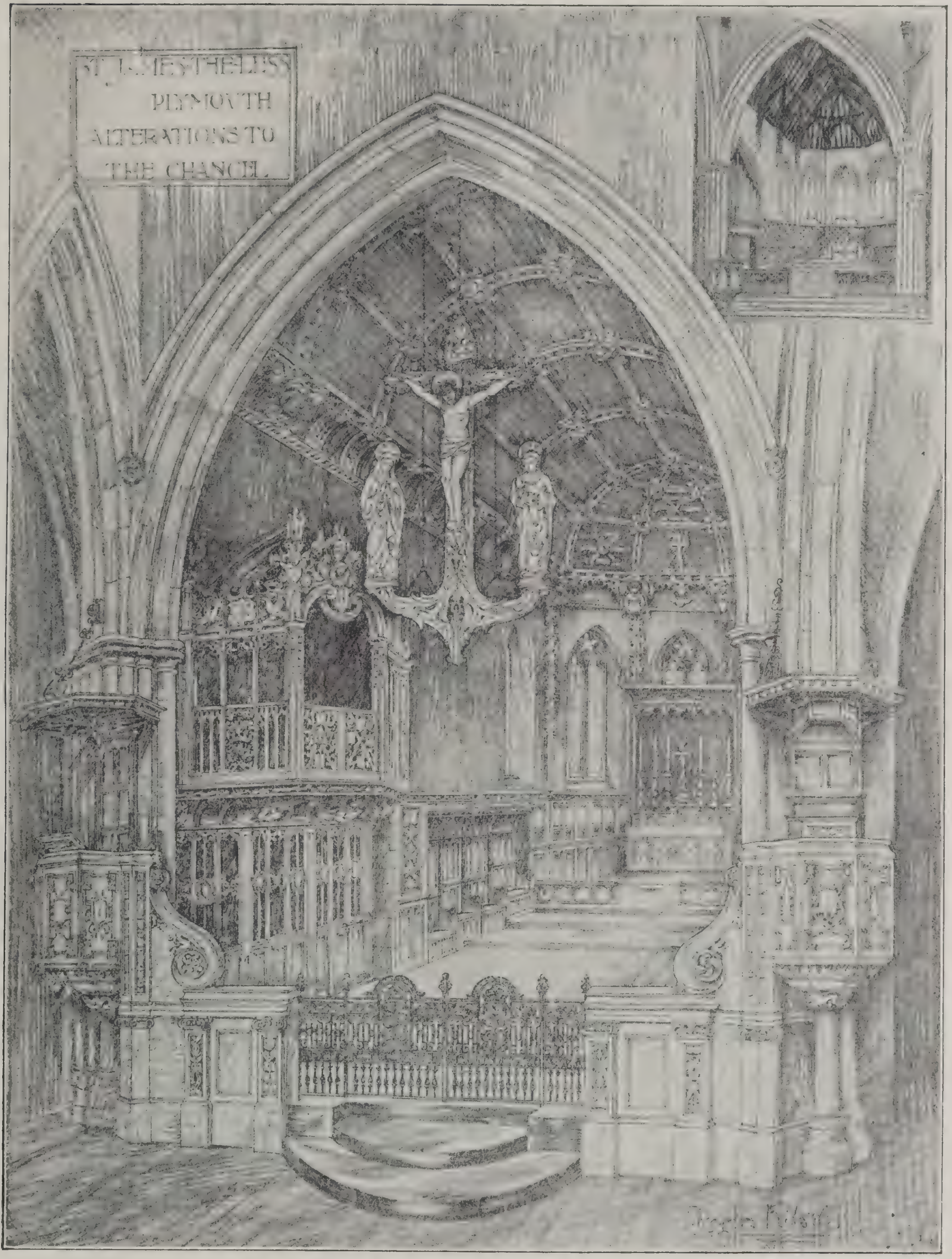
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *November 2nd, 1910.*



THE RADIUM INSTITUTE, RIDING HOUSE STREET, PORTLAND PLACE, LONDON, W.
T. P. FIGGIS, F.R.I.B.A., ARCHITECT.



T. ROGERS KITSELL, A.R.I.B.A., ARCHITECT.

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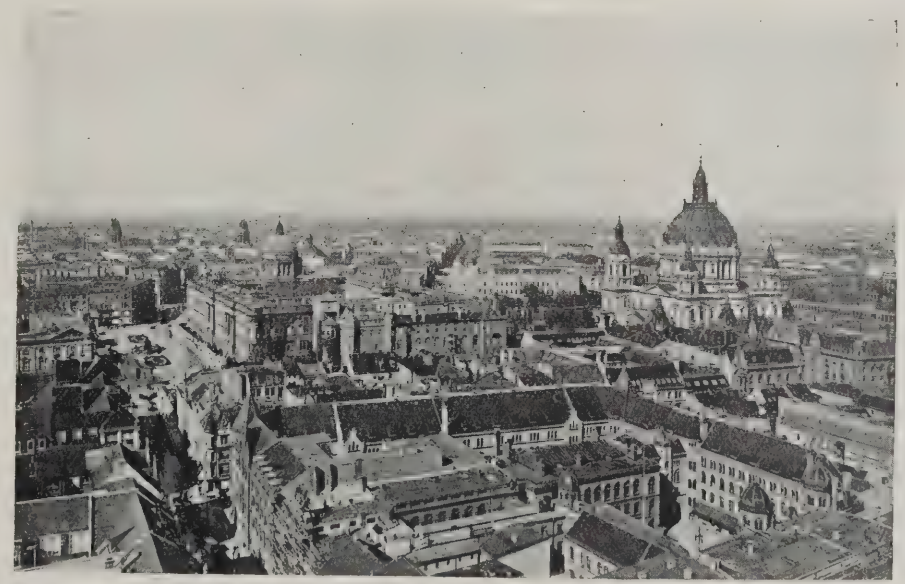
THE ARCHITECTS' & BUILDERS' JOURNAL

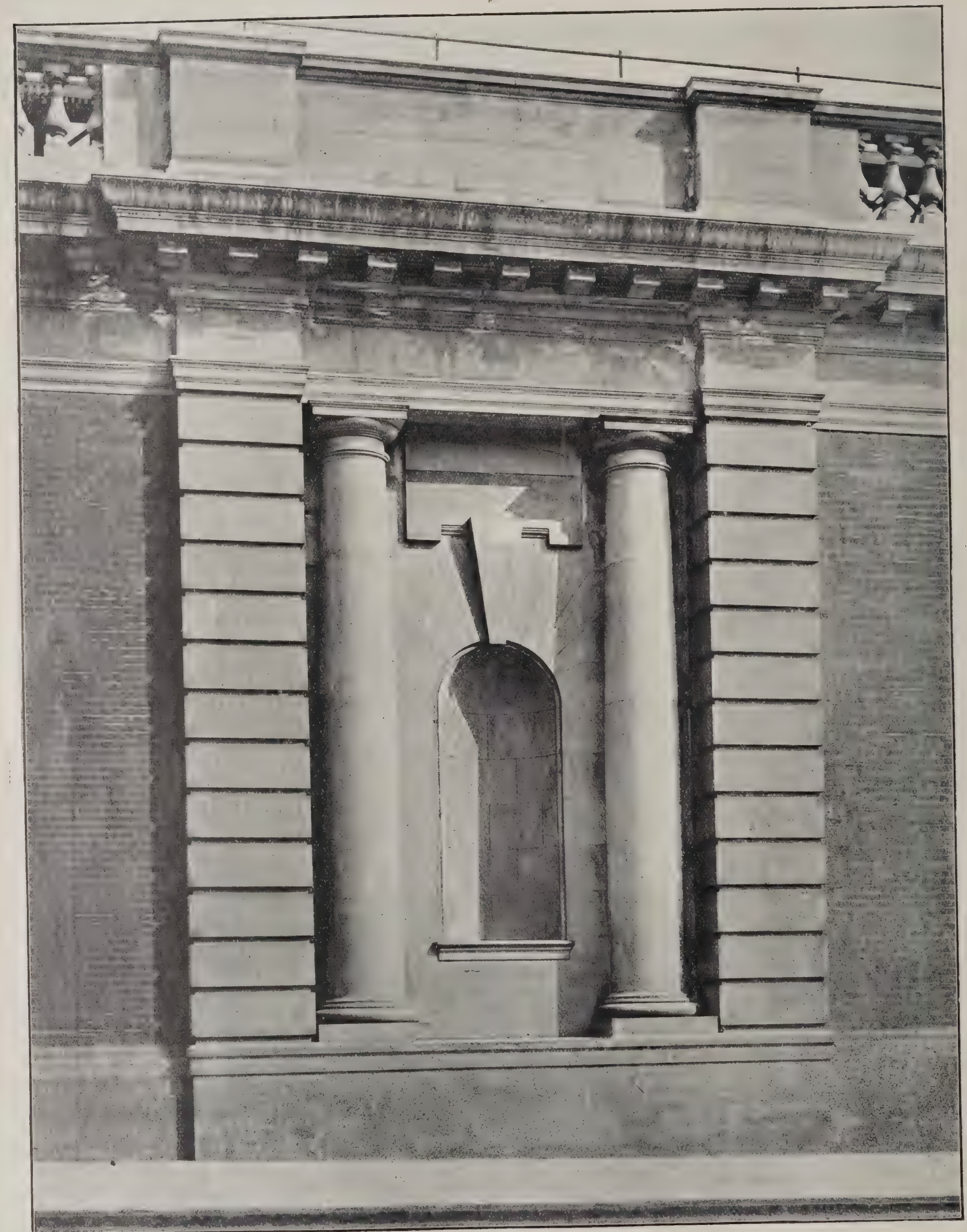
WEDNESDAY,
NOVEMBER 2nd, 1910.

Volume XXXII. No. 822.



The domed building on the right is the new Cathedral, that on the left the old Royal Palace. The avenue in the middle of the picture is Unter den Linden, Berlin's chief thoroughfare, leading westwards to the Tiergarten, which resembles a forest rather than a park.

BERLIN, FROM THE TOWER OF THE RATHAUS.



This wall forms the boundary of the new Victoria Station next Buckingham Palace Road. Much consideration was given to its design, several authorities being concerned—in particular the London, Brighton, and South Coast Railway (Mr. Charles L. Morgan, Engineer) and the London County Council (Mr. W. E. Riley, F.R.I.B.A., Superintending Architect). The result is a very successful piece of work. Detail drawings of it are given on pages 466 and 467 of this issue.

BAY OF SCREEN WALL, VICTORIA STATION, LONDON.

THE ARCHITECTS' &
BUILDERS' JOURNAL.

NOVEMBER 2nd, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 822.

Note: The List of Contents will be found on Page V of the front advertisements

The Royal Commission on Historical Monuments.

THE first publication of the Royal Commission on Historical Monuments, if it is an earnest of the scale and the manner in which their complete work is to be carried out, promises a series of volumes the interest and value of which it would be impossible to overrate.

In recent legislation on the subject the expression "historical monuments" has generally been taken to signify such remains as throw light on a remote past: tumuli, ancient camp sites, Roman walls, stones set up by some prehistoric people, etc. Stonehenge, in this sense, is a typical historical monument. From the point of view of national history, monuments of this class are of the greatest importance, because they go back earlier than any documentary evidence; and they are the class which most require safeguarding by law, since their value is little apparent to the mind of the average owner. There are plenty of landowners who would be quite alive to the duty of preserving the remains of an abbey church which was on their estate, who would allow the remains of an ancient hill fort or camp to be ploughed up, from mere ignorance of their historic value.

These, therefore, are the most important class of objects to be protected; but it is fortunate that the Royal Commission, in their volume on Hertfordshire, while giving every attention to these, have widened the scope of their publication so as to include antiquities of every class, down to a comparatively late date. The work of the Commission has been divided up into four classes, to be dealt with by four sub-Commissions: (1) Pre-Roman monuments, and earthworks other than Roman; (2) Roman monuments and Roman earthworks; (3) English ecclesiastical monuments; (4) English secular monuments. The last class includes such buildings as Hatfield House, and many lesser and little known houses of similar date. It was determined that the County should be the unit of publication; and on this scheme each volume issued will form a kind of *catalogue raisonnée*, on a large scale, of all the antiquities of every kind contained in the County. Hertfordshire was selected as the first County to be dealt with—we are not told why; possibly it presented an easier task than some others, and was therefore better fitted for an experimental volume. The book is extensively illustrated by photographs of many of the ancient buildings catalogued; plans of sites which have any special interest; and a general plan of the County, on which the positions of the buildings or sites described are marked. The Commission are to be congratulated on this first result of their labours. When, as we hope, the whole of the counties of England have been illustrated and described on a similar scheme, the result will be a complete record of the objects of archæological interest in this country. It must necessarily be a work of time, but it is to be hoped that so great an enterprise will be steadily pursued to its completion.

The central object of interest in Hertfordshire is of course St. Albans Cathedral. Had such a Commission been appointed some thirty years earlier, it is interesting to conjecture what might have been its views in regard to the operations of the late Lord Grimthorpe, who was allowed to make this great historic building his plaything. The facts are possibly unknown to, or forgotten by, the younger generation of the present day. Lord Grimthorpe had a fancy for playing the amateur architect, and was ready to purchase the privilege at the cost of bearing the whole expense of his work of so-called restoration at St. Albans. The authority who had to sanction these proceedings was the then Chancellor of the Diocese, who, on being asked to sit in judgment between Lord Grimthorpe's design for a new west front and that of a well-known and experienced Gothic architect, declared that it was no use showing him drawings, as he could not understand them, but that he must of course give the preference to the designs of a gentleman who so nobly and generously offered to defray the whole cost of the repairs; and a petition of the Institute of Architects, praying that a competent architect should be appointed, was dismissed by the Chancellor as "an unseemly interference," the innuendo being, of course, that the architectural profession were merely actuated by a selfish desire to secure the work for one of their own body. Whether such an extraordinary display of ignorance and indifference would be possible, or would be accepted by public opinion, at the present time, is doubtful; but it was generally accepted then. People of high general education and culture were heard to express their astonishment that any question should be raised as to the propriety of putting the restoration of a great building, which was a piece of national property, into the hands of a lawyer, seeing that the lawyer had offered to find the money. We have moved somewhat further since then, and we do not think public opinion would support such a view now, nor would the "Times" venture to support it, as it then supported Lord Grimthorpe. The west front, as it now stands, was not really designed by Lord Grimthorpe, though he claimed the credit of it; he had in his employ a man who had been, we believe, a kind of clerk of works under Scott, and had picked up a smattering of Gothic. The detail is bad and coarse, but the west front is respectable compared with the treatment of the two transept fronts. The south transept was rebuilt with a great group of lancet windows carried up far above the internal ceiling, provision being made for concealing this fact internally, and giving the windows a sham finish a good way below their exterior heads. The north transept was furnished with a wonderful circular window, which looks, as someone described it, as if it had been designed by arranging half-crowns in a circle, and then shillings in an inner circle, and then sixpences inside that. This window was a stumbling-block even to the amateur architect's own friends; some of them, who had supported him up to that point, found the north transept window too much for them.

Histories of this kind are so soon forgotten, and are so instructive as to the condition and progress of public taste in architecture, that it is worth while to remind people of them. The Royal Commission contents itself with merely recording the fact that such parts of the building had been rebuilt by Lord Grimthorpe. Considering that the appointment of the Commission was in part with the object of promoting the preservation of ancient monuments, they might surely have taken the opportunity of entering a caution against the precedent of allowing such monuments to be tampered with by architecturally ignorant persons. As to the propriety of rebuilding the west front at all, we do not think there was much to be said against it. It was in a very dilapidated state, and nearly all architectural detail had disappeared from it except a few bits of moulding half imbedded in the stone patching up of a late period; and the new position given to the abbey as a diocesan cathedral was a very good excuse for dignifying it with a new façade. But it should at all events have been carried out by someone who had a thorough knowledge of Gothic detail, and who could have produced a fine architectural design.

The illustrations and plans included in the volume serve as reminders of some very interesting examples among the smaller buildings of the county. There is the little half-ruined church at Flaunden, with a plan in the shape of a Greek cross, only about 35 feet in internal length and width. There is the remarkable plan of Great Berkhampstead Church, with its long narrow nave, and chapels on the east side of the north transept. There is the plan of Berkhampstead Castle, showing the *enceinte* wall and the tower, and the circular shell keep standing apart (what is left of it) on a mound encircled by a double ditch. Among the houses illustrated is the long picturesque seventeenth century front of Rothamsted, in the parish of Harpenden, with its succession of scrolled and pedimented gables; and the charming late sixteenth century front of Hadham Hall, Little Hadham, with its two octagonal turrets with a battlemented finish, and with gabled windows with wooden mullions; we should be rather inclined to question whether the window designs are not insertions of later date than the walls, though it is not suggested in the description. Perhaps the most interesting of all the illustrations of the smaller class of buildings is the simple but nobly designed tower of Ashwell Parish Church, to which the boldly projecting buttresses give such a fine pyramidal effect; it appears to have entirely escaped "restoration," and preserves the surface texture that only time and weathering can impart. But is it rightly described as "fourteenth century"? The two long windows look more like thirteenth century, unless indeed they once had some tracery in their heads which has disappeared; one cannot judge of this on the small scale of the photograph. In any case it is a remarkably fine example of a mediæval country-church tower.

The "Slade" Lecture at Oxford.

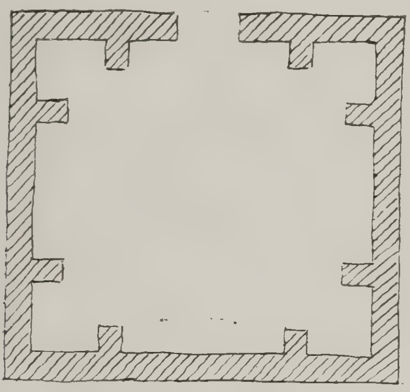
MR. SELWYN IMAGE, the newly appointed Slade Professor of Fine Art at Oxford, gave his opening lecture last week, on "Art, its meaning and its claims." He took the ground that the object of this Professorship was to teach principles rather than practice. "To the Universities harassed practitioners turned for guidance —not as to how to do their work, but for guidance in the region of ideas and principles." This may be true of philologists, literary students, men engaged in education, etc.; but we should doubt if the "harassed practitioners" of the arts ever trouble themselves about what is said at a Slade lecture at Oxford or Cambridge. The true object of the Slade lectures on art at the Universities is, or should be, to create an interest in art in the mind of the educated amateur, so that he may not pass through a University course without knowing what art means, or caring whether he knows or not. It does not follow, however, that the Slade lectures need always be confined to generalities. Judging from the newspaper reports, we should say that Mr. Image's first lecture was a little too much of mere generalising. There seems to have been the usual attempt at definition of what art is, and why it exists; definitions which may in fact be infinitely varied and which are seldom convincing. Mr. Image did well in emphasising the view that art is something worth serious attention, and not a mere toy; if he can get an Oxford audience to realise that, he will have done something. But we doubt if these generalities take hold of people's minds very much. A course of Slade lectures taking up one form of art, tracing its history, and giving examples of its finest productions, might have more effect in generating a real interest in art, although it would only deal with one small section of the subject. Definite information is of more interest and value than the most eloquent theorising; and when people have by this means obtained some real understanding of one branch of art, they will be likely to desire similar knowledge about other arts. Mr. Selwyn Image is an able stained glass artist; if he gave his audiences a brief history of stained glass, accompanied by illustrations, he would probably do more to awaken an interest in art than by the most philosophic lectures on general principles.

Unemployment Insurance and the Building Industry.

THE Yorkshire Federation of Building Trades Employers has formed the very useful habit of dealing instructively, by circular, with legislative proposals or enactments that affect the interests of builders. In pursuance of this practice, notes on the subject of unemployment insurance have been issued to members. In these notes stress is laid on the difficulties that must be encountered in applying such a measure to the building trade. In the first place there is the curious but only too common case of the man who does not desire full employment, and will never, if he can help it, put in a full week's work. "Experience of the Workmen's Compensation Act," we are told, "has revealed that a considerable number of workmen would rather receive half wages, and descend to all conceivable subterfuges to retain this payment. . . . This undesirable class are, to a large extent, at the present time, living upon the community, and it would be a great burden if they were permanently attached to and officially classified as building trade workmen." Painters, also, are semi-detached, and, their staple work being seasonal, they are forced, during the off season, to eke out a living by other pursuits. How would the scheme deal with this and other instances of casual labour? Then there are the men engaged by private persons or firms, and there are large numbers of employees engaged by municipal authorities. Concerning these it is very pertinently asked: "Will building trade employers be expected to contribute towards unemployment benefit to those workmen whose direct employment by private firms prevents employers obtaining legitimate profit on work previously done by and through them? Are local authorities employing direct labour to be immune from contributions?" Local authorities employ all sorts of men on relief works that commonly assume a building or an engineering character. Are these to be included in the calculations upon which it is suggested that the building trade should be assessed with large and permanent contributions? Other important points are raised in this most ably conceived circular, some of them necessarily hypothetical, but most of them quite practical. Among the latter, the following appears to be perfectly relevant: "During the recent depression many employers have taken work at almost cost price to keep their experienced and regular hands in employment, and the imposition of any further charge would inflict a serious and grievous burden on employers." The circular deplores the tendency of recent legislation to place heavy financial burdens on employers, and at the same time seriously to undermine the individuality ofworkmen." To be forewarned is (or should be) to be forearmed; and by taking into earnest consideration the probable effects of legislation such as that which is foreshadowed by the proposal of unemployment insurance, the secretary of the Yorkshire Federation is rendering a signal service not only to his members, but to the entire industry. In anticipation of enquiries, it may be mentioned that the leaflet in which the project is so ably criticised has been prepared by Mr. J. Davidson, West Bar Chambers, 38, Boar Lane, Leeds; but probably its circulation is restricted to members of the Yorkshire Federation, of which he is the secretary.

The British School at Athens.

THE annual meeting of the British School at Athens, which was held on October 25th at the Society of Antiquaries' rooms, Sir Cecil Smith in the chair, was attended by an exceptionally large audience. The Report gives the summary of last year's work of the School. The Director, Mr. Dawkins, had been visiting Bœotia, Thessaly, and Crete, before taking up the special work of excavation at Sparta. Work in Thessaly has been carried on by Messrs. Wace and Thompson in the neighbourhood of Larissa and Tempe, in the excavation of mounds containing remains of neolithic date. The most interesting discovery have been the remains of archaic houses; in one case those of three houses were distinguished which had been erected successively on the same site. One of these presents a peculiarity in plan which may have a certain historic interest; the plan is almost exactly a square, but has internal buttresses projecting from the walls near the angles of the building. This is something new in ancient house-planning; and it will be of interest to see whether any similar plans are discovered, and whether any definite conclusion can be drawn as to the object of these buttresses. We should be disposed to think that they took the ends of beams which carried a roof over the side portions of the house, leaving the centre space open; an early and crude form of the atrium. It is to be hoped that further investigations may throw more light on this point, which is of considerable interest in the history of the house.



The Report also mentions that Mr. Dawkins, while in Bœotia, had been shown by the Director of the Copaïs Company the interesting pre-historic drainage works of Lake Copaïs, largely brought to light by the operations of the Company. We should have liked to have some further information as to these, and also feel some curiosity as to what is the Copaïs Company, and what it is going to do with Lake Copaïs. We read in Matthew Arnold:

> "Cold bubbled the Spring of Tilphusa,
> Copaïs lay bright in the moon";

and the idea of a Copaïs Company creates rather a revulsion of feeling. Is Lake Copaïs getting utilised, or drained, or what?

The chief results from this year's excavations at Sparta have been the discovery and the drawing and photographing of a number of carved ivories of the seventh and eighth centuries B.C., representing mythological subjects and animals, etc. These, which were shown on the screen, are mostly very crude, and sometimes absurd in design, and we were disposed to agree with Lord Cromer, who thanked Mr. Dawkins afterwards for having pointed out on the screen birds and other details which he confessed he could not see. On account of their date, no doubt, these ivories are interesting, but they are certainly not beautiful, and there is rather too great a tendency on the part of Hellenic explorers to see beauty in everything that they unearth.

In the course of a short address before Mr. Dawkins's lecture, the Chairman made some remarks, with which we entirely sympathise, on the desirability of endeavouring to treat archæological subjects in a more artistic spirit, and to render them of more interest to the reading public, instead of treating them as the subjects of a mere dry statement of facts in a technical phraseology. He reminded the meeting of the manner in which a poet has expressed his interest in the sculpture "On a Grecian Urn," quoting some of Keats's lines, and contrasted it with what we should probably have read about the same urn if catalogued in, say, the Berlin Museum, by the typical scientific archæologist:—"Marble vase (Krater); much chipped. Obverse, man pursuing woman: reverse, sacrificial scene." We do not expect all archæologists to be poets, or wish them to rhapsodise; but they might at least endeavour to bring before the public the human and poetic interest inherent in fragments of ancient art, instead of presenting the world with a dry catalogue of facts expressed in a kind of professional phraseology. It is in the interest of archæology that it should appeal more to the general public, for it is on their contributions that it has largely to depend for its support; and we hope Sir Cecil Smith's picturesquely expressed protest may be remembered and have some result.

A Misleading Rumour.

A RUMOUR has been circulated in the newspapers during the past week to the effect that some concrete floors collapsed while in course of construction at Messrs. Arding and Hobbs's new premises, Clapham Junction. We have made enquiries into the matter, and have been in communication with the architects, Messrs. Gibson, Skipworth and Gordon, and we find that the report is entirely misleading, imputing defects in the concrete construction which are contrary to the facts, and giving rise to misapprehensions in the public mind as to the stability of reinforced concrete construction which it is very desirable to allay. What actually happened was this:—Certain floors had been completed, with the exception of the space in each which was occupied by one of the legs of the large gantry used in the construction of the building. Steps were being taken to finish the floors at these parts, and the concrete work had been completed, when, for some reason or other, chases were cut in the base of the gantry leg, with the result that the centering gave way and the floors collapsed at the parts where they were being completed. The concrete, however, had not been allowed time to set when this occurred, and therefore the general inference from the newspaper report is totally unwarrantable, the facts having no relation whatever to the ultimate stability of the concrete work.

Wallace v. Douglass.

ON October 28th, in the Court of Appeal, the above case was decided. The question at issue, being important to builders, was brought to appeal by the Federation as a test case, and turned upon whether a "contract as per quantities" was a lump sum contract, as decided in the court below, or a "contract where the quantities formed part." The Court of Appeal decided that "a contract as per quantities" is not a lump sum contract. Thus is set at rest (failing an appeal to the House of Lords) a question in which building contractors were very keenly interested; the decision in the court of first instance having completely surprised them. The attitude of the Federation has been misunderstood. Its sole object in intervening was the establishment of an important principle.

CHRONICLE AND COMMENT.

A Sordid Argument.

At the dinner of the Authors' Club at which Mr. Banister Fletcher presided, and at which Sir Henry Tanner was the principal guest, Mr. Wake Cook, doubtless by an undesigned coincidence, elaborated an argument which we had ventured to use when we were criticising the action of the Corporation of the City of London with respect to the projected St. Paul's Bridge. We had said, in effect, that, even putting the matter on its lowest level, the offhand brushing aside of the opinions expressed by the R.I.B.A. was bad business. Mr. Wake Cook put the same point more rhetorically, if not more strongly, when he said that "the value of beauty from the £ s. d. standpoint had dawned on the modern mind; and for the authorities of any city like London, which was attracting increasing crowds of profitable visitors, to neglect any opportunity of beautifying the city was a sin against good taste, good sense, and monetary interests." He applied these strictures not to the proposed St. Paul's Bridge, but to another structure. We are more concerned, however, with the principle than with its specific application. It would seem that our public authorities are lagging somewhat to the rearward of that dawning perception of beauty in "the modern mind" of which Mr. Wake Cook speaks so confidently; and that being so, we are constrained to join him in the endeavour to convince the public authorities by an appeal to the only argument that seems likely to arrest their attention. "Increasing crowds of profitable visitors" strikes, perhaps, a false note. It seems to put the capital of the Empire in competition with the seaside resort that seeks to thrive by advertising its "attractions." That is not the idea at all. Quite independently of the paltry consideration of "profitable visitors," it should be remembered that London ought to express something of the greatness of the Empire, and of the genius of its people. In so far as it fails to do that, it falls lamentably short not only of artistic taste, but of business acumen. This is, we admit, a base and sordid sort of argument. We apologise for it: but the case seems desperate, and one must needs answer a corporation according to its folly. Mr. Romaine Walker, who spoke upon the same occasion, took rather higher ground. "When," he said, "he passed through a doorway of a modern public building, he took off his hat—not to the architect, not to the grandeur of the building, but because he was afraid of knocking the top." In this country we did not appear to have any idea of the proportions of a doorway. "Every thing seemed to be small, while the first idea of buildings should be the glorification of the country." That dwarfed doorway may serve as a striking symbol of the low and narrow utilitarianism by which, for the moment, our public authorities are obsessed.

Lectures at University College.

On Thursday last Mr. J. A. Gotch commenced what promises to be a very interesting series of lectures at University College on the history and development of the English house. At the commencement he adopted the plan of starting from the present day house and looking backward, by intervals of a century, at the previous stages in the history of the house. In the present day the size and importance of a house is very much defined by the proportionate number of its bedrooms; a house with four or five bedrooms is a small house; one with about a dozen bedrooms is a large house; one with thirty bedrooms may be regarded as a mansion. The point of this remark was obvious when we came to trace the history of the house backward. Going back a hundred years, Mr. Gotch said, we should find the ordinary dwelling house very much what it is now, except that the bathroom had not come into existence; but we should say that there is another difference—the proportionate number of bedrooms is much the same, but they are smaller and less convenient, while the sitting-rooms are proportionately larger; the bedrooms are to a great extent sacrificed to a better show in the entertaining rooms; the old Harley Street and Gower Street houses certainly show this difference, and tenants in the present day have to transform into a bedroom what was originally meant for one of the sitting-rooms. As we go further back we come to a period when what we know as the hall has increased in size and importance, and is practically the principal sitting-room, and the bedrooms have lost their corridor of communication, and open one out of the other; and finally we arrive at a time when the hall was practically the house, and there was no separate sleeping accommodation at all. This introduction prepared the audience to appreciate the historic significance of the plans of some of the early castellated buildings when a house was practically a small private fortress, several examples of which were shown on the screen. We shall be able to give in future issues some report of these lectures; we here only call attention to the opening one, and to the fact that they are to be continued on Thursday afternoons (6 p.m.) for eight weeks, and are open free to all who are interested in the subject, on which Mr. Gotch is one of the best authorities of the day

The New Opera House for Kingsway.

The work of preparing the foundation of the Opera House to be erected by Mr. Oscar Hammerstein in Kingsway is to be begun this week, and it is hoped that the public opening of the building will take place on November 1 next year. Mr. Bertie Crewe is the architect. The site lies between Portugal Street and Sardinia Street. It is larger than the site originally in view, and measures 265 ft. by 90 ft. The proprietor is anxious that the house shall be an ornament to London. The building alone will cost, roughly, £100,000. The time to be occupied in erecting it has been limited to six months, and then, of course, the internal decorations will be taken in hand. The exterior is to have a classic stone elevation, while the interior will be in the French Renaissance style. There will be boxes, stalls, grand circle, amphitheatre, and gallery, and altogether the house will hold about 2,650 people. Room for 900 will be provided in the gallery. The new theatre will therefore be one of the largest in London. The auditorium will be 140ft. long, and 85ft. wide; the stage 90ft. wide, and 60ft. deep. The dressing-rooms will be luxuriously furnished, and each will be fitted with hot and cold water, with bathrooms behind. The contract for the structural work has been let to the Building Construction Company, an Anglo-American firm.

The Radium Institute.

(*See Centre Plate.*)

This building, which is the outcome of Sir Ernest Cassel's and Lord Iveagh's munificence, occupies the site of the old schools adjoining All Souls' Church, Langham Place, with frontages to Riding House Street and All Souls' Place. Accommodation is provided both for necessitous patients and for the well-to-do, with separate entrances for each. The ground floor comprises two waiting-rooms, four consulting-rooms, and superintendent's rooms, etc. The first floor is wholly devoted to the twelve rooms for the treatment of patients. On the second floor are the board-room, directors' room, stenographer's room, large laboratory, pathological laboratory, photography and dark room. On the third floor are the day rooms for male and female nurses, mechanics' workshop, and a residence for the caretaker. On the fourth floor are the quarters for the resident medical officer. In the basement are further workshops, store and balance room, patients' lavatories, linen store, and strong rooms, etc. An electric lift serves all floors throughout. The frontage to Riding House Street, and return end facing All Souls' Church, are of Portland stone. The sculptured panels and frieze have been executed by Messrs. Martyn and Co. The roofs are covered with

Westmorland green slates. The elevation to All Souls' Place is of white and soft glazed bricks. The floors, staircases, and joinery generally, are of teak on steel and concrete. The general contractors are Messrs. Fryer and Co., of Paddington. The steel and fireproofing were executed by Messrs. A. D. Dawnay and Sons, Ltd.; the heating by Messrs. Rosser and Russell, Ltd.; the sanitary fittings by Messrs. Doulton and Co., Ltd.; the carving by Messrs. H. H. Martyn and Co.; the lift by the Otis Elevator Co.; and the electric lighting by Messrs. Duncan Watson and Co. The entire works have been carried out to the designs and under the supervision of Mr. T. Phillips Figgis, F.R.I.B.A., architect.

Chancel Alterations, St. James-the-Less, Plymouth.

(See Centre Plate.)

The illustration shows, by comparison with that of the chancel as it used to be, what has been done. The organ has been placed in a loft instead of occupying space very sorely needed for vestry accommodation. The turret stair giving access to the organ already existed, the organ having originally occupied the lofts, but being for some unaccountable reason lowered to the church floor level some years ago, the organist sitting in the midst of the choir, but yet with his back towards the singers. The new organ gallery overlooking the chancel gives space now also for other musicians besides the organist. The varnished deal open-timbered roof, which was felt to be distracting, now supports, pendant-wise, an oaken barrel vault, with emblematical carved bosses at intersection of the ribs, etc. A new oak reredos, canopy, and wall panelling, and coved servers' recess cut into the north wall (originally covered with shiny tiling), all form a part of the scheme. The dwarf chancel screen and pulpits are of alabaster; the steps to the chancel and to these pulpits being of marble—the former black, the latter white. The gates are of wrought iron, painted and gilded. The chancel walls, originally pink, have been painted a shade of green with a diaper pattern of another shade of green. The oak organ screen and roof vault, etc., have been painted and gilded in parts. The hanging rood is in plain oak. The drawing was hung in this year's Royal Academy. The architect is Mr. T. Rogers Kitsell, A.R.I.B.A., 1, George Street, Plymouth.

A St. Paul's Bridge Scheme.

Commenting upon the Corporation scheme for the new St. Paul's Bridge, Mr. A. W. Cross, M.A., V.-P.R.I.B.A., and Mr. Geo. Hubbard, F.S.A., F.R.I.B.A., strongly protest (in the "Observer") against the City Corporation's proposal, for, among others, the following reasons:—(1) It provides no vista, central or otherwise, of St. Paul's Cathedral. (2) The northern approach of the new thoroughfare, at the east end of St. Paul's Churchyard, will still further distort the present shapeless mass of open space and building constituting the precincts of the Cathedral. Doubtless some day an attempt will be made to invest the immediate surroundings of the Cathedral with architectural dignity, and this should be borne in mind in designing the new thoroughfare, which ought to be planned to give a central south approach to a symmetrically laid out St. Paul's Churchyard. (3) Even if the bridge, as designed, were properly placed with respect to the Cathedral, it is far too narrow to give the vista that is required, and Mr. John Burns was absolutely right in saying that the new thoroughfare should be "three times the width of Waterloo Bridge," which is about 42ft. wide. Although, they say, it is now too late to transform London into a stately and monumental city, yet much may be done to improve the aspect of the narrow, tortuous streets which traverse the City in all directions. And whenever the opportunity presents itself for the creation of a new centre of traffic, care should be taken to bring the street surroundings of its immediate neighbourhood into architectural harmony and co-ordination. For instance, as to St. Paul's Cathedral and its connection with the new bridge, in their view it is useless, æsthetically, to construct a fine thoroughfare debouching upon the southern façade of Wren's masterpiece unless the Churchyard itself is re-planned with some regard to symmetry and other architectural requirements. The additional improvement need form no part of the present scheme, although it is necessary to decide upon some plan for the ultimate remodelling of the Churchyard before the new thoroughfare is proceeded with. And, whatever plan is adopted, it should be rigidly adhered to when the time is ripe for its execution. They hold that if St. Paul's Churchyard is to become a centre of civic traffic, then the scheme should surely be carried to its logical conclusion by remodelling the precincts of the Cathedral to bring them into architectural form and harmony with the new thoroughfare. To render the scheme complete, some alterations on the Southwark side of the river are desirable. The commencement of the southern approach might be emphasised, they suggest, by the formation of a large place, or circus, the centre of which would form a suitable site, inasmuch as it is in the heart of the district in which our national poet lived and worked, for the Shakespeare Memorial Theatre. And it is essential that an improvement should be effected in the present condition of the south bank of the Thames. The roads abutting upon this side of the river are so narrow and congested that the delivery of goods to manufacturers and warehousemen is often a work of considerable difficulty. But there is another and more urgent reason for dealing with this bank of the river, inasmuch as during the spring tides the Thames rises some three feet above the level of the adjoining roadways, and the water is only kept back by a dwarf wall. We (Messrs. Cross and Hubbard) have seen the river lapping the top of this wall and noticed that the ground floors of the adjoining houses are often flooded when the water has forced its way through the protecting wooden structures which are erected whenever spring tides are expected. What is wanted, is an embankment, stately in form and effectual in keeping out the river, which shall be a prominent feature in the vista to be obtained from St. Paul's Churchyard, and there is no doubt that the foreshore on the south side of the Thames is sufficiently extensive to permit of its construction.

"The One Great Idea."

Without direct reference to these proposals, and possibly in complete ignorance of them, a writer in the "City Press" comments upon the general question to the effect that "the architects are talking a good deal of nonsense in reference to St. Paul's Bridge. From the attitude they have taken up it might easily be assumed that the Corporation is about to throw a kind of second-rate railway bridge across the river, and that artistic considerations are being passed by as altogether unworthy of note in comparison with the one great idea of reducing the cost in every possible way. A more ridiculous notion than this it would be difficult to imagine. Yet it has found expression in almost as many words during the past few days." Our contemporary seems to be practising the exaggeration that he deprecates. It is not necessary to postulate "a kind of second-rate railway bridge," an entire indifference to artistic considerations, and an extreme parsimony; and, so far as we are aware, these charges have not been specifically levelled against the corporation, even as a rhetorical device. The broad fact is that, nevertheless, the Corporation has not risen to an adequate conception of its opportunity and its responsibility on this question, and is somewhat obstinately setting its face against the good advice that has been tendered in all sincerity by those best qualified to give it. Disdaining to discuss the broad principle of building worthily for the metropolis of the Empire, it has concentrated its attention on a paltry squabble with the London County Council, and is bent rather on self-assertion than on the conception and realisation of magnanimous ideals. In other words, it is behaving parochially instead of imperially, and that is the gravamen of the charge against it. It may be building well and spending freely, and yet fall very far short of the requirements of the situation.

SOME RECENT WEST END BUILDINGS.

THE West End of London imposes on the builder a peculiar obligation of dignity and conformity. In that quarter a new building, it may be said, is liable to be "tried by its peers"—that is, by an inevitable comparison with them. The architect entrusted with new work for this quarter, therefore, seldom fails to realise that he is constrained to work within rather strict limitations as to style and treatment. His work is necessarily subdued to an environment uncommonly potent in influence.

Not that there is a single distinctively West End style. The district, as becomes so vast and vaguely defined an area, comprehends many styles that are more or less characteristic of it in a large and general way; and while few might perhaps consider that the Norwich Union premises, or the Piccadilly Arcade, would be altogether out of keeping in South Kensington, more would agree that the Post Office at the junction of Imperial Institute and Exhibition Roads would not seem at home in Piccadilly. It is the merit of all the buildings shown that each is in sympathy with its immediate environment.

Norwich Union Building, Piccadilly.

This building is situated at the eastern corner of St. James's Street and Piccadilly, and has been erected for the Norwich Union Life Assurance Society from designs by Messrs. Ernest Runtz and Ford, FF.R.I.B.A., architects, of London. The upper part of the building consists of suites of offices, entered directly from St. James's Street; and the fact that almost all the rooms are at present occupied (taking into account the numerous adjacent buildings of longer standing which still remain tenantless so far as offices are concerned)—testifies in no small measure, and in the most practical manner, to the excellence of the planning and arrangement, and the suitability of the offices in question.

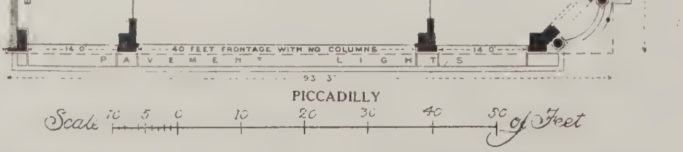
The extreme western section of the ground floor, and the return frontage to St. James's Street, have been admirably designed and fitted up for banking premises. The architects have here provided a special feature by the introduction of bronze metal fronts to this portion of the building. The Piccadilly frontage is divided into four shops. That at the extreme eastern end has been occupied for some time by the Evian Cachat Co. Their shop front has been designed with a view to retaining the character of the design employed in the company's shop fronts at other branches.

The central and western shop fronts in Piccadilly have just been completed, the latter being occupied by Messrs. André and Co., hatters, who have transferred their business from Bond Street.

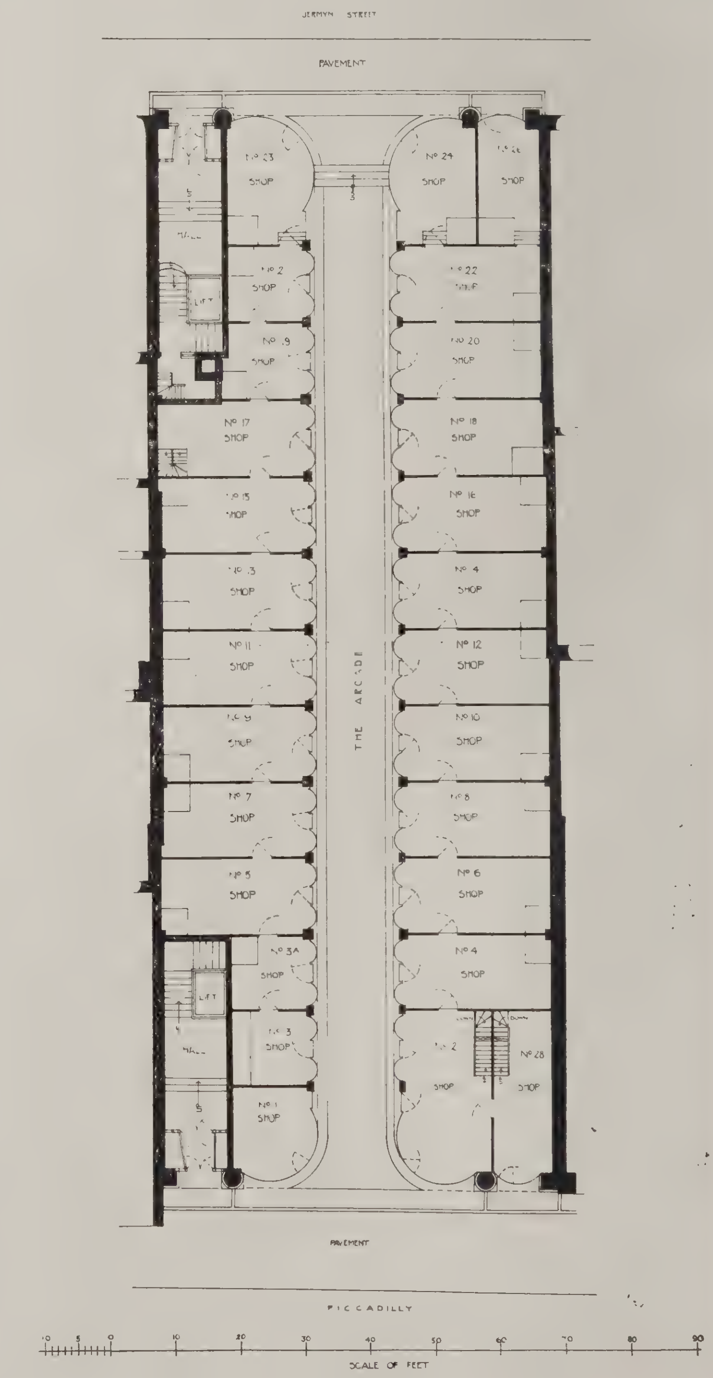
The principle of the design for the exterior is a series of columns on a plain base surmounted by a storey of oval windows, immediately on the top of which is a recessed storey with large consoles, giving an appearance of support to the two storeys in the roof. The upper portion has been carried out in white Pentelikon marble, obtained from the ancient quarries of Marmor, Ltd., at Athens; from which quarries the marble for the erection of the Parthenon was obtained 437 B.C.

The lower façades are executed in serpentine jasper, obtained from the quarries of the Jasper Company, a few miles from Pwllheli, North Wales. We believe this building to be the first in London so treated; but, in view of the opportunities its use affords for the introduction of some permanent and lasting colour treatment, it will no doubt be in evidence in many of our future buildings, thereby imparting a little colour and warmth to the rather drab and depressing appearance of some of our London streets. The building forms (with that on the opposite corner) the "gateway" of the thoroughfare leading directly to Marlborough House and St. James's Palace by the historical street of St. James.

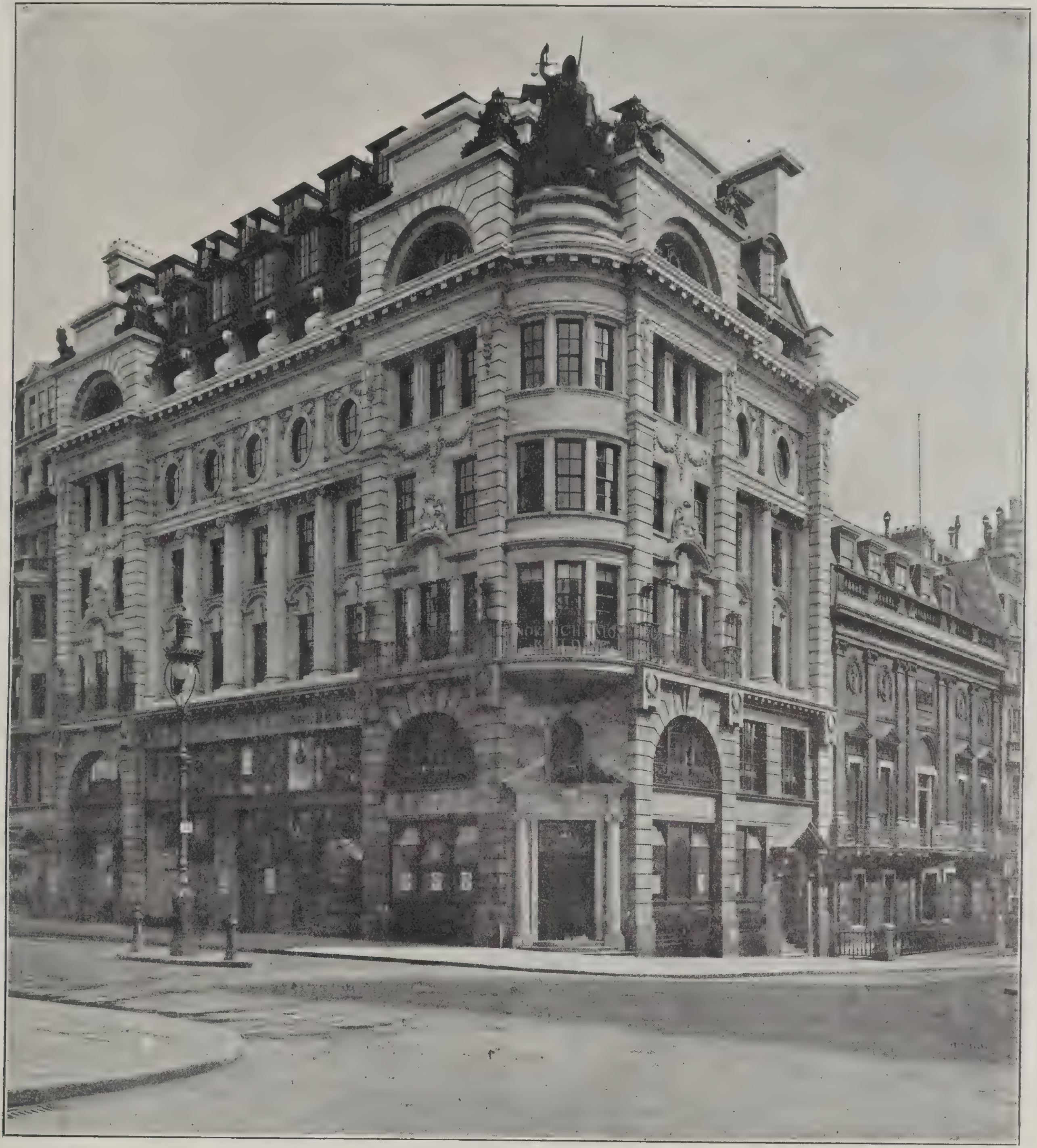
Immediately over the angle of the building, the architect has designed a somewhat novel treatment, and introduced a clever group of bronze statuary designed by Mr. Herbert



GROUND-FLOOR PLAN OF NEW PREMISES OF THE NORWICH UNION LIFE ASSURANCE SOCIETY.



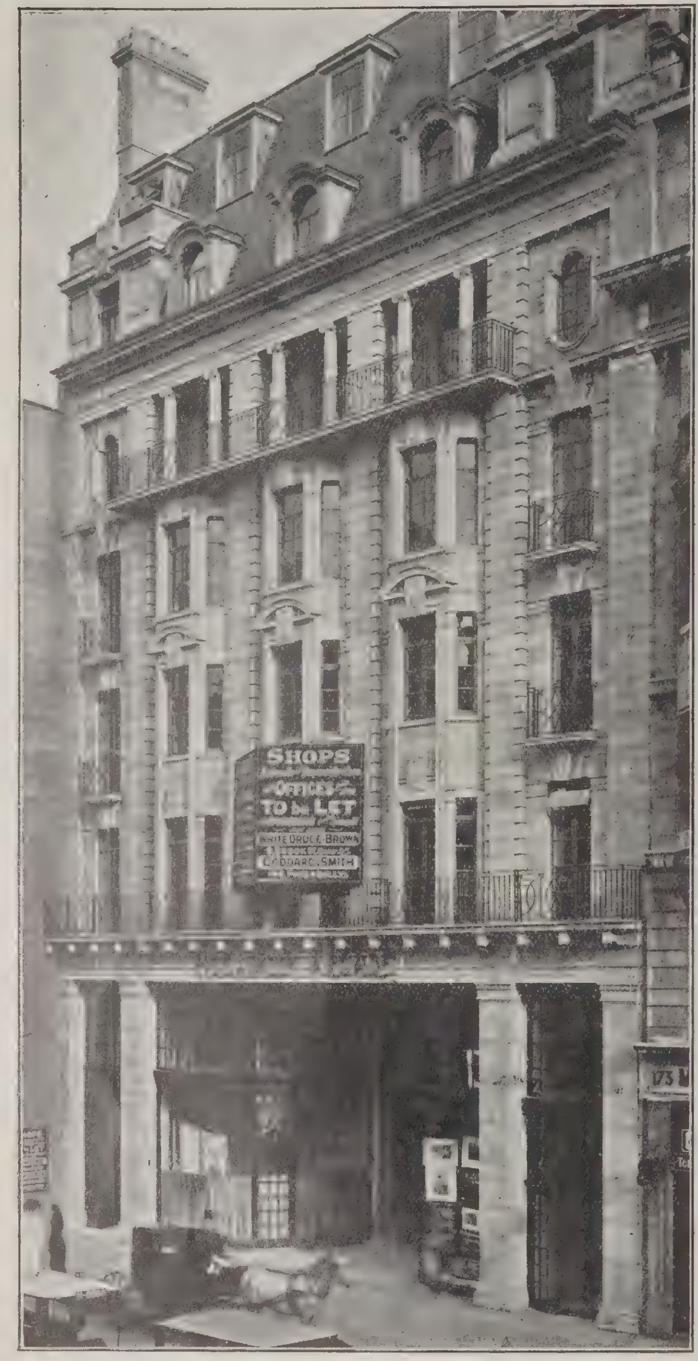
PLAN OF THE PICCADILLY ARCADE.



NEW PREMISES OF THE NORWICH UNION LIFE ASSURANCE SOCIETY, PICCADILLY AND ST. JAMES'S STREET, LONDON. ERNEST RUNTZ AND FORD, FF.R.I.B.A., ARCHITECTS.

Binney (a former pupil of Sir George Frampton, R.A.). The figures represent "Justice," "Forethought," and "Thrift." The decoration of the vestibule in St. James's Street is carried out in marble, the floor being executed in squares of jasper and white Pentelikon, while the walls are panelled in green Cipollino with bronze panel mouldings. The staircase is in oak, with linings and panelling of a very effective design.

The principal contractors were as follows:—General contractors, Patman and Fotheringham, Ltd., Park Street, Islington, N.; steelwork, Matthew T. Shaw and Co., Ltd., Millwall, E.; fireproof floors, etc., D. G. Somerville and Co., 116, Victoria Street, S.W.; heating, hot water, and hydrants, Strode and Co., 48, Osnaburgh Street, Regent's Park; electric lighting, Roger Dawson and Co., 62, Berners Street, W.; electric passenger lift, Smith, Major and Stevens, Ltd., Queen's Road, Battersea; sanitary fittings, Matthew Hall and Co., 88, Wigmore Street, W.; architectural ironwork, lift enclosure, metal ornament and decoration in entrance hall, balconies, grilles and lettering, Jones and Willis, Eagle Works, Hornsey, N.; architectural ironwork, name easels in entrance hall, and grille over St. James's Street entrance, Bainbridge Reynolds and Co., 7b, Old Town, Clapham, S.W.; wood-block flooring, Zeta Wood Flooring Co., Ltd., Stratford, E.; wall tiling, Geo. Kent and Co., Holborn, W.C.; carving, Gilbert Seale, 22, George Street, Camberwell; pavement lights and fire-resisting glazing, Hayward Bros. and Eckstein, Borough, S.E.; shop fronts, Spreakley and Co., Phœnix Place, Gray's Inn Road, W.C.; ditto (Evian Cachat), Stanley Jones and Co., Gray's Inn Road; bronze guttering, etc., Swanser and Son, Gt. Queen Street, W.C.; lead shields, Singer and Sons, Ltd., Frome, Somerset; bronze statuary, Elkington and Co., Ltd., 22, Regent Street, W.; joinery and office fittings (Society's offices, first floor), Goodalls, Manchester; electric light fittings (Society's offices, 1st floor, staircases and corridors), J. J. Smith and Co.; ironmongery, Nettlefold and Sons, Ltd., 54, High Holborn, W.C.



THE PICCADILLY ARCADE. G. THRALE JELL, A.R.I.B.A., ARCHITECT.

The Piccadilly Arcade.

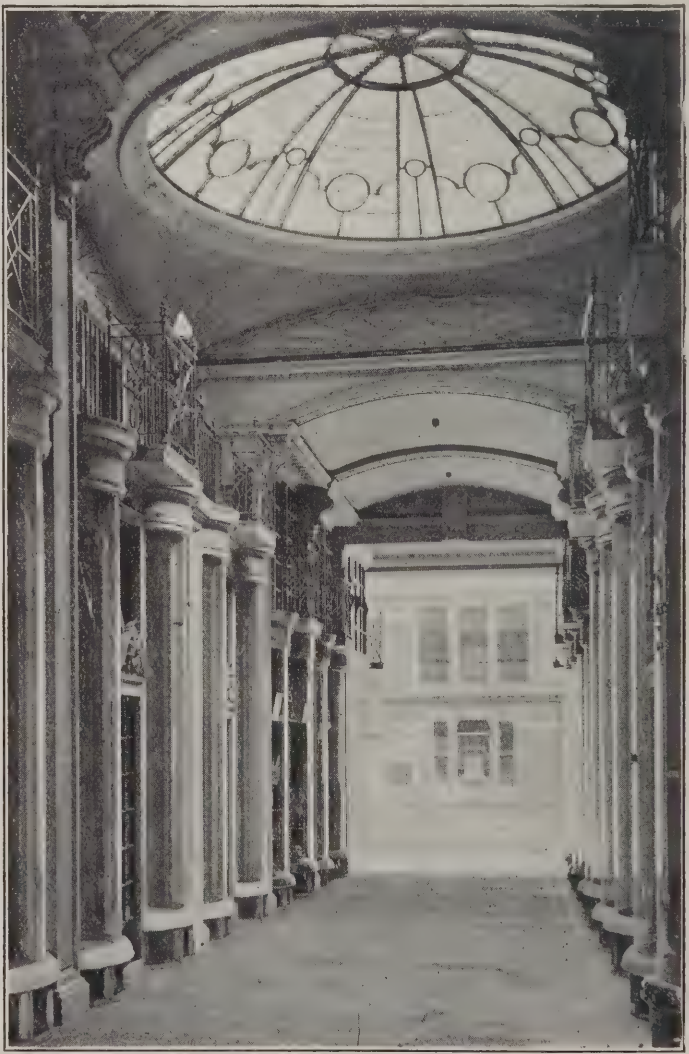
The chief feature of the building erected on the site of Nos. 174, 175, and 176, Piccadilly, and Nos. 52 and 53, Jermyn Street (Brunswick Hotel), is the arcade with shops on either side, in addition to those facing Piccadilly and Jermyn Street. Each shop is provided, in addition to the ground floor, with entresol, basement, and lavatory accommodation. There are separate entrances to the upper part on the ground floor both in Piccadilly and Jermyn Street. The upper part of the building next Piccadilly, and also the centre block, have been arranged for offices, with the necessary lavatory accommodation. The upper part, next Jermyn Street, has been planned as bachelors' suites of chambers.

The elevations to Piccadilly and Jermyn Street have been designed in the present Renaissance style, and built in Portland stone, with green slates to the roof. The balconies are in wrought iron. The pavement to the arcade is finished in green and white marbles, and the whole of the shops, pilasters, and ceilings are finished in white with enrichments picked out in gold. The arcade is lighted, in addition to the openings at each end, by two wrought-iron domes. The whole of the building was designed and the work carried out under the superintendence of Mr. G. Thrale Jell, A.R.I.B.A., of Carlton House, Regent Street, S.W. The contractors were Messrs. Leslie and Co., Ltd., of Kensington, who erected the arcade portion ready for occupation within eight months, and finished the building entirely within eleven months from date of commencement. Among the other contractors were: Constructional ironwork, Powers and Deane, Ransomes, Ltd.; marble work, Garston, Ltd.; electrical engineers, Donnison, Sillem, and Co.; heating and warming heating engineers, Z. D. Berry and Sons; artesian well, Isler and Co.; wrought-ironwork, W. Shrivell, and Cadogan Ironworks; electric lifts, Penrose and Co.

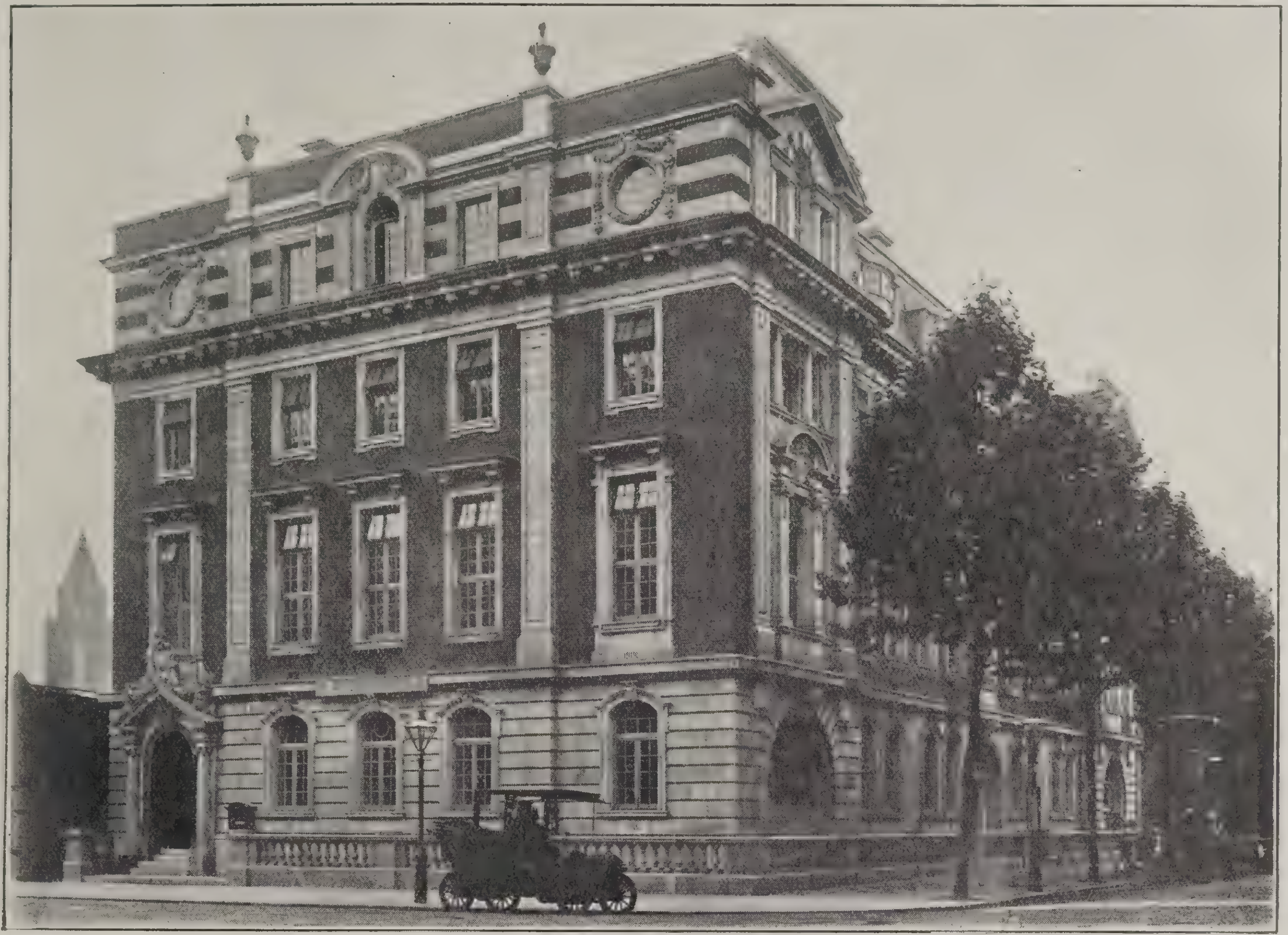
New Branch Post Office and Meteorological Office, South Kensington.

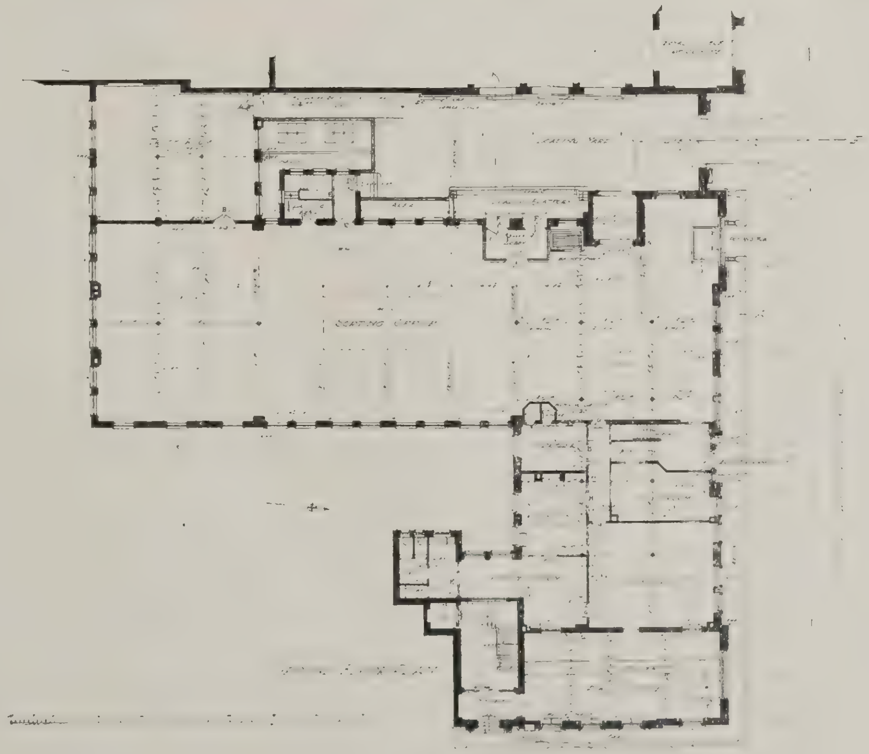
This building is situated at the junction of Imperial Institute and Exhibition Roads. The larger portion of basement with the whole of the ground floor, will be occupied by the post office, and the first and second floors by the Meteorological Office. Storage in basement and a laboratory on the third floor are also provided for the latter. The remaining space on the third floor will be occupied by another department.

The public entrance is in Exhibition Road, and there is an entrance for the Post Office staff, and a gateway to the loading yard in Imperial Institute Road. The P.O. Public Office is treated with a plain "Mazzano" marble dado and counter front, with plaster above. The architraves and ceiling mouldings are enriched, and the doors are of wainscot. The parcels office, retiring rooms, etc., are placed in the basement,



THE PICCADILLY ARCADE: INTERIOR VIEW.





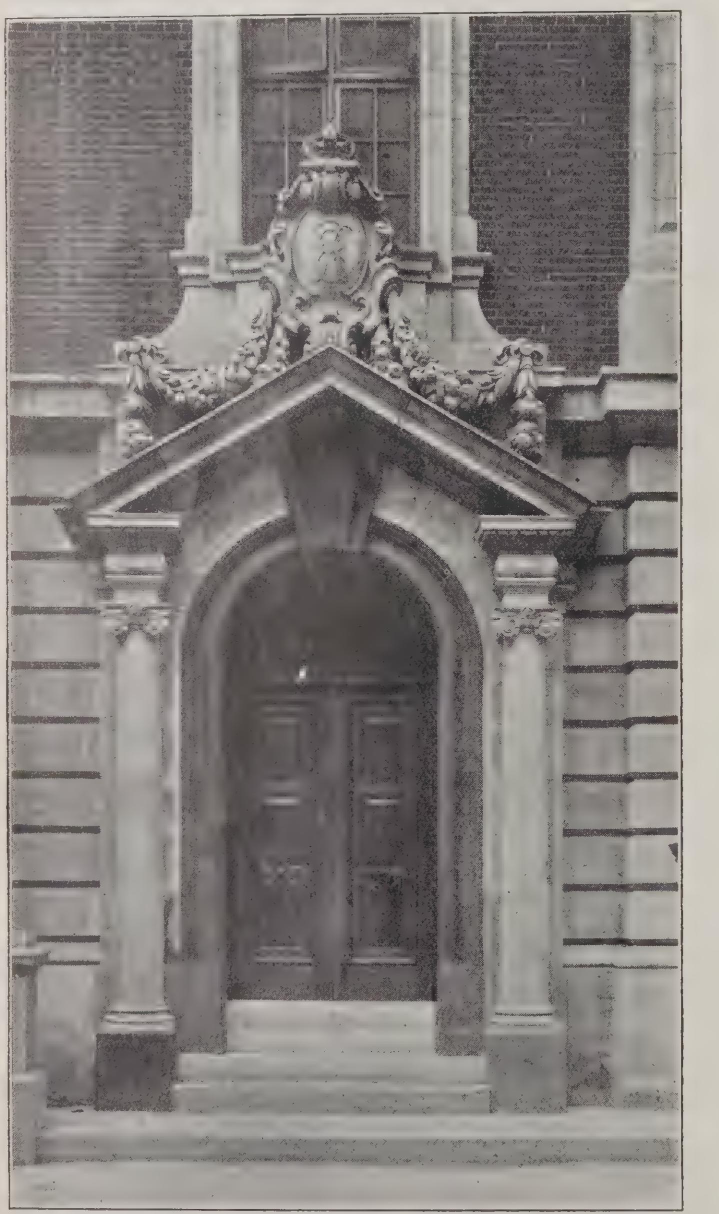
NEW POST-OFFICE AND METEOROLOGICAL OFFICE, EXHIBITION ROAD AND IMPERIAL INSTITUTE ROAD, SOUTH KENSINGTON, LONDON. (H.M. OFFICE OF WORKS.)

and are (together with the sorting office, loading yard, etc., on the ground floor) lined with ivory white glazed brick with brown dado.

The Meteorological Office hall, ante-room, and library, to which the public will have access, are arranged on the first floor. Bookcases, doors, and flooring are of wainscot, and the ceilings have plaster enrichments. Upper tiers of bookcases with galleries are provided in the library. The directors' room is also placed on this floor, and rooms on the second floor are provided for the forecast and other departments.

Stagings and instruments will be placed on the flat asphalted roof for the purpose of taking observations, etc. The building is of fire-resisting construction, and the fronts are faced with Portland stone and thin red Fareham bricks. The foundations and basement contract was carried out by Leslie and Co., and Messrs. F. and H. F. Higgs are the contractors for the superstructure. The stone and wood carving has been executed by Messrs. H. H. Martyn and Co., and plaster enrichments were modelled by the Bromsgrove Guild. The total cost will be about £35,000.

With respect to each and all of the new buildings above described, it may be said that they are representative of the modern spirit of building—if not in the "grand manner," yet on a scale and with a development of character that marks the abandonment of the meaner tradition of the 19th century.



ENTRANCE TO NEW POST OFFICE, EXHIBITION ROAD, SOUTH KENSINGTON.

THE CHRISTCHURCH PRIORY REREDOS.

Christchurch, Hampshire, with its general air of ancientry, is, as a town, one of the most interesting of our south-coast survivals of Norman days; and of course its great glory is its venerable Priory. Mr. Herbert Druitt complains, in a letter to a contemporary, that the fourteenth-century reredos in the Priory chancel is threatened with "restoration." Its date, he says, is about 1350. It is, as he claims, a splendid example of Decorated Gothic of the reign of Edward III., and its subject is the Stem of Jesse. The reredos is in three tiers. In the middle compartment of the lowermost, Jesse reclines, leaning on his right elbow. In the compartments left and right of him are, respectively, David and Solomon. Above him, in the middle panel of the second tier, is a group representing the Adoration of the Magi, with the figures shown in fourteenth-century costume. The middle compartment of the third tier is empty, as are eight smaller niches. In the shafts which separate the larger compartments are thirty-two small figures, "all of great interest." Only traces of colour remain to suggest its former splendour; but nevertheless it is, on the whole, excellently preserved. The chancel being of the fifteenth century, how the fourteenth-century reredos came to it is rather a mystery. But Mr. Druitt is concerned about what is proposed to be done to prevent the alleged decay of the work. Mr. T. G. Jackson has reported that, the cresting of the reredos being in danger of falling, he made a careful examination of the whole structure, several other parts of which were found to show signs of failure. In particular the middle part seemed to have bulged seriously forward. Mr. Jackson was relieved to find, however, that the bulging of the great mullion shafts was caused, not by any general settlement, but by the rusting of iron cramps by which they were tied in, and which by expansion have burst the stone away. Mr. Jackson thinks that it will be necessary to cut these out, and renew a few small pieces of stone. A similar rupture is observed in the angel over St. Joseph's head. Part of this has been repaired in plaster. This can be repaired, and the old stone reset. Other cracks, probably due to the same cause, can be remedied in the same manner. The whole of the top crest being loose, and in danger of falling, should, Mr. Jackson thinks, be reset and secured by copper cramps, which should in all cases be substituted for iron where cramps are necessary. These proposals would seem to be innocuous enough, but Mr. Druitt strongly objects to them. He thinks that there is no more need of restoration to-day than there has been for the past fifteen years, "or probably for centuries," and he suggests that the Society of Antiquaries, the Society for the Protection of Ancient Buildings, and the parishioners, ought to be taken into consultation. This contention does not appear to us to be entirely reasonable. Surely the opinion of a competent architect, based on close and careful examination of the work, should be received with greater respect. The objection to the very mild, and, as it seems to us, very necessary measures of preservation, suggests the inference that the archæological enthusiast actually prefers decay to soundness. Even cracks and bulges, it would appear, are venerable by virtue of their inveteracy! "It is impossible," Mr. Druitt says, "to estimate the loss to art and to archæology if the reredos is tampered with." Quite impossible to estimate, we are very willing to agree, if the loss is confined to the cracks and bulges; and we must confess that we are growing impatient of the persistency with which, in season and out of season, archæologists seize every occasion of denouncing measures of preservation for which, upon an unprejudiced view, one might reasonably assume that they ought rather to express gratitude than repugnance. In the present case, our sympathy is emphatically with the architect, who appears to be adopting the only sensible course in taking very necessary steps to preserve the work from impending ruin.

THE AUTHORS AND THE ARCHITECTS.

A a recent dinner of the Authors' Club, at Whitehall Court, many architects were present. Mr. Banister Fletcher, F.R.I.B.A., was in the chair, and the chief guest was Sir Henry Tanner, Principal Architect to his Majesty's Office of Works.

Sir Henry Tanner's Career.

Proposing the health of the Club guest, the Chairman observed that Sir Henry Tanner had had a very distinguished career. Born in 1849, he was, with Anthony Salvin, the designer and restorer of many mansions. In 1871 he entered the Office of Works by open competition, and in 1882 he was appointed architect, having charge of post-offices generally and other buildings in the country. In 1894 he was elected a Fellow of the Royal Institute of British Architects, and in 1898 he was appointed Principal Architect of His Majesty's Office of Works. Since that time he had executed and been responsible for many important buildings. At Bradford, Birmingham, Leeds, Liverpool, Cardiff, and Swansea he had erected the principal post-offices. He had designed several district post-offices, the Savings Banks at Carter Lane and West Kensington, the Duke of York's School, Dover, the extension of the Royal Courts of Justice, and the Recruiting Department in Scotland Yard.

The Design of Public Buildings.

Sir Henry Tanner, in an address (reported in the "Morning Post" of October 25) on "The Design of Public Buildings," with special reference to the new General Post Office, called King Edward's Building, said that his connection with the Office of Works had been coincident with the extraordinary expansion of the Post Office beginning with the taking over of the Telegraphs in 1870, the introduction of the Parcel Post in 1882, and of the Telephones partially within recent years, to say nothing of the various increased facilities offered by the Post Office and of the growth of population. Consequently, buildings were now required giving much more extensive accommodation than was formerly the case. As an instance of this growth, he might point to the General Post Office East in St. Martin's-le-Grand. That building was erected in 1829, and, he believed, at the time accommodated the postal service of London, the Secretary even having a residence there, while the centre part was an open hall. In 1870 the Clerical Department took up quarters in the General Post Office West, then or soon after completed, and this instead of being utilised for some of the intended purposes was adapted for the Telegraphs then recently acquired from the various companies. The Parcel Post, after being accommodated for some years in the basement of the old building, had to be removed. The prisons had shortly before been transferred to the Government, and the House of Correction at Clerkenwell was annexed, the area being about 10 acres. The tread-mill house was first converted, but a new parcel office was subsequently built in two sections, and towards the end of the last century a large sorting office was erected, to which was removed all the inland sorting, and the staff at the buildings had increased from 5,000 in 1900 to 8,300 to-day. Further, to accommodate the secretariat, the General Post Office North was constructed and occupied about 1896, and the cry was for further space still.

Points in Planning.

In preparing plans of new public buildings the chief points to be borne in mind were adaptation of the internal arrangements for the special purposes for which the buildings were required. The scheme should be simple, for that quality generally produced the most satisfactory and workable plan, while there should be no want of light in any part. Deficiency of light led not only to want of cleanliness but to inefficiency and expense. In towns it might be difficult to obtain thoroughly adequate light, but with thought and care much might be effected in that direction, while glazed bricks and prismatic lights helped to improve matters. Where any considerable number of persons were employed the halls and corridors should be spacious, and the latter straight and direct. There should be ample staircase accommodation, although with the extended use of lifts that might be less than formerly. The construction should be fire-resisting as far as possible, and the wall and floor surfaces should be capable of being easily and readily cleaned, paint and tiles being employed for the former and by preference wood blocks and mosaic of various forms, or tiles for the floors. The entrances and exits should be ample, and those parts visited by the public, such as the public office of a post-office, should be reasonably spacious and should afford comfortable accommodation. Sanitation must, of course, be perfect and up to date. Engineering works complicated the arrangement of buildings. The position of lifts had to be studied, heating pipes conveniently disposed, while the wiring for lighting, bells, and house telephones must not be forgotten, if internal appearance was to be at all satisfactory to the architect. Engineers were rather of opinion that buildings were erected for a display of their ingenuity, while the architect took another view, and did his best to hide the greater part of those contrivances, but unfortunately for him the schemes were nearly all devised too late.

Site, Materials, and Style.

Sites, of course, varied—he spoke of those in towns chiefly—in shape and levels, and called for all the skill that could be developed in arranging buildings upon them and utilising the varying levels to the best advantage. The materials employed had a considerable influence on the design of a building. From ordinary brick advance had been made to steel structures, and now reinforced concrete was coming into use. The extended use of that form of construction would depend entirely on the reasonableness of local regulations. It was, however, necessary when considering the planning of a structure to consider also the external elevations; the two were inseparable, and it was there that the artistic qualities of the architect found an opening. Mere science, which was more or less concerned with the plan, did not altogether afford a satisfactory guide to a pleasing and artistic exterior. The qualities required were restraint and repose, while breadth and proportion were essential. Useless ornament should be avoided, dignity should be aimed at, together with a satisfactory massing of the parts and the detail should give scale to the building. The external design should, as far as possible, indicate the internal arrangements and purpose.

With regard to style, his preference had always been for some form of classical architecture, such as French Renaissance, but fashion in architecture, as in other things, had changed, and English Renaissance was now the style largely followed as a basis. Nothing could be more suitable for the type of buildings under consideration. The new Public Offices in Parliament Street, designed by the late Mr. Bryden, were, he considered, an excellent example, the erection of which, owing to his death, devolved upon him. Prospect could very rarely be considered, but Mr. Burnet had, with the aid of the Duke of Bedford, been fortunate in having a new street formed opposite the centre of his additions to the British Museum in Montague Place with a semicircular place in front. That new building while following the style of the existing buildings was a great advance in artistic conception, and was in his opinion a scholarly design. Sir Aston Webb's buildings for the Admiralty had the advantage of being placed at the end of a processional road, and were designed by him to terminate that vista, and also from the Strand, the centre lines of which were not continuous. At the same time the new buildings acted as a screen to hide the various structures to the eastward. It was to be hoped that the vista is that direction might be opened up, and a satisfactory approach formed from Charing Cross. He had referred to the public offices in Parliament Street, and it was with considerable satisfaction that he found himself placed in charge of that great building, and he felt that Mr. Bryden's ideas had been conscientiously carried out. Arrangements were now being made to extend that building westward to St. James's Park.

New General Post Office.

Referring to the new General Post Office, Sir Henry said that the foundation-stone was laid by the late King Edward VII. in 1905, and from that event and the fact that the street into which the main front faces was called King Edward Street after King Edward VI., he believed the building has been named King Edward's Building. The works were not, however, commenced for some time, but early in 1906 it was decided to construct the buildings of reinforced concrete. He was induced to recommend that course from having seen buildings erected for railway and dock companies. He anticipated a saving of some £60,000 out of £355,000, and believed that that had been achieved. It was our largest post-office, and it afforded him pleasure to think that he was able to adopt that new system of building on so large a scale. It had been very extensively adopted abroad and in America. The advisability of using reinforced concrete met with a good deal of doubt and misgiving, but he could not say that he had any feelings of that kind. The result had in his opinion amply justified that attitude, and the whole work had been carried through in a thoroughly satisfactory manner. This system of building enabled floors and walls of a minimum thickness to be constructed. For instance, the retaining wall around the site some 27ft. in height was from 7in. to 8in. thick, only strengthened by beams and strutted from the main buildings, in fact it was a floor stood upright. The outer walls were 7in. thick and the floor slabs 3½in. It would be obvious that a very large amount of floor space was gained in comparison with what would otherwise have been possible. When he mentioned that the floor space of the buildings exceeded 10 acres some idea of the size could be formed. The construction appeared to be exceedingly light, although abundantly strong, the supports, being placed from 35ft. to 45ft. apart, affording the least possible impediment to the work and arrangement of fittings. The main beams are arched. Proceeding, Sir Henry said that there were two blocks, one of seven storeys, next King Edward Street, containing the Public Office and the Controller's offices, and the main block, of six storeys, which would be occupied for sorting purposes, for postmen, and for foreign work, the two former being placed on the ground floor, and the latter on the first floor. The second floor was square, and the top floor would be used for refreshment rooms, with kitchen and requisite offices. Retiring rooms for the different grades were also provided. The sub-ground floor and part of the basement would be used for stores. The sorting rakes, if placed end to end, would extend a distance of more than two miles. The dimensions of the ground floor sorting-room were 300ft. by 185ft. The two lower floors, which extended under the whole building, measured 446ft. east and west and 210ft. north to south. By a system of corbelling the east platform was free from obstruction by columns, a matter of some importance. There was a covered bridge, also of concrete, connecting the two buildings, while two subways connected the new with the older buildings on the eastern side of King Edward Street. The public office was the largest in this country, the dimensions being 152ft. long and 53ft. wide, with a counter running the whole length. This room, with the entrances thereto, had been dealt with somewhat liberally, and was lined with Irish green marble for the dado, pilaster panels and door architraves, an Italian marble, Arni Alto, being used for the remainder. The pilasters and piers had bases and capitals of bronze, the key blocks to the arches being of the same metal. Brown was also used for the counter edges and screen, table edges, the sashes, and the electroliers. The counter front was also of green Irish marble, with bronze consoles and ornaments. The floor was of mosaic. The fittings were of wainscot. The exteriors towards the streets were of Portland stone with granite plinths, the concrete work being finished in cement. Much of the western end was temporary in view of future extension. Generally the building was warmed by hot water radiators. There were thirteen lifts, a system of conveyors for carrying letters from the posting boxes, etc., to different points, and house telephones. It might be of interest to mention that part of old London Wall was found upon the site in continuation of that which was discovered to the north of the General Post Office North, and which he was enabled for the most part to preserve when that building was erected. In order, however, to form the lower floors of the new building the greater part of the wall on the site had to be removed, but the bastion at the western return of the wall had been cleared, and would be preserved for some time to come, a concrete enclosing wall and roof having been constructed, and an access formed so that persons interested could inspect it.

"Beauty from the £ s. d. Standpoint."

Mr. Wake Cook, as an artist, deplored the sacrifice of use and convenience to mere picturesqueness, as in our Law Courts. But the value of beauty from the £ s. d. standpoint had dawned on the modern mind; and for the authorities of any city like London, which was attracting increasing crowds of profitable visitors, to neglect any opportunity of beautifying the city was a sin against good taste, good sense, and against monetary interests. Mr. Cook severely criticised the design of the London County Hall, and praised the modern American skyscrapers as "the grandest things in the world." The Singer building was beautiful, and, when rightly viewed, as impressive as an Alpine height.

CORRESPONDENCE.

[The Editor declines responsibility for the statements made or opinions expressed by correspondents.]

Sound-resisting Floors and Partitions; and Groundwork for Mural Decoration.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I am very much pleased that my letter about sound-resisting floors and partitions has attracted the notice of at least one person, and that one so experienced as Mr. Thomas Potter. It is just because my "experience is against what has always been considered the best way to prevent sound from passing through partitions, etc.," that I thought it only fair to my professional brothers to give an account of it.

It is true that the steel lathing and plaster thereon are in contact with the angle iron studs of the partition. The ceilings, however, are hard plaster on steel lathing laced to iron lathing bars (as in the cut of partition given in Mr. Potter's letter in your issue of October 26th), which in turn are slung up by steel hangers screwed or nailed to the wood joists. This is a method that has been recommended over and over again, and yet I find it an absolute failure. Mr. Potter says this method "should" be soundproof, but I find it not so. My hope was that some architects would be able to say why the methods so frequently recommended have not proved trustworthy in my case, and perhaps to suggest a remedy.

Seeing that we are all anxious to be rid of wood studs and laths, it is very desirable that we should arrive at some certainty of being able to use metal lathing and iron studs without the defect of sound-conductiveness.

Another important matter not wholly unconnected with this subject is that of the many modern hard-setting plasters. These (and the same applies to washable distempers), owing to their imperviousness, are a constant source of trouble from condensation in mild weather in winter following on a spell of cold weather. Another matter bearing upon this is the desire of avoiding hollow spaces in walls which prevents us battening and lathing inside exterior walls—a method insisted upon by by-laws, I believe, in Scotland, and one without which in humid climates it is all but impossible to keep interior surfaces of external walls dry.

If we could get hold of some cellular substance like cork and as cheap as plaster that would be sound-, vermin-, and fire-resisting, and would, when painted to make it impervious to germs and emanations, yet not condense moisture from the air, it would be a boon for lining our walls; and if, unlike plaster, it were not full of soluble salts, it would make an excellent ground for mural painting in a damp climate like this. It seems to me to be pure folly to put valuable paintings either on or in contact with a substance like plaster, which is very hygroscopic, and must continually tend to put out efflorescent salts in a changeable climate. I believe that nothing would promote the rise of a fine school of mural painting in this country so much as the discovery of a stable ground on which to paint as a wall surfacing. No one at present cares to spend money upon procuring good artists to paint upon walls when they reflect that possibly in ten years the work may be ruined.

W. B. HOPKINS.

97, High Street, Berkhamsted.

The Beautification of London.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL

SIR,—With reference to the Town Planning Exhibition, which I had the pleasure of visiting last week, and especially to the schemes for the improvement of the City of London, I was much interested in comparing the plans of the various cities. It was a unique opportunity, and brought out some startling results. Never was it so apparent how necessary it is to follow out the town planning and improvement movement.

To start with London, although it is no doubt the greatest city in the world, yet its appearance certainly does not give one that idea. If we take Trafalgar Square, which is arousing attention, and think of it as being the principal centre of the whole city—what a poor show it makes! It is a marvel that Spring Gardens is allowed to remain another day, also the two other blocks on the east and west sides. I am well aware of the "awful" expense which would be incurred, and also of the small-mindedness which is always exhibited when any scheme which does not include personal gain in £ s. d. is put forward.

However, Trafalgar Square is only a portion of the scheme which I propose to discuss. If the improvement and beautification of London is really going to be taken up in earnest, surely to do anything which is going to make any appreciable difference to the present choked state of things, a boulevard should laid out, right from Trafalgar Square to St. Paul's Cathedral. The route would be along the Strand, which would be laid open to the Embankment. We might then have something worthy of London's greatness. It would be magnificent, and would take generations to complete, but it need not be thought visionary—many cities that London would not look at can show features just as fine. In view of the tide of emigration out of the city, already begun, and the consequent vacancies left, these projects should become increasingly easier.

When once this scheme was formulated, and other open centres and subcentres planned round prominent buildings, and different points of concourse in the metropolis, then minor improvements, such as widening and straightening streets, could be made on an axial plan, and the whole city would begin to take shape. When the present morass of streets was opened up by trunk roads to all important centres (artistically laid out), the principal buildings dragged out of obscurity, and the river, with its bridges, allowed to add its charm to the scene, what a bewilderingly enchanting city London would be!

The total cost of all this would, of course, be prodigious; but it must be borne in mind that it would be spread over a great number of years, and would certainly be worth it. It cannot be urged too strongly that the authorities, with their now increased powers, should not be too parsimonious over the matter. Broadness of view is what is required in national matters, as well as an eye to the future. No great undertaking is worth doing only to last for one generation.

I could not help being struck, the other day, with the excessive height of the generality of buildings, in proportion to the width of the streets. This was specially noticeable in the case of the new Automobile Club. It is impossible to get anything approaching a view of it without going down the side street opposite, and then it is only a fragmentary view. It would be a good thing if the upper storeys of street buildings were recessed. The benefit of the increased light and air that would be let into the street could scarcely be over-estimated.

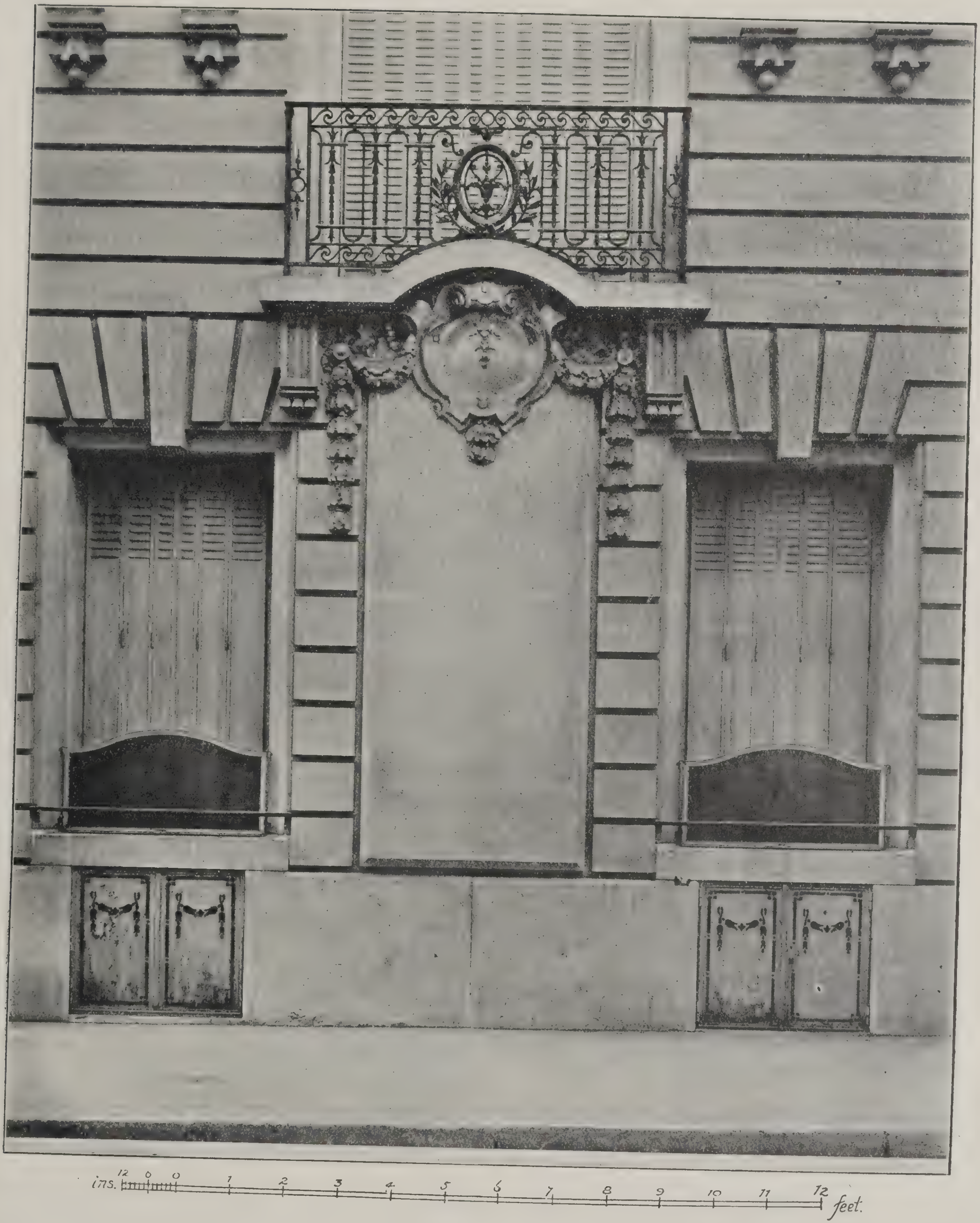
Another point which I should like to mention relates to curved streets and roads, which I notice are used to some extent in new work. These should surely be used with the greatest caution. There is some traffic danger in the limited and skewed view, and it also has an irritating effect not to be able to see round the curve of a street. On spectacular grounds it is scarcely to be recommended, as distant views and openness are of much more value in a city or suburb than a view (in close proximity) of bricks and mortar. Also fashions in planning, theories, and mannerisms, etc., should surely be kept in the background. Planning is meant to last, and should be actuated by wider impulses.

I must apologise for the length of this letter, which has far exceeded my intentions. I should be very glad to see this subject ventilated in the columns of your valuable paper.

A REGULAR READER.

LONDON WATER SUPPLY.

A large and increasing number of artesian wells are being sunk in all parts of London in order to avoid the charges of the Metropolitan Water Board. Since the Water Charges Act came into operation, between two and three hundred wells have been sunk in various parts of the Metropolis. In the City alone one firm of artesian well engineers has during the past twelve months sunk over thirty wells. Among the many large houses which now obtain their supply of water from these wells may be mentioned the Bank of England and the Baltic. In Central London and in the West End scores of private residents and commercial houses have during the past year or two provided for their own private water supply by boring operations. The Secretary of the Water Board, in discussing the subject, said it was conceivable that if the revenue continued to decrease through the increased number of artesian wells there would be a deficiency in their accounts. In that event they would be compelled to go to the local authorities, who would levy a rate which the users of artesian wells would have to pay just in the same way as the ordinary consumer.



This is a good example of modern French work. It oocurs in a large new block of flats, and is executed in the rather soft stone which is so much used in Paris—a stone that lends itself admirably to carving.

DETAIL OF FACADE IN RUE DARU, PARIS. CHARLES LEFEBVRE, ARCHITECT.

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ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) ***Enquiries about buildings to measure in particular towns and districts.***

(2) ***Enquiries embodying questions which have been set in examination papers.***

(3) ***Enquiries which ask for or require the preparation of special designs as part of the answer.***

Correspondents are particularly requested to be as brief as possible. The querist's name and address must always be given, not necessarily for publication.

The Editor is willing to answer enquiries from readers who require information on architectural, constructional, or legal matters. Such information must be regarded as the gratuitous advice or information of a friend, and not as the professional opinion of one who holds himself out as possessing expert knowledge on the subject in question. The Editor will, however, avail himself of the assistance of a large staff of experts in the matters above mentioned. but the enquiries must be sent on the express understanding that he is not to be held responsible for any delays, mistakes, inaccuracies, or negligences which may occur.

Enquirers whose questions involve possible legal proceedings are strongly urged to consult their solicitors before taking definite steps in regard thereto.

Answers by post will be sent if the enquiry is accompanied by a postal order for 1s., made payable to Technical Journals, Ltd., and crossed, and a stamped addressed envelope. Such enquiries must be marked "Answers by Post" on the outside cover.

This fee of 1s. required for answers by post is in no case to be regarded as payment for the answer given, but merely as a registration fee to meet the extra clerical and other expenses incurred in dealing with these special replies.

The Editor also reserves the right of refusing to reply to any question that he may deem to be unreasonable or unsuitable, and it must be understood that both question and reply will, as a rule, be published in these columns.

Echo in a Hall.

"ACOUSTICS" writes: "I should be glad if any of your readers could suggest some method of overcoming an echo in a recently erected hall. The following are the general features of the building :—Dimensions about 30ft. × 50ft. The walls are unbroken by windows or openings of any kind except at one end, which has a three light window. Additional light is obtained from dormers in the roof. The platform is at one end of the building, and the doors are in close proximity to the window referred to."

Stone for River Wall.

C. J. W. (WALLINGFORD) writes: "A river wall is to be built along which, at times, there will flow a very strong stream. It is proposed to build the wall of chopped face walling stones set in cement, with piers at intervals, which are proposed to be faced with Chilmark stone, backed up with rubble walling. At the terrace level there is to be a string course of Chilmark set on a 9in. band of the same stone. Above this there is to 2ft. 6in. of wall, consisting of 1.4 of chopped face walling stones, 9in. of Ham Hill stone, and finished with a coping of Ham Hill stone. I understand there are two beds of Chilmark stone, the green bed and the brown bed. Which bed of this stone should be used for the purpose specified? Are both equally good for the purpose required? The wall will start 2ft. under summer high-water mark. I also am given to understand there are two beds of Ham Hill stone, the grey bed and brown bed. Which of these would be most suitable for the purpose required, and would this stone weather well in such a position? What are the chief points to be observed in the selection of these stones? As the piers are to be faced with Chilmark or dressed stone, of what depth should the bed of the faced stone be in order to secure proper bond into the rubble backing?"

—There are four distinct beds of Chilmark stone. The "trough" or hard bed of yellowish-brown colour is the one used for engineering works. Some varieties of Ham Hill stone do not weather very well; the grey is probably the better stone for outdoor work. The stone should be uniform in colour and texture. The depth of the facing stone on bed must not be less than two-thirds the height of the course for the stretchers. The headers or bonders should be at least twice this depth in the wall.

HENRY ADAMS.

Selection of Lowest Tender.

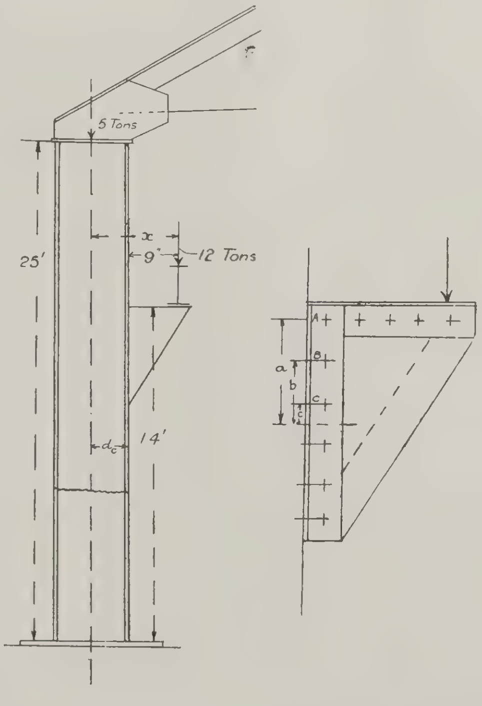
J. G. (CARDIFF) writes: "A number of contractors have been selected by the proprietors, and the architect is to state in the specification that the lowest tender may not be accepted. This consideration would be very necessary in advertised tenders, but having selected the contractors, should not the lowest tender be accepted, if they decide to proceed with the work?"

—The lowest tender should be accepted among a selected list of tenderers if the work proceeds, because selection conveys by implication that the firms so chosen are of so nearly equal standing that any one of them may be entrusted with the work in question. If those who make the selection disregard such implied equality among the firms chosen, they thereby lay themselves open to the suspicion that either the work is intended to go to a favoured firm and that the competition therefore has for its sole object to provide a check on its price, or that one or more cutting firms have been introduced into the list for the purpose of keeping down the general level of the prices quoted by the better class firms from among one of whom a final selection is intended to be made. Any suspicion of a want of good faith on the part of those asking for tenders, tends to limit the number of genuine tenders actually received from the list demanded.

A. G. W.

Stanchion for Workshop.

G. H. (GLASGOW) writes: "In answer to an enquiry published on p. 92 of your issue of February 2nd, 1910, on the design of a column and bracket due to eccentric loading, it was given that the stress on the rivets, A, B, and C, was proportional to their distances from the neutral axis, and that their total was equal to moment of tensile component of moment of resistance = ½ bending moment = $\frac{12 \times 9}{2}$ = 54in. tons. Should not the vertical row of rivets through the angles and web plates be calculated similarly?"



—The calculation of the vertical row of rivets through the angles and web plates in the present case could be made in a similar manner to that given for the rivets A, B, and C, but in this case the strength of each rivet would be the shearing strength or the bearing strength—whichever comes less. In making this calculation, the moment of the load should be taken about the centre line of the rivets, and the additional strength given to the rivets by the top angles is neglected. The rivets must of course be checked for the shear (12 tons in this case). The relative importance of the consideration of the bending moment and the shear will depend on the amount of overhang.

A.

Architects and Surveyors Under Government.

STUDENT (DEVONPORT) writes: "Could you kindly inform me as to the various openings for architects and surveyors under Government, and whence particulars of such exams. could be obtained?"

—The number of architects and surveyors in the service of the Government is quite small. Architects and surveyors are employed in connection with the Office of Works, Admiralty, War Office, Post Office, Local Government Board, Board of Education and Home Office.

The openings are not of frequent occurrence, and appointments are usually made by the President or Chief of the Department concerned. The Civil Service Commissioners, Burlington Gardens, W., would perhaps be able to give more particulars of these posts.

B. K.

Refusal to Execute Work after Selection.

STUDENT (BLACKBURN) writes: "If A, B, and C, tender in writing under an architect for a certain work, and A, being the lowest, is asked to carry out the work, and afterwards declines to accept it, can he be forced to execute the work if legal proceedings are taken? I should be glad if you could name a case on this point."

—It is quite clear that when a tender is made and accepted, there is a complete contract which can be enforced by action. The party who makes a tender has the right to withdraw his tender before it is accepted, but not afterwards. The law is thus stated in Emden's Building Contracts (4th edition): "A tender made by a contractor, and an acceptance by the employer, constitute in law a binding contract when the acceptance is unqualified, and no new terms are contemplated. An intimation in the written acceptance of a tender that a contract will be afterwards prepared, does not prevent the parties from becoming bound to perform the terms in the tender and the acceptance respectively mentioned, if, at the time when the documents were signed, the parties had a contracting mind, and it was their intention thereby to enter into an agreement, and the preparation of the contract was contemplated merely for the purpose of expressing the agreement already arrived at in formal language. (*Lewis v. Brass*, L.R. 3 Q.B.D. 667.) An exception to the rule occurs when the person inviting tenders clearly intimates that a written contract is to be drawn up afterwards. So in one case, the guardians of the poor of a union with a view to obtaining tenders for meat for the use of the workhouse, issued an advertisement, stating that they would receive tenders for the supply of the workhouse with meat for three months, from thirty to fifty stone, more or less per week (describing the sort of meat); that sealed tenders were to be sent to the clerk of the guardians, and that all contractors would have to sign a written contract after the acceptance of the tender. The defendant wrote to the guardians to say that he proposed to supply the workhouse with meat according to advertisement, for the ensuing three months, at sixpence per pound. This tender was accepted, and the defendant was informed that he was appointed butcher; but, immediately afterwards he wrote to the guardians to say that he declined the appointment :—Held, that as a written contract was to be executed, the acceptance of the tender did not form a binding contract, so as to render the defendant liable for refusing to supply the workhouse with meat in accordance with his tender (*Kingston-upon-Hull* (Governors, etc.) *v. Petch,* 10 Ex. 611.)

In conclusion, a curious point of law may be mentioned. A contract becomes complete although the acceptance is not, in fact, communicated to the person who makes the tender. Thus in one case the defendant applied for shares in the plaintiff company. The company allotted the shares to the defendant, and duly addressed and posted to him a letter containing the notice of allotment, but the letter never was received by him:—Held, by Baggalay and Thesiger, L.JJ., Bramwell L.J., dissenting that the defendant was a shareholder. British and American Telegraph Company v. Colson supra overruled. Household Fire Insurance Company v. Grant, 4Ex. D. 216, 48 L.J., Ex 577, 41 L.T. 298. 7 W.R. 858. B.

Raising Party Wall.

"OMEGA" writes: "In carrying out certain alterations, I wish to raise the party wall, dividing the garden of the adjoining house from mine about 6 ft. higher than it is at present, so as to form one side of a room which is proposed to be built. Can the adjoining owner prevent my (1) taking the present boundary wall down and rebuilding same upon a new foundation up to the same height and exactly in the same position as at present, then building the extra height required on the half of the new wall which stands on my ground? (2) Excavating under present wall and putting in a new foundation to same and building up the extra height required on my own half of present wall? Can the adjoining owner compel me to raise the chimney of his house on account of my raising the roof of my house higher than it was originally, and if so, can he prevent me from putting my men on his roof to do the work? The two houses referred to have been built about 30 years."

—It is presumed that "present boundary wall" means the party wall in question, and (from the address given) that the property is situated outside the area affected by the London Building Act, 1894. Further, the following answer is given on the assumption that there are no local by-laws affecting party walls. What "Omega" proposes to do is to trespass on the party wall. Such trespass may or may not be justifiable, according to circumstances. It depends upon whether "Omega" and his neighbour are joint owners or tenants in common of the wall. It has been held that if one of two owners in severalty of the two moieties of a party wall with cross rights of easement pulls down his own portion of the wall he will be liable for disturbing the rights of the other. Again if one of two tenants in common of a party wall excludes the other owner entirely from his occupation of it as by destroying it or by building upon it, he commits a trespass (*Cubitt v. Porter*, 2 M. and R. 267); but one tenant in common cannot bring an action of trespass, or in the nature of trover, against the other, unless there has been a total destruction or conversion of the common property. (*Stedman v. Smith*, 8 E1. and B1. I.) Building a new wall of a greater height than the previous one is not such a total destruction of the wall. (*Cubitt v. Porter* (supra).) A tenant in common of a party wall may pull down the wall for the purpose of rebuilding it, or for the purpose of repair, or for replacing an old foundation by a new one, and this even without notice to the adjoining owner. (Per Jessel, M.R. in *Standard Bank v. Stokes*, 9 Ch. D. 68 at p. 14.) It is nevertheless essential that the tenant who pulls it down shall have an intention to rebuild. In the absence of such an intention he is liable to an action for trespass. (*Jones v. Reed* (1876), Ir. R. 10 C.L. 315.)

From what has been said it will be seen that the rights and liabilities of "Omega" and his neighbour can only be determined by a close investigation of the question whether they are really tenants in common of the party wall. A solicitor should be consulted as to this.

As to the question of the chimney, there is no procedure by which the neighbour can compel his chimney to be raised. The point is, however, that the alterations suggested might cause the neighbour's chimney to smoke and so give rise to an action for nuisance. As to going on to the neighbour's roof, nothing would justify "Omega" in doing so without permission. X.

Adding Crown and Spire to High Tower.

J. W. K. (DUNDEE) writes: "It is proposed to put a crown on an existing square tower 150 ft. high, which is about 450 years old. The walls for the first 100 ft. in height from the ground are 7 ft. thick, and for the remaining 50 ft. are 5 ft. thick. They are not tied together in any way. The crown would consist of eight ribs and would weigh 336 tons, including the central spire, giving a thrust of 42 tons to be resisted by each support (eight in number). As shown on the tracing [not reproduced], I have resolved this thrust, and find that it gives a horizontal push of 13½ tons. This overturning force would operate at the point of rupture A, 50 ft. below it giving (13×50)=650 ft. tons causing rupture. The resisting force is the weight of the wall immediately below the support, This is equal to 156 tons, plus 40 tons. The vertical weight of the crown on the supports gives 196 tons acting at the centre of the 5 ft. wall, giving at the point A (196×2.3) =490 ft. tons resistance to rupture. The available sectional area of resistance is represented by two mullions or divisions between the windows, the combined width of which is about 9 ft., the thickness being 5 ft. The overturning force exceeds the resisting force by 160 ft. tons, and I therefore conclude that the tower would not be able to resist the thrust of such a crown upon it, it being understood that no auxiliary help in the way of steel ties can be used. The weights given may be taken as correct; and I shall be obliged if you will kindly get the calculations checked and give me any further information on the matter."

—The thrust at the foot of the crown must be taken by a continuous girder in straight portions built in the stonework, so that there is only the dead load of the weight of the crown, otherwise the project must be abandoned. No allowance for wind pressure on the crown or upper portion of tower appears to have been made. In an old tower of this character built in mortar, there is probably no surplus strength, as the hearting of the walls is not generally very solid.

HENRY ADAMS.

LECTERN, SILK WILLOUGHBY CHURCH.

The lectern in Silk Willoughby Church, illustrated on the opposite page, was dedicated recently by the Bishop of Lincoln. It was designed by Mr. W. Kingsley McDermott, A.R.I.B.A., of London. The base has three equal sides, into which are framed panels carved by a former rector, the Rev. W. H. E. McKnight. The eagle and book-rest were carved by the Bromsgrove Guild, of Bromsgrove, and the base and steps were made by Mr. John P. White of Bedford.

Silk Willoughby, like many other villages in South Lincolnshire, is noted for the beauty of its parish church. Considerable restoration of that building was carried out two years ago, but much still remains to be done to complete the scheme prepared by Mr. Hodgson Fowler, F.R.I.B.A., of Durham, the diocesan architect. The summit of the tower in particular requires attention, as also do the bells, vestry, and rood screen.

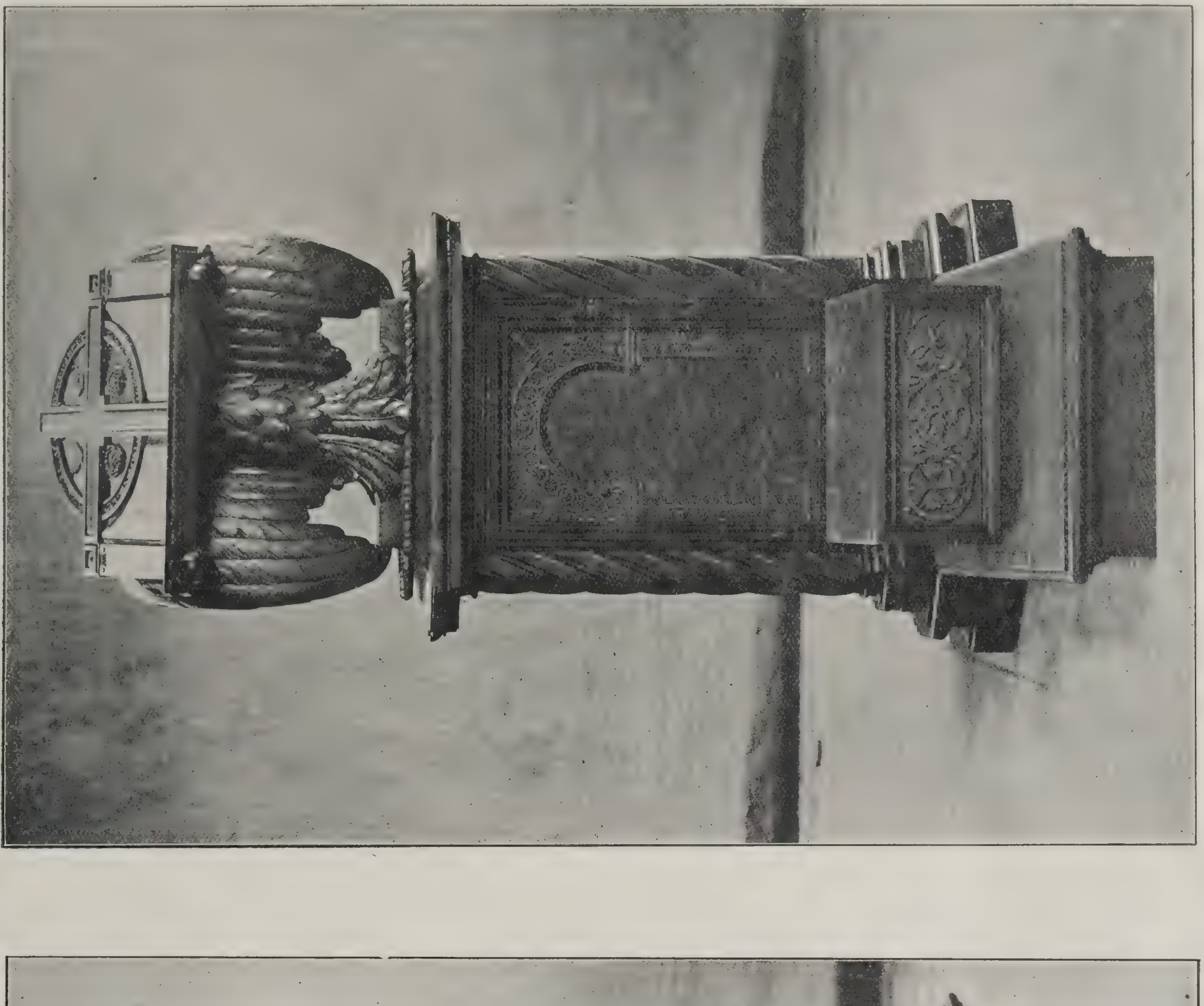
TRADE AND CRAFT.

Leeds Fireclay Co.'s Specialities.

"A Few Specialities Manufactured by the Leeds Fireclay Co., Ltd.," is the title of a handy booklet illustrating some of this firm's baths, lavatories, closets, latrines, fireplaces, and Burmantofts "Marmo," and issued in connection with the Building Trades Exhibition at Sheffield, where, as recorded in last week's journal, the company had an interesting stand. The company own extensive beds of fireclay, and, from the raw material obtained from their own mines, manufacture, at their eleven large works, near Leeds, Halifax, Huddersfield, and Leeds, many kinds of earthenware goods in addition to those enumerated in the list under notice. These include Cliffs' Imperial porcelain baths, the Savoy bath; various lavatories, such as Oates and Green's De Soto; a patent surgical lavatory, which is perfectly smooth in the interior, and is fitted with swan-neck supply and treadle-action or elbow-action valves; and the improved Bradford, the triform, the L.C.C., and the patent open-channel downflow lavatories. The closets include the porcelain "Granite" closet, which is heavy, massive, and strong; the Syrok heavy fireclay closet; and the Petite school closet. The improved Isolt latrine, with side outlet, has closet pans in heavy, highly glazed fireclay, automatic flushing tank, polished whitewood ring seats, etc. The patent Univert conduits, and new drainage specialities for inspection chambers, are also illustrated; and the patent Shepwood brick white-glazed partitions are shown in elevation and section. Other illustrations represent a Burmantofts fireplace of simple but attractive design; an elevation of Messrs. Simpson's new premises at Doncaster (Mr. F. Norman D. Masters, M.A., architect), in which Burmantofts Marmo has been effectively used; and an interior view of Glossop Road Baths, Sheffield (Mr. Arthur Nunweek, architect), to which glazed bricks, spittoons, slipper baths, etc., have been supplied by the Leeds Fireclay Co., Ltd., whose head office is at Wortley, Leeds, and whose London office and showrooms are at 2 and 3, Norfolk Street, Strand, W.C.

NEW MUNICIPAL WORKS.

The Local Government Board has recently held (or had proposed to hold) inquiries into proposed expenditure by public bodies as follows: Water Supply.—Preston Rural District Council, £3,727 for Ribchester and £952 for Hothersall (October 28). Sewerage and Sewage Disposal.—Prescot Urban District Council, £2,300 (October 26); Repton Rural District Council, £925 for Castle Gresley (October 27); Littlehampton Urban District Council, £14,750 (October 26); Colchester Borough Council, no amount stated (October 28). Street Improvements, etc.—Heaton Norris Urban District Council, £5,959 (October 27); Wembley Urban District Council, £2,450 (October 21); Barnoldswick Urban District Council, £2,302 (October 26); Cheadle and Gatley Urban District Council, £2,147 (October 28); Stretford Urban District Council, £4,758 (October 26); Fleetwood Urban District Council, £2,995 (October 25); Walthamstow Urban District Council, £1,252 (October 25); Whitworth Urban District Council £16,500 (October 27); Leigh Borough Council, £4,837 (October 27); Plymouth Borough Council, £1,491 (October 27). Various.—Rhondda Urban District Council, £5,500 for Porth Gas Works (October 27); Accrington Borough Council, £16,041 for electricity undertaking (October 25); Middleton Borough Council, £3,000 for ditto (October 26); Bridgwater Borough Council, £7,778 for Court house, etc. (October 26); Rawtenstall Borough Council, £1,500 for municipal offices extension (October 25); Leigh Borough Council, £7,620 for gas undertaking (October 27); Plymouth, £4,000 for County Court offices (October 27); Ashington, £3,000 for council chamber, etc. (October 25).



NEW LECTERN IN SILK WILLOUGHBY CHURCH, SOUTH LINCOLNSHIRE. W. KINGSLEY McDERMOTT, A.R.I.B.A., ARCHITECT.

SOME NOTABLE YORKSHIRE BUILDINGS.

On October 24th, before the Architectural Association, Mr. Edwin Gunn, A.R.I.B.A., read a paper on the annual excursion of the Association to Harrogate and District in August last. The following is an abstract of the paper.

Yorkshire had not previously been visited by the Architectural Association, and the selection of a northern centre did not attract a very large attendance, possibly owing to the long railway journey from town. An excellent week was spent, however, when the members of the party had learnt the peculiarities of the local weather.

Local Buildings and Materials.

The buildings seen were well worthy of study, though the lack of the unexpected in the shape of simple roadside domestic work of really spontaneous architectural character was felt by members accustomed to the southern counties. The local building material is, of course, stone; and many excellent weathering varieties, both of freestone and rubble, are in use. Roofs are covered with stone slabs, not at all resembling the Gloucestershire or Northamptonshire "stone tiles," but much larger, thicker, more regular in shape, and, owing to their weight, habitually laid to a flatter pitch. In the Vale of York a rather dull red brick, lacking the texture of the Home Counties sand-faced brick, is the staple material, and roofs are usually of pantiles. Both these materials, however, invade one another's territory, and in the stone district pantiles are almost more common than roofing slabs.

The buildings visited on the excursion lay in three clumps—a thick cluster at York and more scattered groups around Ripon and Leeds.

York Minster.

York contains a considerable amount of Norman work, the most visible being the lower portion of Bootham Bar, but the most noteworthy the remains of the crypt at the Minster, the chief part of which was discovered as a consequence of the fire of 1829. There were two periods of building under Norman bishops—the first when Thomas, the first Norman archbishop, proceeded to rebuild what remained of the Saxon Cathedral about 1080, and the second when Archbishop Roger either supplanted Thomas's choir with one of nobler dimensions, or rebuilt the Saxon choir which had possibly been left standing. It is to the latter period (1154-1181) that the fine work now visible in the crypt belongs. The addition of the unsatisfactory western towers between 1433 and 1474 left the Minster practically as we see it. It escaped serious damage during the Civil War, due to the good offices of Fairfax, to whom we owe the preservation of the finest collection of painted glass in the kingdom. The glass of York requires a paper by itself, and cannot be even slightly dealt with now.

St. Mary's Abbey and the Walls.

Reverting to the thirteenth century in York at large (whence we have strayed to a consecutive account of the building of the Minster), the ruins of St. Mary's Abbey exhibit design and detail of the very highest order. The remains are those of the third church, the building of which was begun by Simon of Warwick, who was Abbot from 1259 to 1299.

Among relics of the Edwardian age are the city gates and walls. The walls are perfect all round the city, but built and repaired at so many different periods that very little ancient work can be definitely made out. The gates or bars, however, all show good Decorated work of military character, though only one—Walmgate Bar—retains its barbican, which was in the case rebuilt in 1648.

St. Anthony's Hall.

One of the finest of the interesting lesser buildings of York is St. Anthony's Hall, founded by Sir John Langton, Mayor of York, about 1440, for Brethren of the Mendicant Order of St. Anthony. It consists of a noble hall entirely of timber construction, covered by a steep open roof with five very fine arched trusses, and three tie-beam trusses at the west end. On either side are aisles covered by flatter-pitched lean-tos, with arched braces, the principal rafters of which thrust their inner ends into the "nave," where they appear as diminutive hammer beams. The building is now divided by modern floors and partitions to serve as the Bluecoat School. Another interesting building is St. William's College.

Old Guild Halls.

Like all mediæval towns, York had its trade guilds, and the continued existence of two of these in their original buildings (though shorn of their powers) gives an old-world flavour. These are the Merchant Taylors and the Merchant Adventurers, and though their halls do not now present any strikingly noteworthy architectural features, they are of the type which we would not willingly suffer to pass. The Merchant Taylors' Hall has been ceiled and panelled in Georgian times, but the feet of four moulded oak trusses poke through the ceiling and indicate the presence of a mediæval roof. Trinity Hall, the home of the Merchant Adventurers, has a pleasing front of three vine-carved barge-boarded gables, hidden behind modern houses, and its little chapel, with pews and pulpit of 1663, is curious. The actual hall consists of two parallel spans with rude timber trusses, and has little architectural character.

Treasurer's House.

Treasurer's House stands on the north side of the Minster, opposite the Chapter House, and though its core is mediæval and even older, externally the house is Jacobean. First Treasurer's House, built by Archbishop Thomas, was apparently on the site of the Roman Imperial Barrack, and fragments of classical columns have been discovered at a level some 12ft. below the present ground floor. The house has had many owners, most of whom apparently left their mark upon it by some alteration. The most important results were the refronting and division of the mediæval hall by a floor (both assumed to be due to Sir George Young, about 1620), and the redecoration of the interior with panelling and new staircases, by Mr. Squire, between 1698 and 1700. Sir George Young's "frontispiece" is a composition of the long-suffering Orders, used with most Germanic licence. On either side of the doorway a single Ionic pilaster carrying nothing is placed above coupled Doric columns, all having very weird details. The projecting wings with their ogee gables balance in mass, but the detail on the west has been remodelled at a later date, and the masonry refronted. The north front remains practically unaltered—a pleasing piece of brickwork. The house was restored for the present owner, Mr. Frank Green, in 1897, and now houses a fine collection of period furniture in the various living rooms. Mr. Temple Moore's work is not the least interesting in the house, his new entrance from Chapterhouse Street being a very delightful composition indeed.

The Later Renaissance.

The later Renaissance in York would apparently prove an interesting field for study. Numerous quietly satisfying brick fronts, with the usual appurtenances of wrought-iron railings, lead rainwater heads, and sturdy sashes give promise of good, simple panelled interiors.

Austhorpe Hall.

It was amusing to see the avidity with which sketchers, measurers, and photographers attacked Austhorpe Hall, which was distinctly the success of the excursion. The house is particularly valuable owing to its perfect condition. It has suffered but one outrage—the removal of its main staircase—and, judging from the fine detail of the back stairs, this is a great loss. The rooms are all panelled with fine bold panelling and most excellent mouldings, which are in a fine condition for study, since in several cases they are of clean oak, with contours undulled by paint. The old lock furniture remains on the doors, and the old leaded glazing in the mullioned and transom casement windows. Several of the ceilings are divided into bold coffers by beams with plaster mouldings and soffits, the room at the right of the Hall having also modelled leaves in the angles. The simple but wholly satisfying means by which the external design attains its effect of dignity and restraint are very instructive; practically the front is a play upon quoins of varying depths. The absence of absolute symmetry is also interesting. The two chimney-stacks above the roof are recently rebuilt.

Temple Newsam.

An interesting and unusual building is Temple Newsam, within four miles of Leeds. As its name tells, it stands on the site of a former Preceptory of Knights Templars. The house is built round an immense courtyard, entirely open on the east side, and derives its striking character from the simplest components. The walls are of brickwork, and, with the exception of a projecting entrance porch facing the court, have no architectural embellishment other than a few stone string-courses, and a profusion of stone-mullioned and transomed windows of varying proportions, including bays, large and small, square and canted, arranged without any particular effort at order or rhythm, but unified in effect by the widespreading building of which they form part, and the level balustraded parapet which continues uninterruptedly around the whole building. Owing to the destructive action of the Leeds atmosphere, the stonework has become very badly perished, some of the balusters being in places little thicker than a lead pencil. The roof is low-pitched, and covered with stone slabs. The most interesting room in the house is known as the Darnley-room. Its situation is at the south-west angle of the house on the first floor, and it has a rib ceiling and exceedingly fine modelled frieze with cast or stamped leaves and berries united by freely-worked stems on a rough and uneven background. The external brickwork here, and on the west front generally, shows patterns in dark headers, so that it is probably the earliest work in the building. The south front was rebuilt in 1796, and a great deal of interior work has been done by Mr. Bodley, including the grand stairway on the model of Hatfield and Blickling.

Harewood.

About six miles from Leeds, in the direction of Harrogate, is an interesting group of buildings at Harewood. Within the limits of the Park are the ruins of Harewood Castle, the church, and the mansion which replaces the older Gawthorpe Hall, once the seat of the Gascoignes, and afterwards a sort of "week-end home" of the Earl of Strafford. Harewood Castle is a most interesting ruin, and it is surprising that it appears to have received so little attention. The principal floor consists of a large hall lighted from east and west by square-headed windows with mullions and transoms, and other rooms at the north and south ends. The entrance is by projecting tower on the east front towards the north, in which the portcullis grooves are clearly visible; over this is a portcullis chamber. To the north of the screens were the kitchen and buttery, beneath which the fall of the ground rendered it possible to form extra rooms, one of which was apparently a guard-room, and the other a strong vaulted cellar. Above the portcullis chamber is a small chapel or oratory. At the opposite end of the hall was the dais, with a large fireplace in usual position, and a most interesting recess, rather like an altar tomb, but with a small window lighting it from above, which was apparently a permanent buffet or sideboard. A wide spiral stair at the east end of the dais led to an upper floor above the hall (as in a Norman castle), and to several storeys of chambers in two square turrets at the south end. The Hall was covered by a pitch roof within the battlements. The Castle was built and fortified in 1367 by William de Aldburgh. Harewood House, which was completed in 1760, is the most considerable work by John Carr of York, but its appearance has been greatly modified by alterations made in 1843 by Sir Charles Barry. Carr's work is well summed up by Professor Blomfield as of correct proportion, "free from affectation, and not particularly ugly." Barry's alterations consisted in the removal of the projecting portico from the garden front (which apparently he proposed to transfer to the entrance front, though this was not done), and the raising of the end pavilions and links to provide additional bedrooms, with the application of a lofty balustrade as a crowning feature to the whole. Barry also destroyed several of the rather interestingly shaped rooms shown on the original plans. His sketch designs are preserved at the house, and were kindly exhibited for our inspection. The greater part of the interior decoration, and much of the furniture, is the work of Robert Adam, in his characteristic and refined manner. It is said that Chippendale was employed on the carving. The strong and weak points of the then current manner are well shown in the design of the entrance lodge to the park, which is a dignified composition with spreading wing walls and railings planned on a reflex curve (like a Greek moulding), connecting the central entrance lodge with two square angle pavilions. Their purpose I know not; possibly it is purely formal, but windows not fitting in with the design are compelled to hide round the corner.

Harewood Church stands some distance north-east of the house. It is of early Perpendicular date, and probably built by the Prior of Bolton, to whom it was appropriated by Lord Lisle in 1383. The plan presents some interesting features, notably the way in which the aisles and nave arcade overlap the western tower, and the narrow, low arches piercing a length of solid wall at the east end of the nave arcade, which latter feature is probably accounted for by the former presence of a rood loft. The nave is without clearstory, and the very lofty arcade in which the archmould dies on to the octagonal shafts without impost mouldings is a telling piece of work, very similar in detail to St. Martin, York.

Ripon.

A church has stood upon the site of the Minster since A.D. 670. St. Wilfred, Abbot of Ripon, was the first builder, and of his church the crypt remains below the present central tower. The present church was laid out on the usual lines by Archbishop Roger (1154-1181) as an aisleless nave, central tower, and aisled transept and choir. Of Roger's work the choir arcade remains intact, and the north and west faces of the central tower and portions of the original nave wall may be seen. Archbishop Walter de Gray (1216-1255) added the west front and two western towers, which then stood outside the side walls of the aisleless nave, Archbishop John Romeyn the Younger (1286-1296), who rebuilt York nave here, rebuilt the east front and bays of the choir triforium and clerestory adjoining. Towards the end of the fourteenth century the Ladyloft was erected over the chapter-house and vestry; in 1450 the south-east corner of the central tower fell, and these two faces were then rebuilt, together with the east side of the south transept. Owing to its abnormally short nave, and the lack of a dominating tower or group of towers, Ripon Minster has a huddled appearance. The east end is a noble composition, and, seen from the lower ground of the churchyard, groups up well. Towards the west front only a guide-book could possibly be enthusiastic; it is tame and insipid in an extreme degree. Once again the Perpendicular builders (particularly of the north side) score heavily, when the virile strength of their work is contrasted with the timid Early English front. The internal effect of the Minster is confused, owing to the bungle of piers and arches at the crossing where the change of form in the arches has been left half done. The strong family likeness between the east fronts of Ripon, Guisborough, and Selby has been noted by Mr. Prior in his "Gothic Art."

"The Maudlins."

The small chapel of the Hospital of St. Mary Magdalene, locally known as "The Maudlins," stands to the north of the town. The almshouses have been twice rebuilt, but the chapel, which is derelict, stands practically as it was left at the suppression of religious houses. Archbishop Thurstan (1114-1141) founded the hospital for secular brethren and sisters and a chaplain, and the chapel is probably his work, though the Norman windows have been replaced by Perpendicular ones, and the jambshafts and arch of the Norman doorway "snowed up" by later insertions.

Kirklington Church.

The church at Kirklington is interesting. An aisleless Norman nave has had aisles added in the fourteenth century, the piercing of the thick walls by arches having apparently been an engineering feat which taxed the capacities of the builders to the utmost, and led to some ugly distortions and a curious final effect owing to the clerestory wall, 3ft. 6in. thick, being carried on octagonal shafts, 1ft. 9in. in diameter, by chamfered arches. The chancel was added in 1200, and three lancets and a blocked priest's door of this date remain on the north side.

Fountains Abbey.

The magnificent ruins of Fountains Abbey afford perhaps a better general idea of the disposition and extent of the buildings of a large monastery than any similar remains in England. The original buildings have all the Cistercian austerity and avoidance of display, and conform to the usual practice of the order in the avoidance of a triforium and the absence of western towers in the church, and in the position and form of the chapter-house and refectory. The solid transitional Norman nave was building through the eleventh century under several abbots, and stands to-day roofless but unaltered save for the insertion of a large Perpendicular west window. Abbot Huby built the noble tower at the north end of the main transept at the commencement of the sixteenth century. The noble tower built by Abbot Huby remains practically perfect save for the upper portion of its pinnacles and all its interior floors. It is a really splendid mass, well up to the high level of the English tower designers. The proportions of its several storeys, growing less as they ascend, are unusual, and another uncommon feature is the abundant use of lettering as ornament. The twelve pinnacles, all set diagonally, must have given almost the effect of a Somersetshire crown when complete. This work is in the style once called "debased."

Fountains Hall.

Fountains Hall, which stands against a steeply sloping hillside just outside the west gate of the abbey grounds, was built in 1611 by Sir Stephen Proctor, of stone obtained from the abbey ruins, and has undergone little change in its external aspect since that day. Internally the house was a disappointment, but externally it is charming, despite its coarse and ill-judged detail. The lovely walled terrace garden, continued beyond the entrance roadway, adds immensely to the effect.

DISCUSSION.

Mr. J. Johnson proposed a vote of thanks, and said what most impressed him were the particularly fine remains of Fountains Abbey. Barry's alterations at Harewood House were not, in his opinion, an improvement. He thought it a pity that the portico should be removed from the south front and not placed on the entrance front.

Mr. Louis Ambler seconded the vote of thanks, and regretted that no views of King's Manor in York had been shown. The building, with its stone domes, was unique in Yorkshire. He was curious to know whether there had existed an earlier house than the present Austhorpe Hall, the date of which was 1690. A Sir Thomas Ambler, curiously enough, was said to have lived there in 1580. He much preferred Carr's original design of Harewood House.

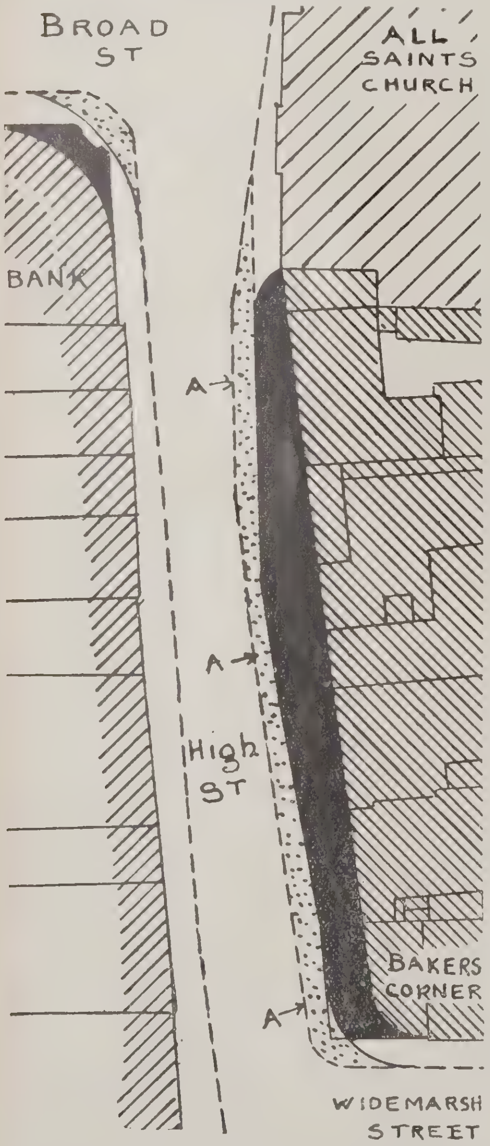
Mr. F. Dare Clapham commented upon the excellent preservation of Fountains Abbey, which was an example to all other owners upon whose land such buildings happened to exist.

Mr. C. A. Bateman having made a few remarks, Mr. Arthur Keen said that he did not think the cresting in St. John's Church, Leeds, had been removed by Mr. Shaw, as Mr. Gunn had stated, but by somebody else. Heraldry, he noticed, was largely used as an architectural enrichment over the doorway at Harewood Castle, and the small quantity of heraldry on the City gates at York demonstrated its value as a most effective decorative material.

Mr. Edwin Gunn briefly replied.

STREET IMPROVEMENT IN HEREFORD.

We have received some account, along with the accompanying plan, of a scheme for a street improvement in Hereford, put forward by a Hereford architect, Mr. Herbert Skyrme, which appears to be a very good proposal, and should receive the support of the inhabitants and the local authorities. As will be seen from the plan, the building line on one side of the High Street (shown in black on the plan) forms an obtuse angle, the opposite side of the street being straight; this not only looks bad in itself, but has the effect of narrowing the roadway in the centre portion of the street. Mr. Skyrme proposes to set back the existing walls of the ground floor portion of the houses, forming the shop fronts, to the extent of six or eight feet, and use this space for the foot pavement, carrying the upper part of the houses on supports, leaving a covered way similar to those of the Chester Rows. The space occupied by the present footwalk would then be thrown into the roadway. This seems to be a simple and effective way of improving and widening the street, without probably any very large or prohibitive outlay. The only thing we do not quite like in the description is the word "ornamental"—the projecting portions of the buildings "to be supported on ornamental cast-iron columns and girders." Ornamental cast-iron is apt to be rather tawdry; if iron has to be used for the sake of not obstructing too much light, it is best treated in a plain and utilitarian manner. Would it not be possible to use stone columns? They would not stop out much more light, and the appearance would be infinitely better.



Block plan showing High Street. The black portion on the right denotes the additional pavement gained by the suggested scheme. The existing pavement shown by dotted space in front of the black portion denotes existing pavement to be removed, adding 4 or 5 feet to roadway.

A SUGGESTED IMPROVEMENT SCHEME FOR HEREFORD. BY HERBERT SKYRME.

(The accompanying plan is kindly lent by the "Hereford Journal.")

THE FOUNDATIONS OF FRENCH AND ENGLISH GOTHIC TOWNS IN THE SOUTH OF FRANCE.*

By Dr. A. E. Brinckmann, of Aix-la-Chapelle.

If we wish to have a basis on which to study, with their numerous contrasts, the systems of town planning adopted in the late Mediæval epoch and included within the evolutionary period of Gothic architecture, we must first form a picture of the structure of cities during the first ten centuries of the Christian era. We can still restore such a picture by comparing the plan of a modern town with the plan of old cities still extant. Changes that have occurred in the course of many centuries have been unable to obliterate their fundamental character, as shown, for instance, in the case of Strassburg, Orléans, and many other towns, where the Roman castrum or camp is still recognisable in the "old town."

After Southern Gaul, under the Roman domination, had developed a vigorous town life, we observe, about the fifth and sixth centuries of our era, not only a new style and a new departure in town building, but also evidence of a very marked return to urban polity. This was the result, in the first place, of new social conditions, of the development of temporal and ecclesiastical feudalism; and, in the second place, of the great unheaval of nations. Goths, Saracens, and Normans appeared in turn on this great stage. It was these very cities that attracted the plunderers, and whatever had not struck deep root into the soil was swept away. It was but seldom that these destroying hosts turned a town into a base of operations, as the Visigoths built Carcassonne, the old settlement close to the Roman citadel of Carsaco. Severed from the living world, sprung up as it were from the bosom of the mountain, we see the city of Carcassonne standing like a vision of the mediæval burgh.

[Half-a-dozen views of the city were shown.]

When the chaotic condition of affairs had slowly settled down and some order was established, new life was infused into the conception of town planning. Economic and legal privileges gave prominence to the urban population and raised its status in the social system. The constantly increasing necessity for union apparent in the middle ages was instinctively pressing men into closer association.

Religiously and socially this tendency received the support of the ecclesiastical and secular bodies, of the monasteries, and of chivalry. The consciousness of *nulle place pour l'homme isole* urged the individual to join the group, and the stronger the group became the more the individual felt his weakness. Such a state of things did not come to an end until the Renaissance. This instinctively felt need of combination whenever dissensions arose led to the foundation and population of new towns, and from it sprang up that municipal life the external expression of which was the Gothic style.

Before arriving at the new town stage, however, we observe preparatory tentative forms, which in historical evolution may be regarded as attempts to embody an idea for which the resources at hand were still inadequate. There is a want of self-reliance to produce the new as such. New departures in the structure of towns seek support in the old cities, monasteries, and burghs that already exist. Close to Narbonne appears the Bourg St. Paul, which dates from 800. In the north-west, at the foot of the Burgh of Carcassonne, the Faubourg (Faux-bourg, which means a small inferior town) of Barbacane makes its appearance. The relations between these suburbs and the metropolis were generally unfriendly, for the old town looked down upon these humble settlements.

Yet it sometimes happened also that an old town constantly absorbed its suburbs, and had thus to extend its enceinte of walls, until it finally came to constitute the centre only of the new town, as, for instance, here at La Réole, where old walls of various periods have been preserved.

Only at the moment when the towns assumed any importance for the ruling political factors did the art of town planning in the South of France receive the requisite impulse. This took place when the nobility recognised the advantage conferred upon them by fortified towns. The shifting of political power in Southern France accounts for these changes.

The attention paid to towns resulted in the foundation of new ones altogether. A factor of an economical character became identified with this polito-military view: a town, with its contributions and services, became for the founder who extended his protection to it a profitable investment. These foundations were salled in France villesneuves or bastides.

The originators of these new towns came from three different quarters. Sometimes it was the French Crown that sowed the first seeds of the conception of unity. At another time it was the Kings of England whom we find erecting a wall with bastides before Bordeaux, which had supplanted Bazas. Finally, the third class of town-founders is to be found in the great Suzerains, who wanted by this method to secure their power against the Crown, against the small territorial lords, the ecclesiastical princes, and the monasteries.

[The paper was illustrated by thirty-three diagrams, each of which was briefly explained by the author.]

In 1669 the Rue de la Ferronnerie was occupied by shops, the backs of which adjointed the charnel-house of the Cimetière des Innocents. Louis XIV., with a view to increasing its width to 30 feet, ordered that the Chapter of Saint-Germain-l'Auxerrois should, in accordance with their offer, have these walls replaced by a large building entirely occupying one side of the new street. Furthermore, "at each end of the Rue de la Ferronnerie was to be built a portico according to a drawing which was also ordered by His Majesty." The King decreed at the same time that all the sums due by the Chapter of Saint-Germain-l'Auxerrois concerning the extension of the Louvre, up to the sum of one hundred thousand livres, should be applied "as to one half to the erection of houses in the Rue de la Ferronnerie, and as to the other half for such ornamental purposes and at such places as it shall please His Majesty to order."

In 1684 the Maréchal Duc de la Feuillade, wishing to provide a circular and ornamental space in harmony with the superb statue of Louis XIV., bought some ground and started works according to drawing supplied by Jules Hardouin Mansart, which were continued after his death by the Provost of the Merchants' Guild and the Alderman of the City of Paris. The contract bound the owners of the houses around the square and their successors to keep up the frontages in the same condition, without "ever making any changes therein."

In 1685 Louvois, the Minister, wishing to concentrate upon the space now occupied by the Place Vendôme, the King's Library, various academies, the Mint, the Hôtel des Ambassadeurs, etc., bought the Hôtel de Vendôme, pulled down the Convent des

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*Abstract of a paper read at the recent Town Planning Conference.

Capucines, and rebuilt it with a large dome in axial line with the space. This scheme provided for a square built on three sides, whilst the fourth side was closed by railings raised along the Rue Saint-Honoré, with important pavilions at the four corners, and an arcade entrance opposite. But Louvois died in 1691, leaving his work unfinished. Then, in 1698, Louis XIV. caused the buildings that had been started to be demolished, and ordered the works to be resumed according to Mansart's plan, which provided for its present octagonal shape, and which affected not only the square itself, but also the two approaches permitting access to the Rue Saint-Honoré and the Rue des Mathurins. It was then that the Place des Conquêtes, or Place Louis le Grand, which was finished in 1701, became the meeting place of the Parisian aristocracy during the eighteenth century. Towards the end of last century the character of the old dwellings in the Place Vendôme gradually disappeared and gave way to hotels and commercial establishments, some of which, in spite of the authorities forbidding the terms of their contracts, erected on the balconies and other places signboards which disfigure their general architectural style.

NEWS IN BRIEF.

Statue of the Duke of Devonshire at Eastbourne.

A statue of the late Duke of Devonshire, raised by public subscription, was unveiled at Eastbourne last week by the Duke of Norfolk, Lord Lieutenant of Sussex. The statue is of bronze, and is the work of Mr. Alfred Drury, A.R.A. It is 8ft. 6ins. high, and stands on a granite pedestal 10ft. high. The figure was cast by Messrs. Singer and Sons, of Frome. The monument represents the late Duke in the robes of Chancellor of Cambridge University, with the Collar of the Order of the Garter. It stands on the Western Lawns, which form part of King Edward's Parade.

The Painted Hall at Greenwich.

The Painted Hall at the Royal Naval College, Greenwich, in which are preserved the Nelson relics, is now closed to the public. It will not be reopened until the end of January, in order to facilitate the carrying out of necessary repairs. These, however, have nothing to do with the fabric, so far as the walling is concerned, nor with the mural paintings, which were restored a short time ago. All that is to be done is the repairing of the stone flooring, which is made up of square flags, some of which have greatly deteriorated; but the work will take some time on account of the elaborate precautions necessary for the preservation of the famous paintings from possible injury, owing to the dust and dirt arising from operations.

Institution of Civil Engineers' New Building.

The laying of the foundation stone of the new building for the Institution of Civil Engineers in Great George Street took place last week. The present building was erected in 1896, but as the site was required for the extension of the Government offices the Institution found it necessary to find a new home, and obtained the present site, on which will be erected premises which will occupy an area of 21,000 square feet. Sir William H. White, chairman of the Building Committee, said the new home they were about to build would provide for the expansion which they confidently hoped would take place in the future. It was a singular fact that during the last 16 years they had had reason to rebuild twice. The first rebuilding was necessitated by the natural growth of the Institution. The total number of names on the roll was 6,221 in 1894. At Midsummer, 1910, the total was 9,053. At Midsummer, 1894, they had 794 students; at Midsummer, 1910, they had 1,733. Mr. James C. Inglis, President of the Institution of Civil Engineers, laid the foundation stone, placing below it the memorials —copies of the charters and of the Telford, Watt, and Stephenson medals of the Institution. Mr. Alexander Siemens, President-Elect, proposed a vote of thanks to Mr. Inglis, which was seconded by Sir John Wolfe Barry. The President, in reply, said the question of education and the connection between theoretical knowledge and practice was one of the most important considerations for the future of their Institution. Their hope was that the Institution would become the parent engineering institution for British engineers all over the Empire.

A New Technical School for Cardiff.

Cardiff Education Committee have recommended the Council to proceed with the work of erecting a new technical school in Cathays Park. The cost, exclusive of the site, is estimated at £40,000.

Palladium Theatre of Varieties.

We understand that in this building, which is the largest of its kind in London, particular attention will be given to the style of electric fittings. The fittings in the auditorium will be chiefly of the Georgian type, in a dull brass finish. The stalls, saloon, lounge, and landings, will be lighted by electroliers and other fittings be lighted by electroliers and other fittings of special heavy Georgian design, whilst fittings of Louis XV. style in gilt and crystal have been selected for the dress circle saloon. The whole of the fittings are being supplied by Messrs. Siemens Brothers Dynamo Works, Ltd. (Fittings Department, Tyssen Street, Dalston), whose own artist is responsible for the accepted designs.

Compensation for Contractors.

In January, 1909, the Government of the Argentine Province of Buenos Aires allotted to Messrs. Pauling and Co. (Ltd.) a contract for the carrying out of certain drainage work, the conditions being that the work should be carried out at cost price, and that a commission of 10 per cent. should be given to the contractors as their profit. Subsequently the Provincial Government came to the conclusion that it would be more to their interests to carry out the work themselves, and they approached the firm in question with a view to the rescission of the contract. The matter was referred to arbitration, with the result that the arbitrators, who were both natives of the Argentine, awarded Messrs. Pauling and Co. (Limited) the sum of £150,000 as compensation to them for the cancellation of the contract.

Abuses of Public Advertising.

A report of the Society for Checking the Abuses of Public Advertising gives a statement of the position as regards the operation of the Advertisements Regulation Act of 1907, and of the sky signs prohibition provisions of the Public Health Acts Amendment Act of the same year. Under the latter 154 cities and towns and districts in England and Wales forbid sky signs. Many others do so under private Acts. Under the Advertisements Regulation Act the following local authorities have up to the present framed by-laws which have been approved by the Home Office, and are now in force:—Counties—Cumberland, Lancashire, Somerset, Suffolk (East), Westmorland; Boroughs, etc. —Abingdon, Barnes, Bromley, Cheltenham, Exeter, Hereford, King's Norton and Northfield, Luton. A great number of drafts are still under consideration. The hon. secretary of the Society is Mr. Richardson Evans, The Keir, Wimbledon.

Garden City for Guildford.

A number of private residents at Guildford have banded themselves together with the intention of developing at once 20 acres of land on the outskirts of the borough on garden city lines. The estate overlooks a very large park, and is surrounded by trees. Pretty and convenient cottages with large gardens, for which there is a demand in Guildford, will be built, and occupiers will be able to purchase the freehold of their cottages. Already two pairs of cottages have been bespoken, and the scheme promises to be a success.

"North Devon and West Somerset".

With reference to the notice, in a recent issue, of the book upon "North Devon and West Somerset," published by the Homeland Association, the observation on the supposed absence of maps appears to have been superfluous, for we are informed by the publishers that two maps are supplied with this book. They will be found in the pocket at the end of the volume. Doubtless our reviewer had not discovered them.

The Lighting of Victoria Street.

The new system of lighting Victoria Street by high pressure gas lamps, each of 2,000 candle-power, has now been completed, and the Westminster City Council are to be congratulated on the result. When the installation of modern gas lamps has been completed in Regent Street, Pall Mall, Piccadilly Circus, and Shaftesbury Avenue, London will make a far better comparison with Berlin and Paris in the matter of street lighting than ever before.

The King's Gift to Crathie Church, Balmoral.

As a memorial to King Edward VII., King George proposes to erect in Crathie Church, Aberdeenshire, a new communion table of Iona marble, behind which will be an oak screen, richly carved and canopied, the whole resting on a base of granite. The design is by Messrs. A. Marshall Mackenzie and Sons, architects, of Aberdeen and London.

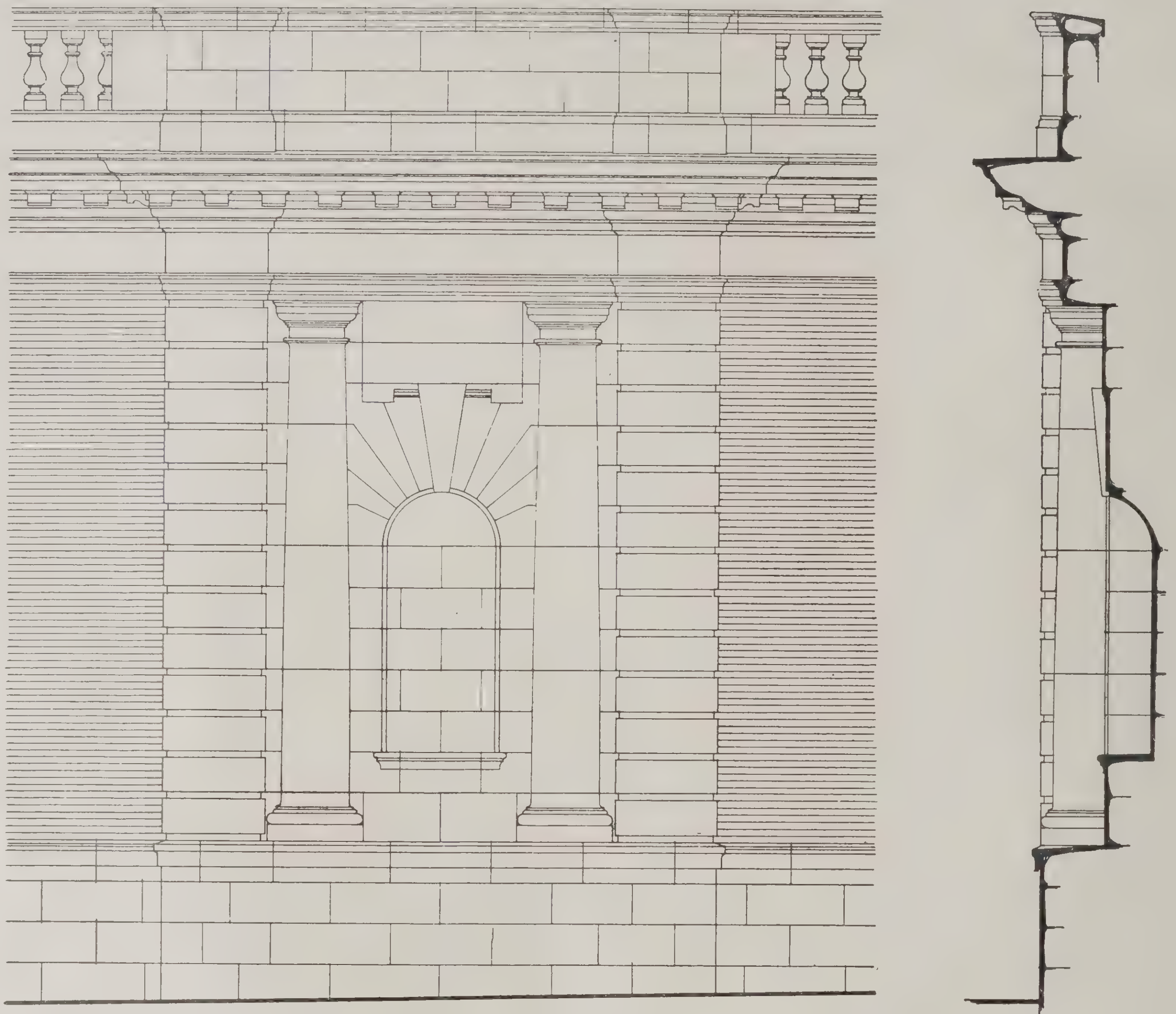
Hanover Chapel, Peckham.

The Hanover Chapel (which is to be demolished) and its site at the corner of Rye Lane and High Street, Peckham have been sold for £12,000. Pending the erection of a new chapel, the congregation will use Collyer's Memorial Hall for their services.

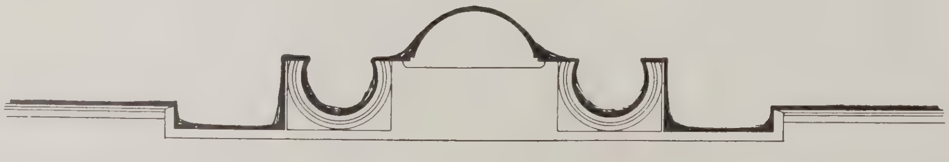
New By-laws for Romsey.

At a recent meeting of Romsey Board of Guardians, Mr. White brought up a set of building laws considered by a committee and framed and amended on the model by-laws, the alterations being almost entirely of a sanitary character, and having to do with water, drainage, cesspools, and ventilation. He remarked that 17 out of the 21 District Councils in the county had adopted by-laws, and three others were considering them. The new by-laws were adopted by a vote of six to four.

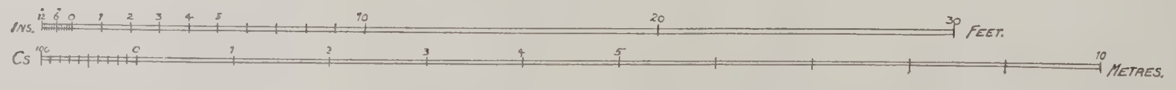
We are informed that the Christ Church Schools, Folkestone, are being supplied with Shorland's patent warm air ventilating Manchester grates by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.



Elevation. *Section.*

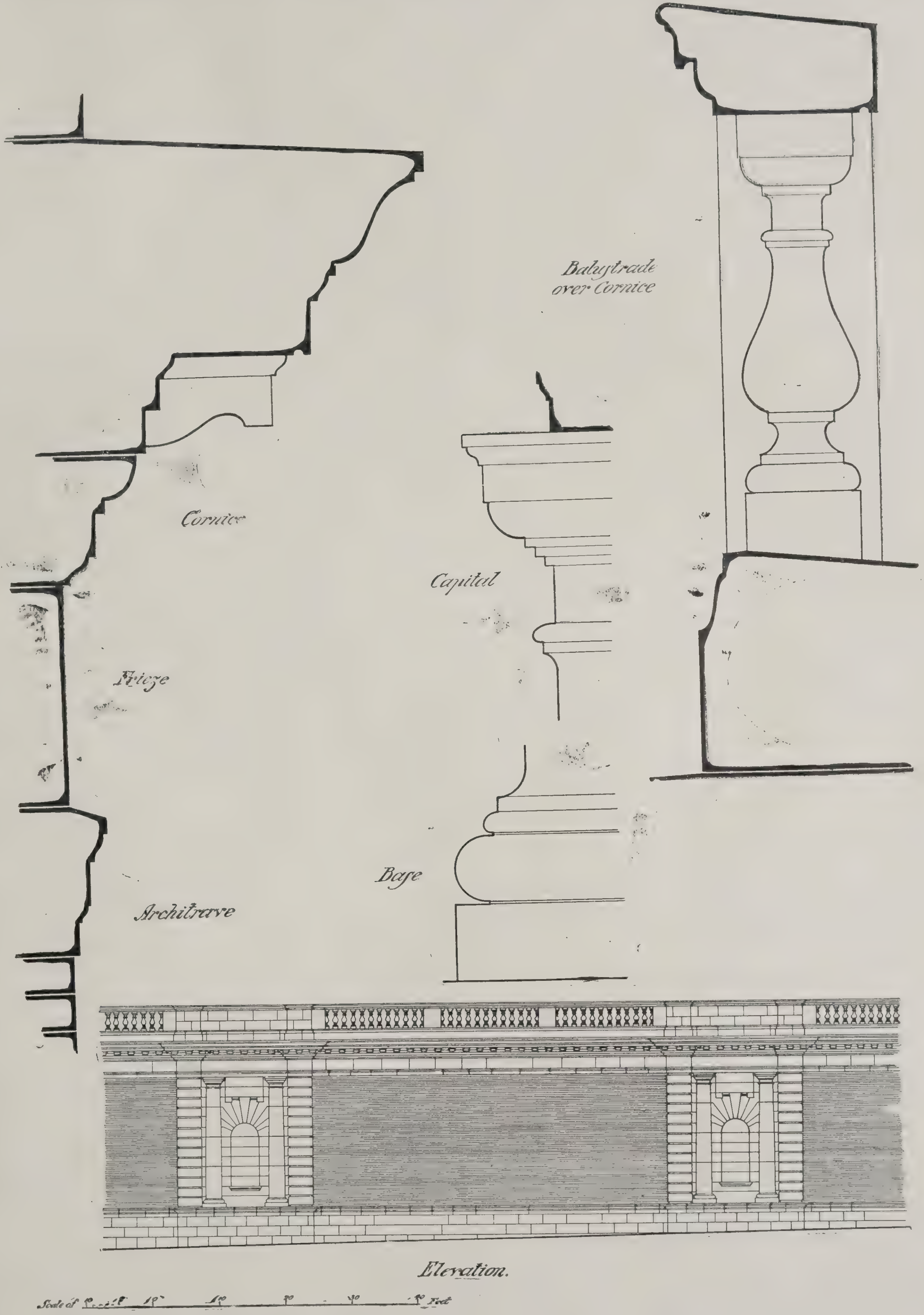


Plan.



This wall is carried below ground level through spongy subsoil and underlying water-logged ballast to the blue clay, at a varying depth, averaging 25 ft. below rail level in the station. The materials used are Portland stone and red hand-made sand-faced bricks from the Reading district. Messrs. J. Mowlem and Co., Ltd., were the contractors.

BAY OF SCREEN WALL, VICTORIA STATION, LONDON.



SCREEN WALL, VICTORIA STATION, LONDON: DETAILS.

NEW BUILDINGS.

PROPOSED AND COMPLETED.

Blackpool.—The Town Council have decided to complete the widening and improvement of the promenade between the North Pier and the Claremont Esplanades. Alternative schemes, either of which will cost about £40,000, are now under consideration.

* * *

Burnley.—The Burnley Town Council have accepted the tender of Messrs. Macdonald and Deakin, of Victoria Street, Westminster, to construct a reservoir and other waterworks at Hurstwood and Cliviger, for the sum of £158,828. The reservoir is to have a capacity of 320,000,000 gallons, and the cost of the whole scheme, including land and pipe-line, is £220,000. Mr. Diggle, of Heywood and London, is the engineer.

* * *

Cardiff.—The foundation stones have been laid of the new Salem Methodist Church, Canton, Cardiff, which is in course of erection at a cost of £4,300. The building is situated at the corner of Market Road and Cowbridge Road. It is designed in Perpendicular style. At the rear of the church is a large schoolroom, with four classrooms, retiring rooms, and a kitchen. The buildings will be heated throughout with hot water and lit with electricity. The roof will be of open timber, the woodwork being of pitchpine and mahogany. The windows will be of cathedral-tinted glass. The church will provide accommodation for 550 persons, and the schoolroom for 150. Messrs. Habershon, Fawckner and Co., High Street, Cardiff, are the architects, and Mr. James Stephens, Brunswick Street, is the contractor.

A new Parish Hall and Institute in Wyeverne Road, St. Andrew's Parish, is in course of erection at a cost of about £2,200. The main hall will be capable of seating 400; while there will be two classrooms, each seating 80 persons in addition to two smaller rooms, kitchen, and storage rooms.

* * *

Chatteris (Hunts.).—The Parish Church of S.S. Peter and Paul, Chatteris, has been re-opened on completion of the work of restoration and rebuilding. In October, 1908, a contract was signed with Messrs. John Thompson and Co., of Peterborough, to carry out the restoration to the designs of Sir Arthur Blomfield and Sons, London, at a cost of £7,360. The chancel, north and south aisles, have been taken down and rebuilt. An examination of the tower showed that there were no foundations, and besides re-pointing and underpining this part of the fabric, new 7ft. concrete foundations have been laid all round the church. The nave has been extended by the addition of north and south aisles. A heating chamber has been erected, and the apparatus is on the radiator system, installed by Mr. W. F. Spencer, of Oldham. The new altar and altar rails have been executed in Australian oak, whilst the gangways of the nave and aisles have been laid with oak blocks, and the remainder of the floor with deal blocks. The church roof, which was formerly a lead flat, has been restored to its original pitch, and entirely covered with red tiles. Several of the old windows have been restored and refixed. In the north chancel aisle the organ has been re-erected. The whole of the new wrought stonework has been executed in Weldon stone, and a quantity of Yorkshire stone has also been utilised. Since the original estimate was prepared it has been found necessary to expend a further £800 on clergy and choir vestries, the south porch, rood staircase, and belfry staircase. The work of restoration has also included the re-hanging of the church bells. A new framework was inserted, the bells were returned and re-hung, and a tenor bell weighing 11 cwt. has replaced the treble, this work being carried out by Messrs. John Taylor and Co., of Loughborough. Seating accommodation is now provided for 700.

Cradley Heath.—The foundation stones have been laid of new Sunday schools, which are in course of erection in the Dudley Wood Road, Cradley Heath, at an estimated cost of £2,500. The buildings will accommodate about 800 children.

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Dudley.—The High School for Girls in Priory Lane, Dudley, which has been erected at a total cost of £23,000, is a handsome brick building with heavy stone dressings. It is pleasantly situated, being in full view of the old castle ruins and of the wooden slopes of the Wren's Nest. It comprises a large assembly room, designed by pupils of the Guild of Arts and Crafts, eleven class rooms, physical and chemical laboratories, mistresses' rooms, and caretaker's apartments. The grounds are to be laid out, and will be surrounded by terraces. The school is to accommodate 250 scholars. Four-sevenths of the total cost is provided by the Staffordshire County Council.

* * *

Glasgow.—The new buildings of the Glasgow and West of Scotland Technical College, the largest in the kingdom devoted to education, have now been completed at a cost of about £350,000. The building scheme was inaugurated in 1901.

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Gosport.—The new Nicholson Memorial Hall has been completed, and was erected at a cost of about £2,100, inclusive of site. The building occupies a corner site beside the Bury Arch at the junction of Stoke Road and St. Andrew's Road, and consists of a main hall 43ft. by 27ft., and two smaller halls, each 27ft. by 25ft. The building, which has a red brick elevation and tile roof, provides accommodation for 210 scholars. Messrs. Lawson and Reynolds, Bournemouth, are the architects.

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Grangetown (Sunderland).—Mr. James Knott, M.P., has laid the foundation stone of St. Aidan's Church, Grangetown, Sunderland. Only the first part of the new church is now being built. The edifice is designed in the Perpendicular Gothic style, and will be faced with Lincolnshire bricks. It will have arcades of red Dumfries stone with moulded bases and caps of octagonal piers. The walls are to be plastered inside, with a wood dado panelling under the aisle windows. The roof will be covered with red Staffordshire tiles and panelled inside. A bell turret covered with green Westmorland slates will be erected on the west end of the nave. The completed church will accommodate 675 persons, but the present scheme comprises nave, north aisle, and porch. A temporary vestry and chancel will be formed at the east end and there will be seating accommodation for 345 persons. Mr. C. Hodgson Fowler, F.R.I.B.A., F.S.A., of Durham, is the architect.

* * *

Lincoln.—The foundation-stone has been laid of the new Children's Home for the Lincoln Guardians. Messrs. Mortimer and Son are the architects, and the contractor is Mr. T. Elmes, of Gainsborough.

* * *

London, S.W.—A new picture palace is to be erected on an important site with a frontage of 113ft. 6ins. to Kew Bridge Approach on the Middlesex side. A prominent feature will be the main entrance, surmounted by a dome, with the principal lines of the building picked out with electric lamps. Messrs. Palgrave and Co., 28, Victoria Street, S.W., are the architects.

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Pontefract.—Application is to be made by the Corporation to borrow £10,000 for a new elementary school.

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Pudsey.—A Local Government Board inquiry has been held at Pudsey into the proposal of the Corporation to spend £7,500 upon the improvement of the Town Hall. It was stated that the Corporation proposed to concentrate all the public work under one roof. Provision will be made for the police court, magistrates' rooms, and Council Chamber, and the Victoria Hall will be enlarged to accommodate about a thousand persons. The inspector expressed himself as favourable to the proposals.

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Ribchester (Preston).—The Preston Board of Guardians have decided by a majority of one vote to carry out a scheme of improvement and extension at Ribchester Workhouse, at a cost of £18,000.

* * *

Southampton. — The Polygon Baptist Church and Schools, Southampton, which have been recently completed and opened, have been designed in late Gothic, freely treated. The buildings have been carried out for about £6,500, by Mr. J. Nichol, of Bitterne Park, Southampton, from designs by Messrs. George Baines and Son, architects, 5, Clements Inn, Strand, London.

* * *

Southend-on-Sea.—The Town Council has approved the following plans:—Two houses, Shaftesbury Avenue; six houses, South Avenue, Southchurch; shop and house, Leigh Road West; eight houses, Beedell Avenue; house, Ramuz Drive; three houses, Grand Drive; four houses, two in Tintern Avenue and two in Southview Drive; bungalow, Lord Roberts Avenue; additions to church, Park Road; three houses, Hainault Avenue; forty-eight houses, Trinity and Lime Roads; bungalow, Silverdale Avenue; four houses, Stornoway Road; house, Sea View Road; two houses, Westborough Road; two houses, Southview Drive; two houses, Main London Road; two houses, Park Road; alterations and additions, Carlton House, Winton Avenue; six houses, Hildaville Drive; two houses, Sandowne Avenue; two bungalows, Glenwood Avenue; seven houses, Rayleigh Avenue; ten houses Plas Newydd; two bungalows, Uplands Road; two houses, Kilworth Avenue; house, Burges Road, Thorpe Bay; house, Eastwood Road; two houses, Eastwood Lane; six houses, Southborough Drive; two houses, Beach Road; four houses, East Street; two houses, Wenham Drive; six villas and stable, Bryant Avenue and Winter Avenue; stable in Southchurch Beach Road; six houses, Sutton Road; house, Macdonald Avenue; two houses, Burges Road; nine houses, Branksome Road; four houses, Leigh Road East; two houses, Harcourt Avenue.

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Sunderland.—It is proposed to erect a new school for boys at a cost of £13,500, and to leave the present school for girls. Plans have been prepared by Mr. G. T. Brown.

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Torquay.—A Local Government Board enquiry has been held by Mr. A. A. G. Malet, M.Inst.C.E., at the Town Hall, into applications of the Town Council for sanction to borrow sums amounting altogether to £9,400, consisting of £5,150 for the purchase of the Plainmoor field for a recreation ground, and the adjoining Homelands property as a site for a public elementary school, and £4,250 for improvements in connection with the St. Marychurch Gasworks.

* * *

Wheatley Hill (Durham).—The new hall erected and furnished at a cost of £1,700 by the miners of Wheatley Hill has been formally opened on completion. The building consists of committee rooms, a retiring room, and a kitchen, in the basement; and a large hall with gallery and permanent platform on the first floor. Mr. James Garry, F.R.I.B.A., West Hartlepool, was the architect, and Mr. John White the contractor.

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Wilmslow.—Mr. Courtney Clifton, Inspector for the Local Government Board, has held a public inquiry at Wilmslow respecting the Council's application for sanction to borrow £2,500 required for a new fire station, ambulance headquarters, and general depot.

NATIONAL FEDERATION: CONFERENCE OF SECRETARIES.

The annual Conference of Secretaries of the National Federation of Building Trades Employers of Great Britain and Ireland was held on October 19th, at the Victoria Hotel, Manchester.

Councillor S. Smethurst, who presided, said, in the course of his opening address: My first word must be one of hearty welcome to you, and to express the great gratification it is to me to meet a body of men who are so intimately bound up with the success of the National Federation of Building Trade Employers of Great Britain and Ireland, of which I have the honour this year to be President.

I feel the difficulty of presuming to address you in respect to a business of which many of you have a very much wider knowledge than I can possibly have. Still there are one or two points in reference to your calling as Secretaries of Branch Associations and Federations I would like to say a word or two upon.

First, may I emphasize the importance I attach to a good secretary in the growth and development of our Federation and Associations. Next to a thoroughly earnest unselfish, and energetic member of an Association, and I am not sure whether I ought always to make this exception, the most important man is the secretary. He is, or ought to be, the brain and hand which is continually watching its interests and guiding its movements. It is his business, and if he performs it rightly, his position enables him to bring great advantage to his members and profit to himself, for there are continuously happening things, which in the hands of an alert secretary may be shaped for the benefit of his members, and the good secretary is watchful of every opportunity of doing and suggesting things which are for their mutual good.

For instance, as a capable man thinks out the possibilities that may be gained by the complete combination of his members, he will find that there are benefits yet undreamt of by many to be gained; and he set apart for this work, may have the whole affairs of his organisation always under observation and control, and being impartial as between one member and another, and between one section of members and another, he can propound schemes for their (the members') mutual good without being under the imputation of serving personal or selfish ends. A branch of which every member of any importance in the trade is a member offers many occasions in relation to clients, workpeople, architects, surveyors and public authorities, which a capable secretary, feeling his power, and with a moderate exercise of it, may turn to the undoubted advantage of his members. He, if he has risen to the true meaning of his office, will be the one man who is watching all the possibilities of the situation and constantly bringing proposals before his committee for their endorsement or otherwise.

A necessary quality in the man I desire to see as secretary everywhere is, enthusiasm—that enthusiasm which in all callings puts a man at the top of his profession. But apart from mere professional enthusiasm, I think these organisations which are so closely related to the industrial life of the nation, if wisely handled, may be immense factors in the right shaping of the industrial concerns of our country, eliminating injustice on every side and substituting argument and reason for brute force.

Our Conciliation Boards are only in their infancy, but if carefully guarded they are bound to be of incalculable advantage to every interest concerned. Much good has already accrued, but more remains to be reaped.

From those who have not got all they wanted through their agency, there has at times been almost violent criticism, but that is incidental to every new movement, and need not be taken too seriously; but I do bespeak from you secretaries a friendly interest in their welfare, and that you do all you can to cherish them and perfect them, so that they may the better serve the end they were brought into existence for.

It will be seen that my idea of a secretary is not that perfunctory individual who thinks that his only work consists in taking a few minutes, writing a few letters, and carrying out the instructions of his committee, and leaving to them (the committee) all initiative and action. Under such circumstances little of real progress in our movement is to be hoped for.

In a final word may I say that the man who throws himself enthusiastically in this movement reaps ultimately the great reward. If he does his work well, he gets more members, and so more funds. Also, if he does his work well he becomes indispensable, and so commands, and I am sure will always get, the best scale of payment for what he does. I trust you may have a very successful Conference, and that you may leave it inspired by the possibilities that are in your hands.

The meeting then resumed the discussion of a paper read by Mr. Thos. Smith (Sheffield) at the last conference, on "The Mixed Clauses for dealing with conciliation and disputes which exist in working rules as survivals from a period anterior to the National scheme of Federation."

Mr. Thos. Smith said that since his paper was read last year there had been considerable experience of the working of these rules. Everything suggested in the paper had been done, and it only remained for him to deal with the objection raised in the paper. This he briefly did, and he concluded by remarking that his sole object was to bring the local rules into line with the conciliation rules.

The Chairman thought there was no difficulty in the position. It was an understood thing that the local rules did not set aside or override the rules of the Conciliation Board.

Mr. Amphlet found the matter so simple that he was amazed to find that anyone should think it necessary to discuss it at such length.

Mr. J. Davidson (Yorkshire Federation), in view of the fickleness of workmen, strongly deprecated the lightly throwing away of preconciliation board procedure, and urged the importance of retaining it as a second line of defence.

Mr. A. G. White, Mr. McFarlane, Mr. Moss having joined in the discussion, Mr. Amphlet proposed, "That the local associations be requested so to alter their rule in the working rules as to the settlement of disputes, as to come into harmony with the Conciliation Board rules." This was accepted by Mr. Smith and adopted by the meeting.

Mr. Dean re-introduced the question of a national insurance scheme, the discussion on which had been adjourned from the last annual meeting.

The Chairman suggested that so large a question should be referred to the Federation, and after discussion, this course was adopted.

Mr. R. Budd then read a paper on his system of standardising builders' accounts. This was discussed by Mr. Glenton, Mr. Cameron, Mr. Davidson, Mr. Woolley, Mr. Sykes, Mr. Vose, Mr. Moss, and Mr. Woods, and a vote of thanks was passed to the reader of the paper.

Mr. Bertram B. Moss (Liverpool) read a paper on "The Advantages of a Reference List about Architects, Surveyors, Clerks of Works, etc." After discussion, the following resolution was carried: "That having heard Mr. Moss's account of the reference list in use at Liverpool, this meeting is of opinion that it is advisable that such reference list should become general in the Federation, and that the secretaries present pledge themselves to bring the matter before their respective associations at an early date; and also that the matter be brought before the secretaries not present at this meeting.

Mr. A. G. White's paper on "The Need for a more Efficient Means of Ascertaining the Opinions and Wishes of our Members" resulted, on the suggestion of Mr. Moss, in the formation of a small committee to consider the suggestions put forward by Mr. White. The committee consists of Messrs. Moss, Davidson, Amphlet, Smith, Woolley, and Hope.

It was decided to hold the next meeting in London.

COMPETITIONS.

Eccles Baths Extension.

The Baths Committee, subject to the approval of the Council, have resolved to appoint Mr. Ernest Woodhouse, assessor in this competition.

Donnybrook Hospital for Incurables.

The Building Committee, having taken into consideration a letter addressed to them by twenty-three architects with reference to the conditions of this competition, have decided to extend the time for the delivery of designs to February 1st, 1911; that the general scale shall be altered to 16ft. to the inch; and that the margin of allowance on competitors' estimates of cost of alterations in the existing buildings shall be increased to 15 per cent. Other suggestions put forward in the letter—such as that the assessor should be sole adjudicator, and that a site plan should be provided, the committee decline to adopt.

LIST OF COMPETITIONS OPEN.

NOV. 5. JAN. 14, 1911. TREVOR SQUARE ESTATE, KNIGHTSBRIDGE. With respect to this competition, we are asked to say that applications are not being dealt with at the Trevor Estate, full particulars having been advertised on October 15.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—Particulars in our issue for October 19th.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in our issue for October 12.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE. Particulars in our issue for October 12.

DEC. 1. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12.*

[*The Council of the Society of Architects recommend to their members "the desirability of not competing." Also the Secretary of the R.I.B.A. asks us to print the following notice: "Particulars of this competition have reached the Competitions Committee so late that they do not feel justified in recommending the Council of the R.I.B.A. to debar members from competing, as they otherwise would have done, but they desire to point out that the conditions are very unsatisfactory."

DEC. 14. DOUGLAS (ISLE OF MAN.—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

FEB. 1, 1911. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

MARCH 15, 1911. THEATRE AT SAN SALVADOR. A competition, open to the architects of all countries, is announced in connection with a projected new theatre at San Salvador. The author of the first premiated design is to receive 8,000 francs, and 4,000 francs will be awarded as a second prize. Particulars in our issue for October 26.

The contract for the new reinforced concrete jetty at Bedenham for the Admiralty has been awarded to Messrs. J. Moran and Son, Ltd., of Westminster.

FEDERATION NEWS.

National Federation of Building Trades Employers.

The quarterly meeting of the Administrative Committee was held on October 11th, at the new offices of the Federation, Koh-i-Noor House, Kingsway, W.C.

A deputation was appointed, consisting of the officers of the Federation, to confer with the Council of the Association of Municipal and County Engineers on the subject of the appointment of independent arbitrators in municipal forms of contract. The conference was fixed for October 29th.

The report of the deputation, consisting of the President, the senior Vice-President, and Secretary of the Federation, which conferred with the Chancellor of the Exchequer on October 6th, was considered and approved. The conference having been already fully reported in the press, need not be repeated here. Several fresh points have been brought to the notice of the president. He undertook to lay them before Mr. Lloyd George by letter. It was reported that special efforts were being made to improve the organisation in the Chatham and Maidstone district, and that the president had promised to deliver an address there on October 31st.

Enquiries to hand indicated that a revival of interest in the work of builders' associations was occurring in Llanelly and Weymouth.

It was decided that the secretary should attend a meeting of the International Committee at Brussels on October 24th, when further consideration was given to the constitution of the proposed International Federation, and to the arrangements for the next International Congress at Milan in 1911.

In view of the intention of the Government to introduce legislation for providing a scheme of unemployment insurance applicable to the building trade, and having regard to the already heavy and ever increasing cost of workmen's compensation insurance, a resolution was passed calling attention to these facts, and to the need there is for some relief of the burden of the latter insurance, before imposing a scheme of unemployment insurance on the building trade, and the secretary was instructed to forward a communication thereon to the Secretary of State. The matter will be further considered at next meeting.

Consideration was also given to suggestions for amending clause 30 of the agreed form of contract, with the view to securing more prompt settlement of contract accounts. The matter will be further considered at next meeting.—A. G. White, Sec.

Yorkshire Federation.

The monthly meeting of the Executive Council of Yorkshire Federation was held at the Builders' Exchange, Cross Burgess Street, Sheffield, on October 20th. Councillor W. G. England, J.P. (president) occupied the chair, and was supported by Mr. E. J. Brown (ex-president National Federation), and Mr. A. G. White (secretary of the National Federation), and fifty-six delegates from the affiliated associations.

The president reported that since the last meeting the treasurer of the Federation, Mr. W. T. Ledgard, of Leeds, had sustained a heavy bereavement by the death of his father. An official resolution of condolence had already been conveyed, and he was sure that every member would sympathise with Mr. Ledgard.

The treasurer pointed out that the next meeting would be the last one of the financial year, and that the subscriptions to date were less than last year. He appealed most earnestly for this matter to receive urgent consideration.

Post Office Contracts.—The secretary reported that a trade member who had supplied information with respect to his experience of post office contracts had complained that a clerk of works had been communicating with one or two sub-contractors to endeavour to ascertain from which source the information had been sent. A letter was promptly forwarded to the secretary of H.M. Office of Works pointing out that the information had been supplied on definite official assurances that no contractor would be prejudiced, and the Federation were very desirous of maintaining good faith with those who had given their consent for the information to be given. A letter was read from H.M. Office of Works asking for further particulars to be furnished.

Unemployment Insurance.—It was reported that a copy of the notes on this subject read at the last meeting had been supplied to each delegate and secretary of local associations.

West Riding County Council Fair Trades Clause.—Further correspondence was read with the contractor for the joiners' work for the Bingley Training College with respect to the rate of wages payable at Bingley, and its connection with the West Riding fair trades clause. The matter was left in the hands of the president, Mr. Forsdike, and the secretary, and they were empowered to take such action as in their opinion is necessary or expedient.

Issue of Quantities When Inviting Tenders.—A letter was read from the clerk of the East Riding County Council stating that the East Riding Education Committee had decided to take out quantities for all building work which is likely to exceed the sum of £400.

It was reported that an architect, on behalf of the Normanton Urban District Council, was inviting tenders for erection of dwelling houses for working classes, for which a loan of over £7,000 had been sanctioned, and that the advertisement required builders to inspect plans and give tenders without quantities being issued. A letter had been sent to the architect requesting him to conform with the usual practice, but no reply had been received.

Town Planning and Owners of Land.—A discussion took place as to the position of owners of land under town planning schemes. It was pointed out that Section 54 of the Housing Town Planning. etc., Act (1910) authorises a local authority to prepare a town planning scheme either on their own initiative or to adopt one proposed by all or any of the owners of land. The regulations of the Local Government Board require a local authority in the first instance to make an application for permission to prepare a plan. When the formalities in connection with this stage have been complied with, notice has to be served on the owners of all land proposed to be included in the scheme. The area included must be shown on a map specially prepared for that purpose, giving the lines of the principal roads. When this is done, a meeting of the various owners and persons interested has to be convened. The preliminary proposals are then submitted to the Local Government Board, and if approved, permission will be given for detailed plans to be prepared. The full scheme has to be subsequently submitted to the Local Government Board, and if they intend to approve same, notice of their intention to do so will be published in the "London Gazette," so as to permit any person or authority interested to object within 21 days from the date of such publication. The draft order shall then be laid before each House of Parliament for a period of not less than thirty days, and may be open to amendment. A town planning scheme, when finally approved by the Local Government Board, has effect as if it were enacted in the original Act. The practical effect is that when a scheme complying with regulations is formally approved, owners can only develop their land on the line of the scheme, and on no other. The procedure adopted by the Local Government Board gives several opportunities to owners of safeguarding their interests, but they should be fully alert to take action if necessary, as the different stages progress. Compensation is payable to any person whose land or property is injuriously affected by the making of a town-planning scheme; the conditions in connection with which should be carefully observed and scrupulously followed. On the other hand, betterment may be obtained from owners whose land shows appreciation in value in consequence of and arising out of the scheme.

Town Planning Conference.—The president reported that he and Mr. Sinclair had attended the conference on town planning arranged by the R.I.B.A. Mr. Sinclair called attention to the procedure in connection with town planning followed on the Continent, whereby the allocation to owners of developed land is based on the proportion and position in which the undeveloped land was held by each owner. The heavy cost of land, consequent on expensive town planning, had resulted in artisans being housed in large tenements, and separate dwellings for artizans were totally unknown in continental cities.

Domestic Supply Service.—A letter was read from the National Federation with respect to the Board of Trade Arbitration proceedings at Leicester, and the decisions of the arbitrator on demarcation of work as between plumbers and domestic engineers. In that case he had decided that:—"All lead work in connection with hot and cold water domestic (or other) supplies or services shall be plumbers' work. All domestic waste, soil, or ventilation pipes above ground, from w.c.'s, baths, lavatories, sinks, or other sanitary conveniences or appliances, shall be plumbers' work. All other work in connection with ventilation, heating, warming, laundry, cooking, and general hot and cold water domestic (or other) supplies or services, in which iron, brass, copper, or other similar hard metal piping is used, may be done either by hot-water, heating and ventilating engineers, filters, or by plumbers, as may be provided in plans or schemes prepared by hot-water, heating, and ventilating engineers, or by master plumbers or others." It was moved by Mr. A. J. Forsdike, seconded by the Lord Mayor of York, that the decision be recommended to the most careful consideration of local associations as a likely basis of demarcation as between plumbers' and domestic engineers. An amendment was moved by Mr. C. Hodgson, seconded by Mr. E. Broley, that the Federation defer further consideration until the decision of the Institute of Plumbers, Ltd., is known. On being put, the amendment was lost, and the original motion carried by a large majority.

National Administrative Committee.—The president reported that a meeting of the National Administrative Committee had been held in London on October 11th, when the resolution of the Yorkshire Federation on unemployment insurance was brought forward, but consideration was deferred until the January meeting.

National Federation—Finance Act.—Attention was drawn to the official recognition of the National Federation by the Chancellor of the Exchequer by his requesting a deputation of the Federation to discuss with him how the administration of the Finance Act was likely to affect builders. It was felt that mutual benefits accrued from the interview, and that recent official acknowledgements of the Federation as representative of organised building employers will enhance its official standing, and advance its prestige.

Mr. E. J. Brown expressed his pleasure in being present, and felt that the Building Trade were under a debt of gratitude to the officers of the National Federation for the impression they had made on the Chancellor of the Exchequer, and the valuable official concessions obtained. The official notes of the interview were being printed, and would be circulated for the guidance and information of members.

Wallace v. Douglass.—A letter was read from the Institute of Plumbers, Ltd., protesting against the Federation giving financial assistance in connection with an appeal in the above case. Correspondence with Mr. Hope as to the value of a decision was also read and considered. It was resolved that the Institute of Plumbers, Ltd., be informed that they are under some misapprehension as to the spirit in which the National Federation has approached this matter, and the desire to obtain a definite and reliable judicial interpretation in the interests alike of contractors and sub-contractors. The appeal was supported by the National Federation on account of its involving questions of vital principle affecting all members, irrespective of the merits of the matters which had arisen between the plaintiff and defendant.

Circular to Architects on Trade Matters.—A reply was read from the Leeds and Yorkshire Architectural Society practically accepting the proposals put forward in the recent circular.

Conference of Secretaries. — It was reported that the annual conference of secretaries had been held at Manchester on October 19th.

Hull Plasterers' Joint Committee.—Mr. A. G. White, National Secretary, reported that the negotiations in this matter were still progressing, and it was hoped that a settlement would be arranged at an early date.

Legal Value of Working Rules.—Mr. Marshall, of Dewsbury, stated that one of their members had recently been subject to heavy deductions from a day-work account, probably based on objection to pay for walking time as provided in the working rules. It was pointed out that the production of the rules would be accepted as evidence of obligation and custom in a court of law.

Next Meeting.—Invitations were extended to the Federation to hold the November meeting at Bradford and Grimsby. It was ultimately decided to hold the meeting at Bradford on Thursday, November 17th.

At the conclusion of the business meeting, light refreshments were kindly provided by the Sheffield Association. Members subsequently visited the Building, Sanitary, and Allied Trades Exhibition, held in the Artillery Drill Hall,, Sheffield, and were much interested in the range and quality of the exhibits. Tea was provided for delegates and members by Mr. W. Longden, the president of the Sheffield Association, to whom a hearty vote of thanks was tendered for the excellent arrangements made and generous hospitality extended.—J. Davidson, Secretary.

Building Boom in New South Wales.

Mail advices from Sydney, New South Wales, state that in the city and suburbs August was an exceptionally good month from the industrial point of view. The building trades are still enjoying an exceptionally busy time, and prospects appear to be excellent for some time to come. Stonemasons, bricklayers, brickmakers, and brickcarters, plumbers, house carpenters, and joiners have all had a busy month, and an unemployed man in any of these trades is just now a rarity. Plasterers, house painters, and decorators are also very busy; and it not overstating the case to say that employment was never better in the building trades. First-class labourers and navvies are hard to obtain, and several of the railway construction jobs are at present short-handed. The iron trades had a busy month, all branches being well employed. Sawmills and timber yards were going at full pressure, and will continue so while the building boom lasts.

COMING EVENTS.

Thursday, November 3.

University College, London.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: the Later Mediæval Houses," 6 p.m.

Monday, November 7.

Liverpool Architectural Society.—Felix Clay, B.A., Architect to the Board of Education, on "Beginnings of Art," 6 p.m.

Tuesday, November 8.

Institution of Sanitary Engineers.—Geo. W. Chilvers on "Practical Heating and Hot Water Supply to Buildings." 7 p.m.

Illuminating Engineering Society.—F. W. Goodenough, Mem. Inst. Gas Engineers, on "Recent Advances in and the Present Status of Gas Lighting." Royal Society of Arts, John Street, Adelphi. 8 p.m.

Thursday, November 10.

University College, London.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: the Coming of the Italian Influence." 6 p.m.

Friday, November 11.

Glasgow Technical College Architectural Craftsmen's Society.—Debate on "The Business Relations of the Architect, Measurer, and Contractor." 8 p.m.

Monday, November 14.

Surveyors' Institution, 12, Great George Street, Westminster.—Opening Address by President, Leslie Robert Vigers, 8 p.m.

Bristol Society of Architects.—G. H. Oatway on "Fountains Abbey."

Architectural Association.—Gerald C. Horsley, F.R.I.B.A., "That Fine Draughtsmanship Conduces to Fine Architecture." 7·30 p.m.

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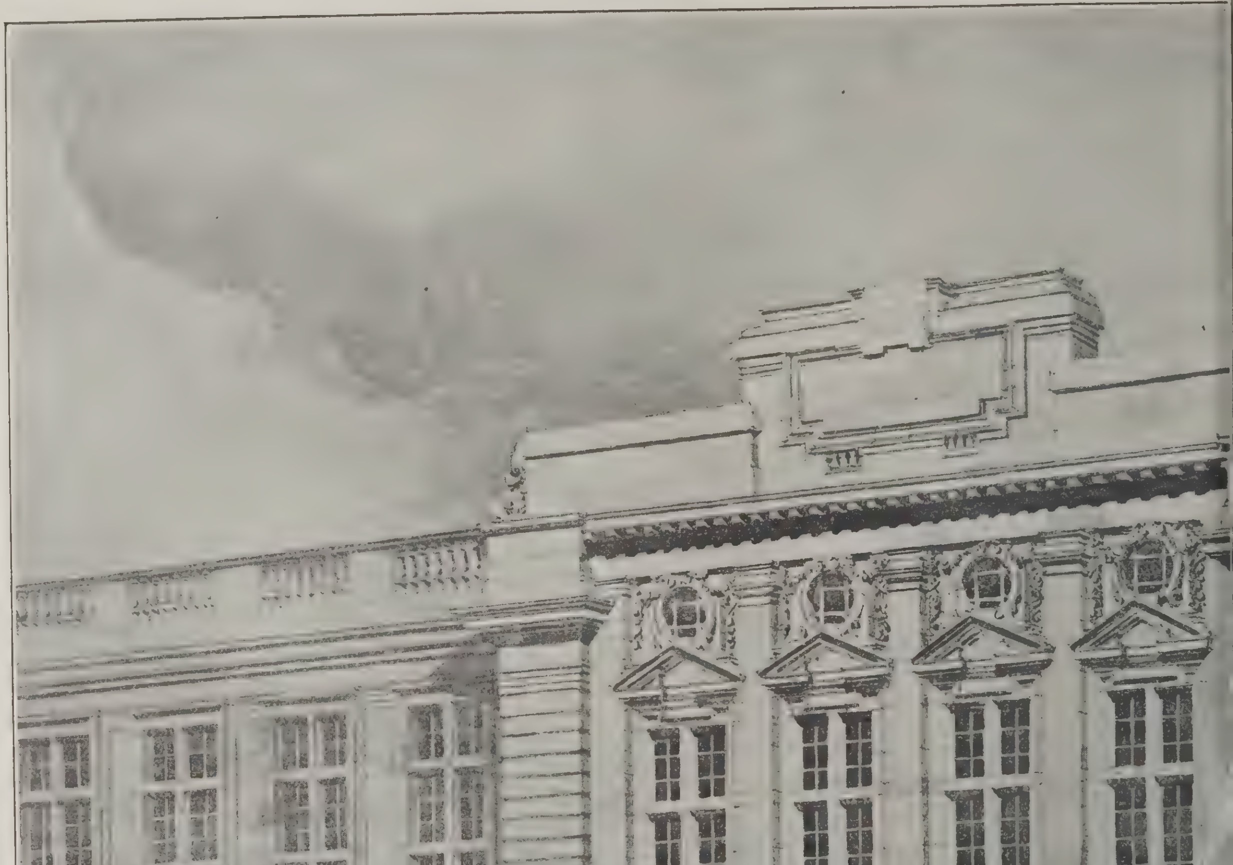

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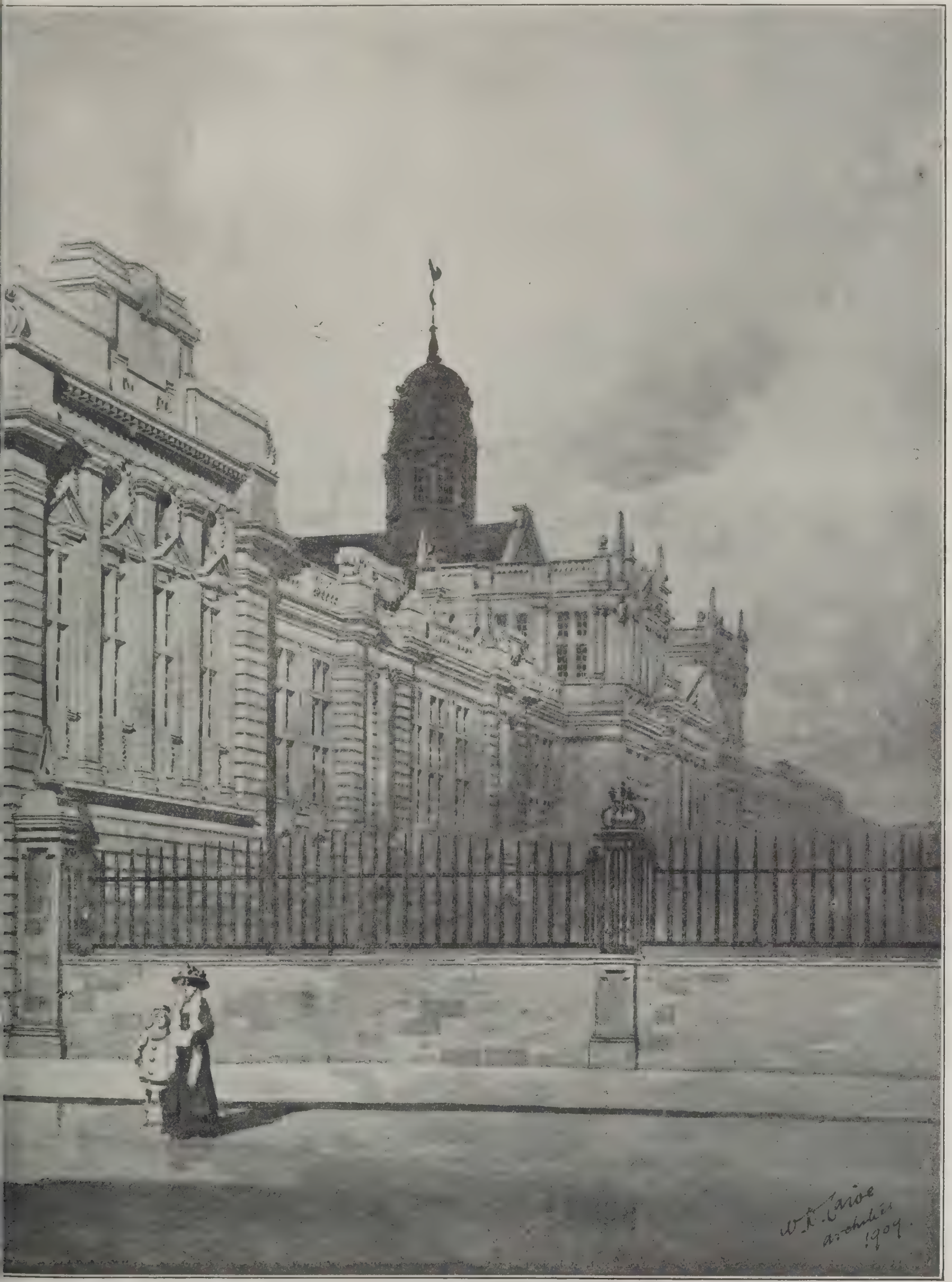

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WEDNESDAY,
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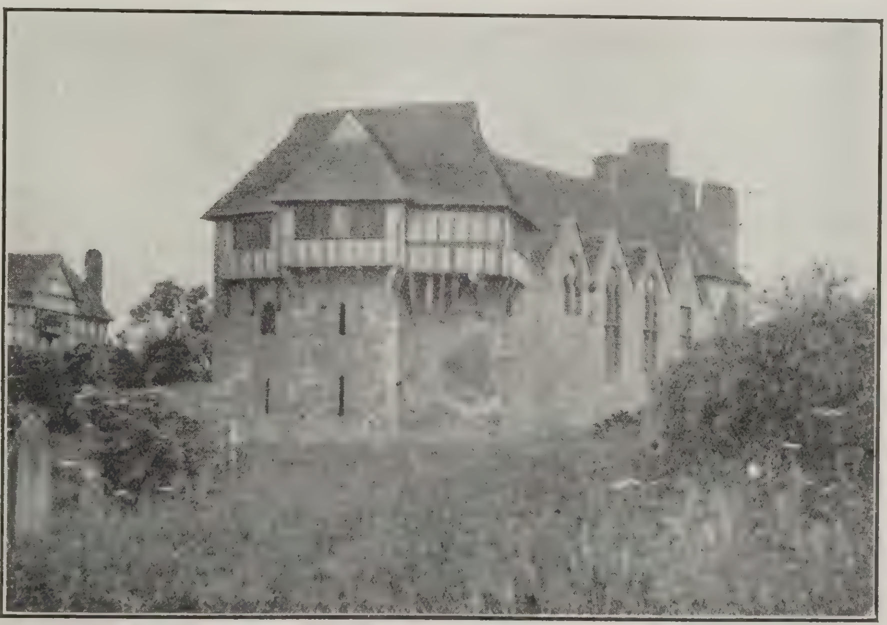
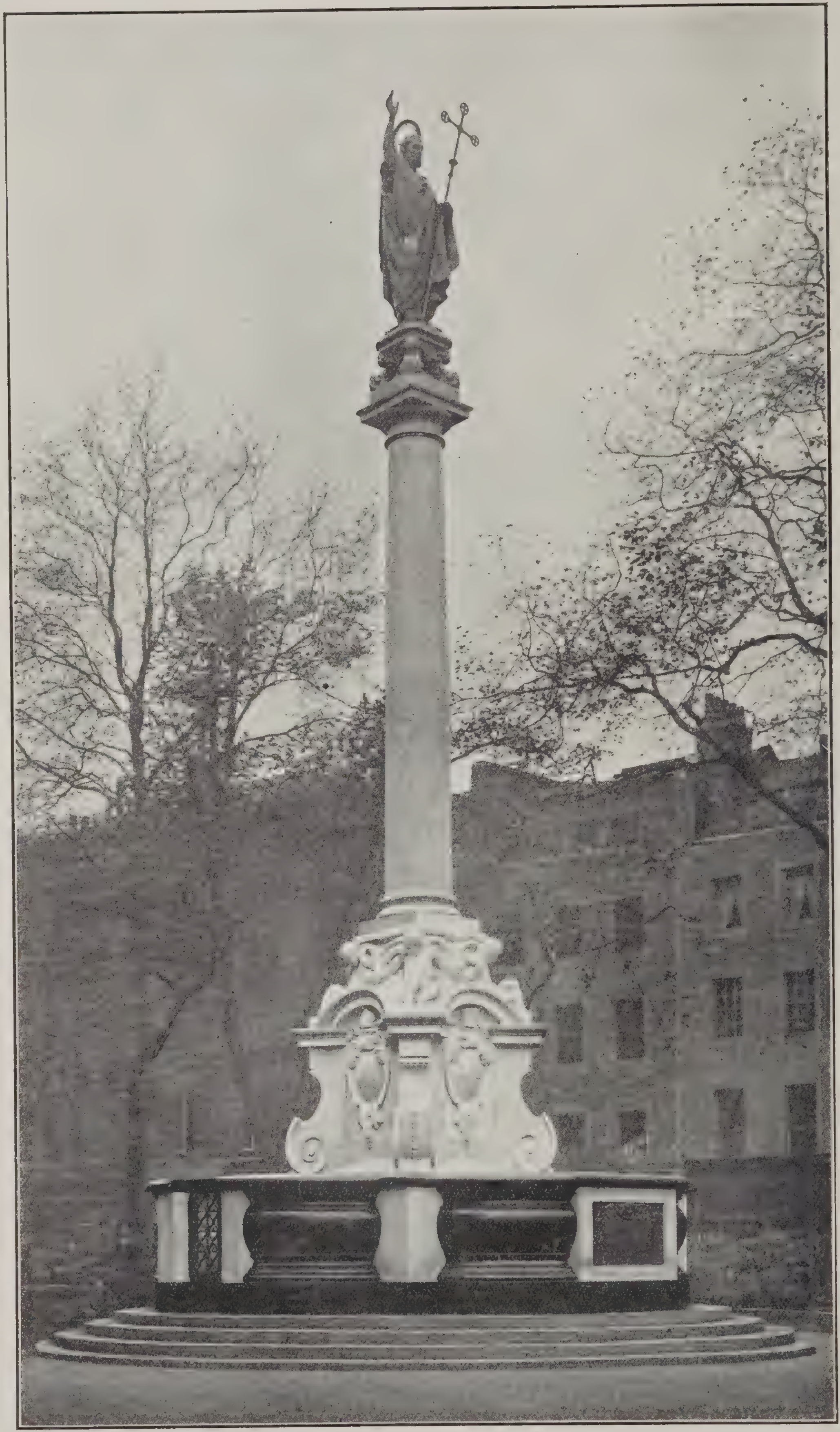


STOKESAY CASTLE.

(An illustration of Mr. J. Alfred Gotch's Lecture on Domestic Architecture, reported in this issue.)



This memorial was dedicated by the Bishop of London last week. It has been erected on the north side of St. Paul's Churchyard, under the terms of the will of the late Mr. H. C. Richards, K.C., M.P., Treasurer of Gray's Inn, who left £5,000 for the rebuilding of the old "Preaching Cross" dismantled by order of the Long Parliament. The total height of the monument is 52 ft., the figure of St. Paul being 9 ft. high. With the exception of the black marble in the surrounding wall, and the bronze figure, panels, and gate, the material used is Portland stone.

THE NEW ST. PAUL'S CROSS. PROFESSOR REGINALD BLOMFIELD, A.R.A., ARCHITECT.
BERTRAM MACKENNAL, A.R.A., SCULPTOR.

THE ARCHITECTS' &
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Note: The List of Contents will be found on Page V of the front advertisements

The Post of First Commissioner of Works.

THE retirement of Lord Morley from the India Office has disturbed the waters, so to speak, and brought in its train, as generally happens in such cases, other changes in the political world. Lord Morley becomes Lord President of the Council; Lord Crewe is moved from the Colonial Office to take his place at the India Office; Mr. Lewis Harcourt quits his position at the Office of Works to become Secretary of State for the Colonies; and Earl Beauchamp succeeds him as First Commissioner of Works.

The last-named appointment is, of course, the only one that specially concerns us; but the announcement of the changes in the papers draws attention once more to the curious anomaly by which an office like that of First Commissioner of Works, which ought to imply some special knowledge and acquirement in connection with architecture and building, and more especially in town-planning, is treated merely as one in a series of political offices, among which eminent politicians are shifted about according as the exigencies of government business and government patronage seem to require. The position of First Commissioner is not supposed to be one of the best places in the gift of the Government; until a comparatively recent period, indeed, it did not carry with it, as it does now, a seat in the Cabinet; and it was obviously and notoriously made use of as a means of finding something for a gentleman who had claims on the Government, but who was not a sufficiently important politician to claim a seat in the Cabinet. And now that this disability is removed, the position is still regarded as a kind of waiting-room until the holder of it can be ushered into something better. A man who is supposed to be a rising politician is given the place as a present compliment, and those who are aware of his political abilities remark —"Ah! he will not be *there* long, you know." Special knowledge or aptitude in regard to architecture seems to count for nothing, and not even to be thought of. We read in the papers as to the appointment of the new First Commissioner, that "he gained experience of public life as Mayor of Worcester, and as a member of the London School Board," and that "from 1905 to 1907 he was Captain of the Gentlemen at Arms, and was made Lord Steward in the latter year." As to any experience he has had which would qualify him to understand the subjects with which the Office of Works has to deal not a word is said, nor do either the public or the Press seem to think any such information necessary.

The only theoretical defence which can be made for such a state of things is that the First Commissioner is supposed to be a personal representative of the common sense of the community in regard to public architecture and public improvements, and is thus to exercise a general control over the professional experts engaged in the department, and encourage them to do the right thing or prevent them from doing the wrong one. It might be replied in the first instance that the public of this country, in regard to architectural questions, has very little common sense to be represented, and requires to be taught rather than to be represented. And at all events the annals of our Public Works operations seem to show that most of our First Commissioners have either had very little common sense themselves in regard to the doings of the office, or that they have been unable or unwilling to control their subordinates. How much responsibility for the way in which things are done really rests with the official head, how much with his professional subordinates, we cannot, of course, tell without knowing the secrets of the office. But it is quite certain that London exhibits the records of a whole train of blunders committed, either under the orders or by the permission of different Commissioners of Works; blunders which unfortunately are permanent in their results, or cannot be effaced except at great cost. The only First Commissioner there is record of for half a century back who seemed both to understand something of his business and to have power to enforce his views, is Sir Benjamin Hall, who held the office about the time of the first great Government Offices competition, and whose sound and trenchant judgments on architectural points are refreshing reading, and prove that he at least knew pretty well what he was about. But we question whether he had any adequate successor. We have had First Commissioners who were nobodies, and did nothing at all. We had the one wonderful example of Mr. Ayrton, who seems to have been appointed to the office because he was a representative Philistine, who thought art was rubbish, who signalised his entry into office by insulting the architectural profession wholesale, and classing them with "market gardeners," and whose great official achievement was to cut down the cost of the Law Courts by insisting on the omission of a great deal of the detail. Then we have had (worst of all) the irrepressible First Commissioner who thought he understood everything, and whose policy was "meddle and muddle"; to whose mischievous activity we owe it that Hyde Park corner has been disfigured, and the National Gallery provided with probably the worst planned staircase of any public building in Europe. And now, under the most recent rule, we have the affair of the so-called Marble Arch improvement, which, as a piece of architectural laying out, is so absurdly bad that "failure" is too mild an expression to apply to it. Mr. Lewis Harcourt is a very clever man; in political life he is likely to rise high; but obviously he knows nothing whatever about the things which a First Commissioner of Works ought to know, or he could never have sanctioned such a piece of work as that.

The whole of this mischief arises from the absurdity of regarding and treating the position of First Commissioner of Works as a political one. There is the double evil, that a man is appointed to the office for political reasons, who may have, and probably has, no special qualification for it at all; and secondly, that a First Commissioner who has any special knowledge and who understands his work is liable to be called on to resign and to turn it over to other and probably less competent hands at a change of ministry, although the subjects with which he is concerned have nothing whatever to do with politics. It is no answer to say that a War Minister and a First Lord of the Admiralty are non-professional men, and are removed at a change of Government; it might be much better if it were otherwise; but at all events the management of the Army and the Navy is involved in the main policy of the country. But the subjects with which the Office of Works is concerned have not the remotest relation to political questions.

What is wanted is a permanent First Commissioner of Works not appointed on political grounds, but selected for his knowledge of and interest in architecture and town-planning, and retaining his post independent of any change of Government. If we could once get such an appointment made, we might see some good done, and some blunders avoided. Nothing good will be done as long as the present absurd system obtains of making the conduct of public works of architecture a kind of sop to party politicians, independent of any consideration of their ability to preside over or direct such operations.

Notre Dame de Paris.

THE town-planning idea, working yeastily in men's minds, is causing, *passim*, many strange bulgings and depressions. A common symptom is the desire to "open up" vistas and approaches, or sometimes the process, it appears, may be better described as "opening down." A French municipal architect has put forward with respect to Notre Dame de Paris a scheme which inclines towards excavation. The fine old church, begun in 1163, and virtually completed by Philip Augustus about 1230, now, like many another ancient building, conveys the impression to a superficial observer that it must have sunk several feet below its original level; the fact being that the ground around it has risen through centuries of accretion. The porch, which is now almost on a level with the Place du Parvis, was formerly reached by a flight of steps. To restore it to its ancient level, an American would probably suggest the nice offices of the screw-jack and the underpinner; but the French architect has no idea of laying irreverent hands on the building itself. His proposal is simply to dig down to the level at which the square formerly lay. "But," says the Paris correspondent of the "Daily Telegraph," "the difficulty is that the foundations of the other buildings on the square cannot be touched. The only possible process, therefore, is to dig a square hole in the middle of the Place du Parvis. This would be 'ornamentally paved in the taste of the old Italian palaces, and from this a new monumental staircase would lead up to Notre Dame.' The visitor approaching the cathedral would therefore, at all events while he stood in the hole, obtain the same view of the building as was presented in the Middle Ages." The correspondent has a threefold objection to the scheme. He disapproves of "a square with a large hole in it"; he "fights shy" of the attempts of the modern architect to reproduce the ornamental pavements of ancient Italian palaces; and finally he distrusts the notion of a "monumental staircase," and he thinks that, altogether, it would perhaps be best to leave Notre Dame alone. No doubt that sane but inglorious course will be adopted. One does not quite understand the correspondent's objection to the "monumental staircase." Perhaps he thinks that the adjective is being rather over-worked.

The King Edward VII. Memorial.

IT appears that out of about 150 different proposals which have been submitted to the Executive Committee for considering the subject of a monument to the late King, two have been selected for special consideration. One of these, proposed by Lord Avebury at the request of the Senate of the London University, is the erection of a great hall for ceremonials connected with the University, for the conferring of degrees, and for examinations. It is urged in favour of this that the activities of the University are extending in many directions, that the present accommodation in the eastern half of the Imperial Institute is insufficient, and is only temporary, and that there is no provision for the corporate life of the students. This latter is, of course, an old complaint; as a well-known professor expressed it long ago—"The London University is a chair and a book, and nothing more." But we do not see how the erection of a central ceremonial hall is to help this deficiency much; and though it is argued that the hall would admit of other buildings growing up around it, still, as it is only proposed at present to build the hall at an outlay of £70,000, while the full provision of buildings for the University would require £300,000, the memorial hall would at best be an incomplete building, waiting for additions which might be many years in coming; and an incomplete building is hardly the best kind of memorial. The other favoured scheme, which it is understood has the support of the First Commissioner of Works, is to erect a building as a museum for everything connected with the history and topography of London, which should be to London what the Carnavalet Museum is to Paris. That such a museum is very much needed we quite admit; and as this would be a scheme which could be carried out at once and completely, we certainly prefer it of the two.

But we do not see the special connection of such a scheme with the memory of the late King. We are still of opinion that the best possible monument would have been the erection of a new façade to Buckingham Palace. This would have supplied what is very much needed, since the front of Buckingham Palace is quite unworthy to form a termination or back-ground to the Victoria Memorial; and it would be more closely connected than any other form of memorial with the life of the late Sovereign.

The New St. Paul's Cross.

THE erection on the site of the old St. Paul's Cross, the design of which had already been publicly known through the model exhibited two or three years ago at the Royal Academy, was, in the French phrase, "inaugurated" last week by a dedication service. No attempt has been made to restore the original function of the cross as an open-air pulpit, though the installation of an external pulpit for open-air preaching has been rather a success in connection with one or two London churches, and there might have been a certain interest in reviving the ancient use as well as the memory of the cross. However, as it stands, it is a symbolical memorial, and has to be considered as such. It is a very striking and unusual design, which we admire much as a whole, though there may be one or two points in detail with which we do not quite sympathise. We rather regret, for one thing, that Professor Blomfield has added another example in London of the use of the complete architectural column and capital to carry a statue, which is not what a column and capital is suited to; a stele of a less pronounced architectural form would, we think, have been more in place. The treatment of the circular portion of the base in very boldly moulded Belgian black marble is exceedingly original and effective; but it would have looked still better had the crown moulding and plinth not been carried round the square portions. The idea of the base is that it is a moulded black marble base on circular lines, cut into on each face by a square base of white stone; but the crown-moulding and plinth of black marble being carried also round the square portion, there is not enough of the stone base to assert itself, and it seems killed by the black marble. Had the stone been treated as a plain block with no mouldings, and the whole of the black marble mouldings stopped against it, the effect would have been much bolder.

As a whole, however, it is a fine piece of work. The bronze figure of St. Paul at the top, and the white marble sculptured children round the base of the column (the latter from the architect's sketches), are admirably modelled by Mr. Mackennal; the figures at the base are particularly good in line and composition; the figure of St. Paul is too ecclesiastical in conception for the Apostle of the Gentiles, but this we suppose the spirit of the present day demands.

On the four sides of the pedestal of the column are the arms and symbols of the State, the City of London, the Church of St. Paul, and a helmet and coat of arms of the donor.

The engraved bronze tablets on the general base are very well designed, and form a good decorative incident in the work.

The Minimum Cost of Cottages.

SPEAKING on the question of rural housing at a meeting at Guildford, Mr. J. St. Loe Strachey referred to an experiment he had made to arrive at the minimum cost at which a pair of cottages could be erected in the country. Ten years ago, he said, he tried to fight against the idea in theory that it was impossible to build a pair of cottages in the country under £450. A year ago he tried to fight against it in practice, and he had succeeded in building at Newlands Corner (where he resides) a pair of good cottages for £300. On no account would we rob Mr. Strachey of any of the credit of his remarkable achievement. He has proved the possibility of building (in that particular district, and under those particular conditions) a pair of cottages for £300, but we hazard a doubt as to whether he has proved the desirability of building at this price, or even the possibility of doing it as a matter of common practice. It is stated that "Mr. Strachey is of opinion that the success of of his £150 cottages will revolutionise modern building methods, which will be of immense benefit to the working classes." We take leave to doubt the suggested extent of the benefit, and we are by no means sure that what was obviously the result of a very special effort can be perpetuated on business lines. It is stated that "the exterior of the cottages is very simple," and that "this is where a great deal of money was saved, for in most modern cottages builders go for outside effects, which are both costly and useless. Concrete block was the material used, and it has proved both inexpensive and satisfactory." It is very true that many of the "outside effects" of small dwellings are undesirable; but they might be, and sometimes are, far otherwise; and Mr. Strachey's scheme seems to admit of no opportunity for escape from bald and bleak utilitarianism. Nor do we perceive that an architect had much, if anything, to do with these cottages. Perhaps that item would also be considered "costly and useless." There is, however, included in the details of cost, the sum of £2 10s. 8d. for "making plans and setting out cottage." We are also told that "the whole of the work was carried out by a local contractor, who took time and care over every detail, with the result that the cottages are by no means 'jerry-built,' but provide most comfortable homes." In conjunction with this pleasing statement we set this item from the "details of cost": "Builder's profit, to cover use of tackle, £5 12s. 6½d." This, like the apparent elimination of the architect, gives us pause. It seems to represent one of the special advantages that enabled Mr. Strachey to accomplish his *tour-de-force,* and that could by no means be counted upon as a general rule. Altogether, while we cannot withhold our admiration for Mr. Strachey's motive, nor for the enterprise and resource with which he has materialised his contention, we do not think that he has succeeded in justifying the demand for extreme cheapness. If his object was to break down the defence of those persons who shirk their responsibilities with regard to the housing question, on the plea that it is impossible to build a pair of cottages for less than what, in some circumstances, may be the prohibitive price of £450, his experiment will not, perhaps, be utterly fruitless; but we cannot help feeling that a close and literal following of his methods—were it possible—would not afford a satisfactory solution of even the rural housing question; minimum cost carrying inevitable consequences that mark it as being about the worst conceivable aim in building. But it is suggested that the £150 cottage would be an inestimable boon to the person who has recently given a new and very ugly word to the language—the "smallholder." It were, nevertheless, a sin to encourage him, or anyone else, to build as cheaply as he can. Idealism should take an altogether different, if not an opposite, direction. As a sporting adventure, Mr. Strachey's experiment serves its purpose, no doubt, in scoring off those who, in a manner, challenged him to produce a decent £150 cottage. He has certainly proved his contention—somehow; but why he should so persistently "fight"—the word is his own—in theory and in practice—against the idea that "it was impossible to build a pair of cottages in the country under £450" is a matter that seems to require fuller explanation. That seems to us to be a more reasonable price, and one at which it would probably not be necessary to eliminate the architect, stint the builder, and adopt the most primitive system of sanitation.

Board of Agriculture's New Building.

BUILDING operations have been proceeding for some time past in connection with the foundations of the new offices in Whitehall Place of the Board of Agriculture. It has been found necessary to excavate to the gravel, a distance of 27ft. from the surface, to underpin the whole length of the main wall of the adjoining Hôtel Métropole, and to underpin and support an active main sewer of 6ft. 6in. diameter which was found to cross one corner of the site. This sewer had further to be water-proofed and strengthened with reinforced concrete against any possible internal pressure. The new building will consist of two basement floors, a ground floor, and five upper storeys, with two frontages to Whitehall Place and one to Great Scotland Yard. In addition the building will be lighted by internal areas. The style adopted is a free treatment of the English Renaissance, and the three façades will be faced with Portland stone. The principal front is to Whitehall Place, and consists of a central block flanked by pavilions at each end, with a large main cornice for its entire length. The pavilions are raised above the central portion and finished with carved pediments, while below the cornice is a colonnade of Ionic columns, carried through the third and fourth storeys. The central feature is the main doorway with the Royal arms above, and the top storey of the central block has a row of carved shields and Ionic columns between the windows and immediately below the main cornice. The other elevations have the same treatment, varied and slightly simplified. A fire-escape staircase of steel will be constructed in the main area, and the floors, beams, stanchions, and staircases, will be in reinforced concrete. The principal entrance and lower part of the main staircase will be faced with marble, while the President's room, deputation room, and library will be finished in oak. The architect is Mr. H. N. Hawks, I.S.O., of his Majesty's Office of Works.

New Government Department Buildings, Washington, U.S.A.

A CENTRAL NEWS cablegram from Washington, U.S.A., announces that architects have been invited to submit competitive plans for three new Government Department Buildings. The new buildings, which are to be erected south of the Treasury buildings there, are for the Departments of State, Justice, and Commerce and Labour, and will cost respectively £440,000, £380,000, and £730,000. The State Department building will have a ground area of 72,000 square feet, and will have 325 rooms. The Justice Department building will have an area of 57,600 square feet, and 225 rooms, and the Labour building will have an area of 90,000 square feet and 450 rooms. The high degree of accomplishment at which, as shown by numerous examples that have been illustrated in this Journal and the "Architectural Review," the American school of architecture has attained within recent years, especially in the design of business premises and public buildings, renders this competition of great interest and importance, and the publication of the winning designs will be awaited with more than ordinary interest.

ENGLISH DOMESTIC WORK.

BY J. ALFRED GOTCH, F.R.I.B.A.

In the first of his important series of lectures at University College, London, Mr. J. A. Gotch traced almost to its source the "English Vernacular Domestic Work" which is probably the most characteristic "note" in English architecture. In the second lecture he traced its early development, and the gradual approach towards comfort, convenience, sanitation, and decoration. Notes of both these lectures appear below.

THE object of the course, Mr. Gotch explained in his first lecture, which was delivered on October 27, was to illustrate the changes that took place in the vernacular domestic work of our country through some seven centuries. He hoped to show how the house had grown from very small beginnings to the comparatively comfortable habitations which we occupy in the present day. In tracing the history of the house it would be well to proceed from the known to the unknown, or at all events from the well known to the less known. The accommodation of a house of to-day may be divided into reception-rooms, bedrooms, and kitchen department; and the size of a house may be roughly gauged by the number of bedrooms it contains. Three or four bedrooms indicate a small house; ten or twelve, a good sized house; while five-and-twenty or thirty would imply a large mansion. Another item in the accommodation of a modern house is the bathroom. The various rooms of a modern house are all separate, and separately approached from passages or corridors.

Back through the Centuries.

Now let us go back a hundred years. What difference do we find in the accommodation? Not very much. Except in a very few instances, the bathroom has disappeared; but on the whole the early nineteenth century offers much the same distribution and ways of access as the twentieth.

Let us go back another hundred years, to the days of Queen Anne. We still find no essential difference in the main departments. There are still the entrance hall, or passage, the separate reception rooms, and the separate bedrooms, although these are not so rigidly separated as they are nowadays.

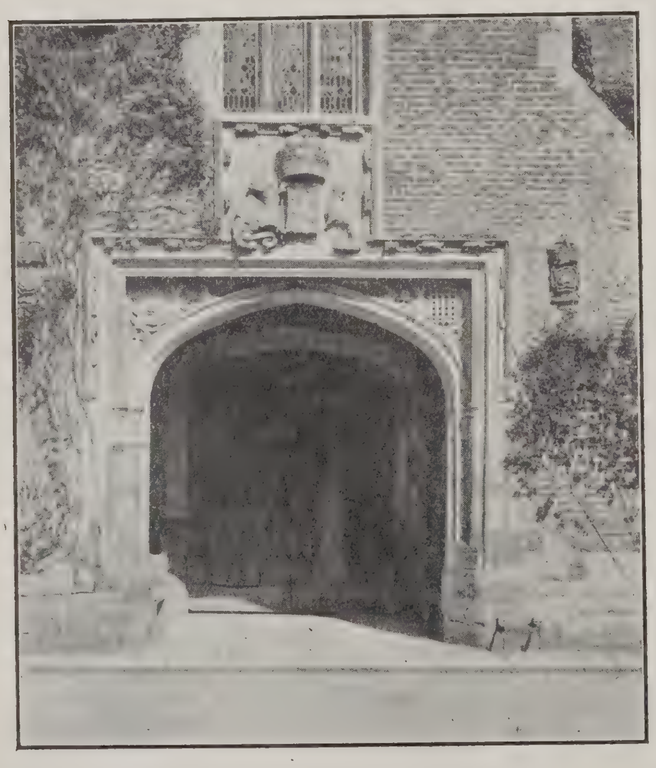
Decline of the Hall.

But if we take a further leap of a hundred years into the past, and look at a house of the time when James I. came to England, we find a considerable difference. The entrance hall is relatively more important; it is doubtful whether we ought not to regard it as a living-room rather than as an entrance. It was at about this period that a very momentous change took place in house-planning, when the hall of a house began to be regarded as a means of access to the other rooms, instead of, as in former years, a room in itself—in fact, the chief room. This is the most striking change to be observed at this period. There are still plenty of bedrooms, though many of them lead one into another; and the kitchen department is still quite separate and distinct. But only thirty or forty years earlier the hall is the principal room in the house. It lies in the middle. At one end of it are the rooms devoted to the family; at the other are those required for cooking and for the work of the servants. There are still a certain number of bedrooms.

The Irreducible Minimum in Planning.

As we go further back into the past, the bedrooms become fewer and fewer, until we arrive at the period when the house consists only of a great hall, a kitchen, with its necessary adjuncts, and perhaps a room or two for the private use of the family. Of bedrooms, as bedrooms, it may be said that there are none. We have now reached the irreducible minimum of house accommodation—the elementary conditions of existence. Let us now endeavour to see how, from the minimum accommodation which afforded shelter from the weather there were gradually evolved the comfortable homes in which we live to-day.

Early dwellings in England and elsewhere would seem to have consisted of a large shed, occupied by the cattle at one end and the owners of the cattle at the other. When English people required houses which were capable of withstanding attack, and were less likely to catch fire of themselves, they built them of stone, but retained the ancient ideas of arrangement; but the people who could afford to build in stone were sufficiently advanced to desire to have the cooking done in a



COMPTON WYNYATES: FRONT ENTRANCE.

CASTLE RISING: ENTRANCE.

OXBURGH HALL, NORFOLK.

NEVILLE HOLT: PORCH.

separate room. Accordingly the more important early houses consisted of a hall, a kitchen, and perhaps a private room for the master.

Manor-houses and Castles.

It is only the houses of importance—the manor-houses—which have survived. Contemporary with the manor-houses, and surviving them in greater numbers, were the castles. These were not necessarily military strongholds. Many of them were strongly fortified houses; and, at any rate, the domestic part of these castles enables us to form a good idea of the manner in which people lived after the Conquest. One of the earliest and also one of the smallest of these castles was the Peak Castle in Derbyshire.

The lecturer showed also the Dolwyddellan, Warkworth (end of twelfth century), Castle Rising (probably before 1176), Oakham (1180), the "Jew's House" at Lincoln, Stokesay (1240—1290), Longthorpe Tower (late thirteenth century), Woodcroft (*circa* 1280), Rockingham, and Haddon Hall.

Castle Rising.

Concerning Castle Rising, the lecturer pointed out that here was the keep of a strong castle, built in ancient earthworks. It was noticed that the fireplaces were in the walls, and that the bedrooms were also in the walls. Castle Rising is attributed to William D'Albini, who died in 1176. The great hall (47ft. by 23ft.) is on the first floor, the ground floor beneath it being devoted to store places. The living-rooms were here, as elsewhere, placed high up from the ground for the sake of added security. In addition to the hall, there was a large room, approached from it, which was possibly the solar, but if so it had neither the cheerfulness nor the privacy usually associated with the lord's own room. A feature of Castle Rising that shows a certain amount of refinement is the placing of all the garde-robes on the west wall; these apartments being almost invariably approached from the principal rooms, although considerable ingenuity is sometimes shown in making a tortuous passage to them in order to ensure ultimate privacy. At Castle Rising there is a certain amount of ornament introduced for ornament's sake, in the shape of circular recesses, filled with grotesque heads, placed in the plain walling of the forebuilding which encloses the entrance staircase. The hall at Stokesay was of one storey, lofty, and 53ft. by 30ft. in plane dimensions. The fire was placed upon a hearth in the middle of the room. The kitchen has disappeared, but there remains the "solar" (which was usually upstairs, and the only private chamber).

II.—THE LATER MEDIAEVAL HOUSES.

In his second lecture, delivered on November 3rd, Mr. Gotch, after summarising the leading points in his first, recalled how he had shown that there was always a striving after comfort, one means to which was a sub-division of rooms—the use of separate rooms for separate purposes. Accommodation spread at each end of the hall. The solar developed into family rooms, and the kitchen into the servants' wing.

That there was a real desire for increased comfort is shown by the records of the alterations and repairs carried out in the royal residences of Henry III., 1216—1272. In the Liberate Rolls of his time there is a series of entries relating to works at the royal houses which give continuous information for the forty years between 1230 and 1270. Besides the works of necessary repair—which seem to have been frequent, and hardly tend to establish the existence of a high standard of workmanship at that time—there were others undertaken obviously with the object of increasing the comfort of the houses in the direction of additional accommodation, better protection against the weather, more light, greater warmth, improved sanitation, and handsome decoration.

In 1255, a staircase was ordered to be built at Rochester, so that strangers and others might enter the chapel without passing through the middle of the King's Chamber as they used to do. A more general improvement was ordered at Havering in 1250, when the pantry and buttery were enlarged, and a new salsary, larder, and chandlery were built, as well as a chimney in the king's great wardrobe. At the same time the wine-cellar was deepened, and the windows towards the sun were blocked.

Not only were the houses improved from time to time, but the gardens, such as they were, received attention. Two great walls, for instance, were built round the Queen's garden at Woodstock. Large rooms were not infrequently added to increase the comfort of the house. A new kitchen, 40ft. square, was built near the king's kitchen at Clarendon. A chamber for the Queen was added at Marlborough. It was of two storeys, and an alley connected it with the king's chamber. At Guildford a chamber 50ft. long by 26ft. wide was built for Edward, the king's son, with a chamber beneath for the king's noble valets. In other places we find chamber-were added for the chaplains, the seneschals, and the king's knights. From these references it is evident that a sub-division of rooms was becoming more common, and that, instead of being herded together in a few rooms, the household was being accommodated in separate quarters, according to their degree. At the same time, it must not be assumed that the standard of comfort was very high. At Winchester a room was built near the king's stable for three beds, and to put harness in. At Clarendon the wood-shed was adapted for the use of the king's knights by the addition of a chimney, two windows, and a privy chamber.

Porches were erected, for better protection against the weather, as at Everswell, Oxford, Clarendon, Marlborough, Westminster, and elsewhere. At Woodstock an aisle was made between the Queen's chapel and her chamber, so that she might go to and return from the chapel with a dry foot. Windows, heretofore merely closed with wooden shutters, were glazed. Many early windows remaining at the present day never had glass in them, the stonework showing no groove for its accommodation; whereas the hooks upon which the wooden shutters hung are still there. Henry III., however, ordered a good deal of glazing. In 1238, orders were given to glaze a window of one of the rooms at Westminster. In another case, windows were inserted, with white glass casements to open and shut. In 1232, windows were ordered to be made in the king's painted chamber at Winchester, expressly on the ground that it was too dark. As time went on, windows became larger.

There are many references to the provision of new chimneys, the central hearth of the large hall being supplemented by fireplaces in the increasingly numerous smaller rooms. There are also several orders for louvres; one for the great hall at Woodstock in 1244, another four years later, over a hearth of freestone high and good in the chamber above the wine-cellar of the same house. These new chimneys were the principal means adopted for securing more warmth. They were supplemented by the glazing of the windows, the wainscoting of the roof over the king's seat, and the occasional introduction of what appear to have been inside porches.

An interesting improvement made at Westminster in 1260 represents one of the earliest drainage works on record, a conduit being made through which the refuse of the king's kitchens was carried to the Thames. Earlier in the same century, reference is made to a conduit of water carried under ground to the king's lavatory.

Many of the king's orders refer to decoration, and it is curious to find how largely whitewash was used. The towers at Corfe Castle and Winchester were thus treated. The queen's chamber at London was to be thoroughly whitened and painted with roses. The king's favourite method, however, was to paint the walls (and sometimes the ceiling) green, spotted or scintillated with gold. Once or twice orders were given to paint pillars of a marble colour. "Dives and Lazarus" seems to have been a favourite subject with the king. The wooden shutters of the windows were frequently decorated with the king's arms.

These efforts towards comfort, it is worth noting, were made in the thirteenth century.

Haddon Hall is certainly the most instructive example left to us of a large mediæval home. Other examples shown were Penshurst, Apethorpe, Canons Ashby, Warkworth, South Wingfield, Tattershall Castle, Neville Holt, Stoke Abany, Stanton Harcourt, Lyddington, Kirby Muxloe, Cowdray, Oxburgh, Montacute Priory, Brympton, Fawsley, Willington with dove-house, Lavenham Town Hall, Buckden, Compton Wynyates, Bywell, Lyddington, Churchill Park (Somerset), and Chichester.

So far we have been examining examples of the Gothic work of England, truly vernacular, the outcome of a regular process of evolution. We have realised that Gothic architecture is not merely ecclesiastical, but that it was founded upon a system of construction applied equally to churches and houses.

CHRONICLE AND COMMENT.

Leeds Post Office Enlargement.

For some time the accommodation at the Leeds General Post Office has been insufficient, and it has been decided to take in hand an important enlargement of the buildings. The intention is to erect two storeys over the existing Quebec Street wing, thus completing the wing and making it correspond with the Infirmary Street side of the premises. In the new top storey it is proposed to provide for the trunk telephone arrangements, more accommodation having been rendered necessary by the rapid growth of the telephone system throughout Leeds. The whole of the first floor will be utilised for the postmen, and for dealing with the large quantities of advertising matter posted in and passing through Leeds. The sorting office, which is on the existing ground floor, will be partly refurnished to fit in with the new scheme, and the cloak-room, lavatory, and dining-room accommodation will be improved. The Post Office in City Square faces the entrance to the Midland Railway Station. It was erected at a cost of £75,000 on the site of the old Coloured Cloth Hall, and the new enlargement, the first since the buildings were opened in 1896, will involve an expenditure of another £20,000. Building operations will be commenced in the course of a few weeks, and the elevated wing will, it is hoped, be ready for use in eighteen months' time. The rate of progress in Leeds in postal, telephonic, and telegraphic work has been consistently rapid for some time, and although the projected extension is likely to meet all the needs of the authorities for several years it is realised that a time must arrive when a large and comprehensive scheme of accommodation will have to be considered.

The New Whiteley's.

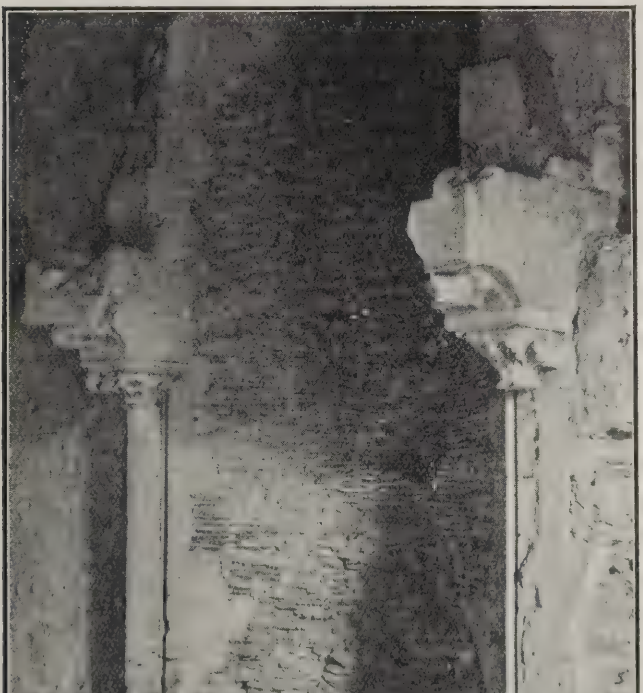
The Mayor of Paddington has laid the foundation-stone of the large new building, in which the business which Mr. Whiteley established is to be conducted. It is to occupy an area of four acres, 600ft. by 300ft., fronting upon Queen's Road, Bayswater. Its five tiers of floors and galleries will give a trading space of close upon 900,000 square feet. The new building will have a great central dome, and Corinthian pillars will ennoble the frontage. It will be largely of reinforced concrete construction. The structure is to cost a quarter of a million, and between 5,000 and 6,000 people will be employed. There will be twenty-four lifts and 200 telephones for the use of customers. There will be an Italian garden on the roof, a children's playground, a club lounge for the husbands of shopping ladies, an information bureau, and a wireless telegraph station. The architect is Mr. John Belcher, R.A.

Clifford's Inn and the Knights Bachelor.

At the first banquet of the Society of Knights Bachelor, held on November 1st at the Savoy Hotel, it was announced that the Society had just concluded the purchase of Clifford's Inn for its permanent home. The acquisition of the building has been rendered possible by the generosity of Sir Henry Pellatt, C.V.O., of Canada, who was the guest of the evening at the Savoy banquet, and who has guaranteed £500 a year as long as may be necessary to supplement the interest that may have to be paid on the capital sunk on the purchase. According to a correspondent of the "Times," the price is £27,500, and the Society will derive an annual income of £750 from that portion of the property which is at present let. Sir Aston Webb, R.A., himself a member of the Society will probably advise as to the best means of finishing the western end of the building in consonance with the architecture of the hall, which is of considerable antiquity. The present tenants are the Society of Arts and Crafts, and there is no intention of disturbing them. "According to the building plans prepared by Mr. William Willett, the hall and its precincts will be incorporated in the scheme of development of the remaining part of the property in such a way as to admit of the whole of the Inn forming a pleasing and distinctive addition to the architectural amenities of the City. The ancient interior of the hall will be strictly preserved, with a due regard to modern requirements, but of course no attempt at so-called restoration is to be made." Clifford's Inn, off Fleet Street, was formerly one of the Inns of Chancery, and belonged to the Inner Temple. Harrison, the regicide, was a clerk in the office of Thomas Houlker, an attorney in Clifford's Inn. Clifford's Inn is the last of the old Inns of Chancery. It obtains its name from Robert de Clifford, to whom the messuage was granted by King Edward II. on February 24, 1310. Sir Edward Coke and John Selden lived in the Inn, and in the Great Hall Sir Matthew Hale and other judges sat after the Great Fire of London to settle all disputes about property and boundaries, and performed with such satisfaction to all concerned that their portraits were painted by the Corporation and hung in the Guildhall. At No. 13, Clifford's Inn lived George Dyer, and was there visited by Leigh Hunt. For a long time the fate of Clifford's Inn has hung in the balance. The property, which in 1618 sold for £600, had risen in value to £100,000 in 1910.

The Rebuilding of Westminster.

Westminster has within recent years become almost an entirely new city, but its transformation is still in progress. The office of the Paymaster-General is about to be rebuilt. When the remaining portion of Great George Street, on the north-west side, was pulled down, together with Delahay Street, to make way for the completion of the huge new block of Government offices, the front of No. 37, which faced St. James's Park, and was long occupied by Sir John Aird, was carefully preserved. It is now to be used with additions in the re-erection of the Paymaster-General's office. Just below the archway of the Horse Guards, and on the Park side, the finely "weathered" stone of this building, designed by Kent in the middle of the eighteenth century, is beginning to decay. Workmen are busy there now restoring the cornice. A little further on one sees men hard at work upon the roof of 10, Downing Street. The fine lamp standard designed by Mr. Nicholson Babb, and presented by the President and Council of the Royal Academy to the Office of Works, is to be erected at the corner here, by the Foreign and India Offices. Within a few yards, at the end of Charles Street, is the site of the demolished Delahay Street. On the top of the steps here will soon be set up Mr. John Tweed's statue of Clive. On old Delahay Street and the Great George Street corner will now arise, to face the park, the Government offices which are to complete the magnificent block begun some years ago. The famous "Jeffrey's Steps" here (says a well-informed writer in the "Daily Graphic") have vanished, one fears, for all time. Across Great George Street, leaving Storey's Gate, on the right, four or five fine houses have been pulled down within the last few months, and a most valuable building site exposed. On it will be built the new home of the Institute of Civil Engineers. Over the way is their present magnificent building, put up not many years ago. It must make way now for the new Government offices we have referred to. Everywhere Westminster is decorating, building, and improving.



ABINGDON ABBEY: CHIMNEYPIECE IN "PRIOR'S ROOM."

The Wolsey Tapestries: A Discovery.

A very interesting discovery, in a Jacobean mansion in Cornwall, has been made by Messrs. Puttick and Simpson. In the Watch Chamber at Hampton Court Palace are three panels of Arras tapestry, forming part of a series illustrating the Seven Deadly Sins. These panels were originally the property of Cardinal Wolsey. It seems certain, upon examination and comparison, that the panel found in Cornwall is a fourth of the series, each panel being surrounded by exactly the same borders of roses and daisies; while the newly discovered panel, which is about 13ft. square, is accompanied by a portion of a sixteenth-century frieze originally made for the Great Hall at Hampton Court. Small peices of this frieze still hang in that chamber. The panel is to be offered for sale, and it is to be devoutly hoped that it will not be allowed to leave the country.

New York's Proposed New Subway.

Tenders have been submitted by twenty-three firms who are in competition for the construction of certain sections of the proposed new tri-borough subway, which, with its forty-four miles of length and 133 miles of track, will constitute the greatest engineering feat of its kind. When the Public Service Commission decided that the work should be put in hand, the Board of Estimate intimated that this year they could spare $60,000,000 (£12,000,000), and in consequence bids were asked for the construction of twenty-two sections only. The firms bidding have put in seventy-five offers in all, having the option of taking one or more sections as suits them. The estimates prepared for the scheme contain some startling figures, the excavation of no less than 9,000,000 cubic yards of earth and rock, the use of nearly 2,000,000 cubic yards of concrete, and over 200,000 tons of steel, being included in the items.

Research Laboratory, University of South Wales.

(See Centre Plate.)

The Viriamu Jones Memorial Research Laboratory forms the north-west angle pavilion of the main façade of the University of South Wales and Monmouthshire at Cardiff. The building consists of a basement and three storeys, and is fitted to meet its special purpose. The basement is vaulted in concrete, but the upper floors, although fireproof, are constructed without the use of any metal able to deflect a magnet. The foundations are specially secured against earth vibrations. The architect is Mr. W. D. Caröe, F.R.I.B.A., and the general contractors are Messrs. E. Turner and Sons, Cardiff.

NEWS IN BRIEF.

New Police Court for Reading.

The Finance and General Purposes Committee of the Reading Town Council have reported that the Local Government Board would direct a local enquiry to be held with reference to the Council's application for sanction to borrow £4,800 for the purpose of converting a part of the premises acquired by the Corporation from University College, Reading, for use as a justices' room, police station, and cells, and a Quarter and Petty Sessions House.

* * *

Bishop's Stortford's Historical Monuments.

At a recent meeting of Bishop's Stortford U.D.C., the Vice-Chairman said it would be within the knowledge of most of the Council that a Royal Commission was appointed two years ago to survey the historical monuments of the country, and it had issued a very interesting report. It had dealt with the county of Hertford first, and had issued very interesting information on all objects of interest. What particularly concerned them was that one of the historical monuments mentioned as especially worthy of preservation was the ruins of the old Castle at Stortford, and it was also noted with pleasure that the Urban Council had purchased the site and taken means to preserve the historical monument for all time.

* * *

Building Inspection at Warrington.

The Street Improvement Committee of the Warrington Town Council have resolved:—"That the Building Inspector be provided with a report book, and that he report at every meeting of the committee on all buildings in course of construction and the laying out of new streets, and call special attention to any infringement of the by-laws or Acts dealing therewith."

* * *

Girls' High School, Bridlington.

This school was opened five years ago with the purchase of The Elms Estate, in the centre of the town, and adjoining St. John Street. It was opened with some thirty scholars, and to-day the numbers approach 120. The new premises will accommodate 150 scholars, and can easily be adapted for 200. Some five acres of land adjoining the old estate were secured, and the new buildings have been erected at a cost of about £8,500, to plans prepared by Mr. John Bilson, architect, of Hull.

* * *

Glasgow Infirmary Extension.

It is announced that an anonymous donor has given £5,000 to Glasgow Victoria Infirmary for building and equipping a chemical laboratory for scientific research.

* * *

A New Lighthouse.

The Northern Lighthouse Board in Edinburgh have decided to erect a lighthouse on the bold promontory of Maughold Head, near Ramsey. The lighthouse with a powerful foghorn will be south of the dangerous rockbound headland, four miles from Bahama lightship, and nine miles from the Point of Ayr.

* * *

Adelphi Theatre Redecorated.

The Adelphi Theatre was reopened last week, after redecoration. The colour scheme in the auditorium is a soft grey relieved with gold. A pink is introduced into the scheme in the seats. These are covered with a velvet which has been specially woven for this theatre in a hand loom, and is of specially fine quality. The silk tapestry panels on the walls of the private boxes have also a pink ground, but here a new note occurs, the design being in white, as are also the mouldings and borders of the mural decorations. The curtains and draperies are grey with gold enrichments, and are made of deep pile velvet. The Royal box and its retiring room are in the style of Louis XVI. The gilt furniture is upholstered in a silk red of English manufacture, whilst the smaller chairs are covered in brocade reproducing antique tapestry. In the stalls there have been introduced patent tip-up seats, the special features of which are the provision of two roomy shelves, and the shape of the seats is that of a drawing-room armchair.

OBITUARY.

Mr. Henry John Treadwell, F.S.I.

The death is announced, on October 24, at his residence at St. John's Wood, of Mr. Henry John Treadwell, F.S.I., a member of the firm of Messrs. Treadwell and Martin, architects and surveyors, Charing Cross. He was associated in the design and carrying out a good deal of domestic work, several hotels and breweries, and the Southern Hospital at Carshalton, and the Joyce Green Hospital at Dartford. Mr. Treadwell was only forty-nine years old.

Mr. J. Adams-Acton.

Mr. John Adams-Acton, the sculptor, who died on October 28th at Brodick, Isle of Arran, at the age of 79, was born at Acton, Middlesex, and educated at Lady Byron's School, Ealing, and, after being a pupil of Timothy Butler, at the Royal Academy schools, where he took several medals and the travelling studentship. At Rome, where he remained ten years, he was a pupil of Gibson. Among those who sat to him were Pope Leo, Cardinal Manning, Spurgeon, Dr. Parker, Gladstone, Beaconsfield, Lord John Russell, John Bright, Sir Edwin Landseer, and Lord Napier of Magdala. He is represented in Westminster Abbey by the Wesley Memorial, and in St. Paul's by a bust of George Cruikshank, and in the new Cathedral at Westminster by a recumbent statue of Cardinal Manning—his last work. In the Edinburgh Museum is a replica of his bust of Lord Brougham, which Gladstone pronounced the finest bust he knew.

Mr. R. W. Macbeth, R.A.

Mr. Robert W. Macbeth, R.A., who died at Golder's Green on November 1st, at the age of sixty-two, was perhaps better known for his etchings than for his paintings. He was a most indefatigable worker, and perhaps would have accomplished more if he had done less. He had a better appreciation for architecture than most painters can be said to show.

TRADE AND CRAFT.

An I.C.S. Employment Register.

We have received for notice No. 1 of "The I.C.S. Student (Weekly Edition)," which takes the exceedingly useful form of a specially compiled register of vacancies that have been notified to the International Correspondence Schools, Kingsway, London, by prominent firms throughout the British Isles. It is stated that this weekly register has become necessary by reason of the greatly increasing demands made by employers of labour on the Students' Aid Department for technically trained employees. Only I.C.S. students are eligible for the positions advertised. The fact that such a publication has become possible is a striking proof of the estimation in which the college is held by large firms of employers.

TWO VIEWS OF THE HOUSING QUESTION.

The opposing schools of thought on the housing question have come into collision in the newspapers; Mr. Ebenezer Howard, of the one part, and Mr. W. G. Towler of the other, showing cause. Mr. Howard's contention is as follows: "The L.C.C. propose spending £473,300 in buying 16 acres of insanitary property in Tabard Street. The cleared site is estimated at £85,600—thus involving a loss of £387,700. Five-storey dwellings are to be erected on part of the area—dwellings condemned to-day by nearly all housing reformers, which will certainly be regarded in a few decades as quite unfit for home life. Contrast this with what has been done for the same sum at Letchworth. A freehold estate 238 times as large as the Tabard Street area has been acquired—3,818 acres. Water, gas, electric power, and sewerage works have been constructed Nine miles of new tree-planted roads have been made, and 18 miles of water mains, 13½ miles gas mains, and 12½ miles of sewers have been laid. Seven hundred and twelve garden-surrounded cottages have been built at an average cost of £180. And, to witness how abundance of light and air make for health, the infantile mortality rate of Letchworth in 1909 was 31.7 per 1,000; of London, 107.9. At Letchworth there has been no loss on the capital spent. On the contrary, taking together for this purpose share and loan capital, an average rate of 2 per cent. has been all along paid on the sum expended on land and general development, and at least 4 per cent. on cottages, while the estate has appreciated in value by fully £95,000 over and above every penny spent upon it. And the site has made a splendid field for many enterprises. Why should the L.C.C. continue to buy old clothes as the privilege of putting on new garments of obsolete fashion? By carrying out bold projects in the open they could solve the twin problems of rural depopulation and of overcrowding in large cities, and also earn a profit for, and not inflict a loss upon, the long-suffering London ratepayer."

To this, Mr. W. G. Towler, of the London Municipal Society, replies that Mr. Howard's contention ignores:—1. The primary duty of the London County Council with regard to insanitary areas. 2. The character and condition of the people in the Tabard Street area. "The population," Mr. Towler points out, "consists of people engaged in trades and occupations in which any great distance between the workers' place of residence and the work itself would be an insuperable bar to employment. If the London County Council built another Letchworth Garden City 35 miles from Southwark, probably not one per cent. of the inhabitants of the Tabard Street area would go there to live. It is doubtful, moreover, whether any of the trades and occupations in which those people are engaged could be persuaded to move into the new Letchworth. The London County Council has to do the best it can by reforming the district. Garden cities," he agrees, "are a wise provision against the creation of slums, but they are no cure for existing ones. If you were to build a ring of 50 garden cities around London, it is doubtful whether they would drain a single slum in the congested centre."

It would be superfluous to point out that each of these gentlemen is right. There can be no question that Mr. Howard's is the better way, nor that Mr. Towler's is here the more practicable.

R.I.B.A.: PRESIDENT'S INAUGURAL ADDRESS.

The opening meeting of the 1910-11 session of the Royal Institute of British Architects was held on Monday evening at 9, Conduit Street, W., when the president, Mr. Leonard Stokes, delivered his inaugural address. He first spoke of

Town Planning

and the great success of the recent Conference, and he announced that, in furtherance of the work already done, it was proposed to hold shortly a much smaller gathering, composed entirely of experts, with a view to seeing if some definite proposals on the subject could not be drafted.

Mr. Stokes then went on to refer to the paramount importance of architecture in its relation to civic life, and this led him to make some further observations on

The St. Paul's Bridge Scheme.

The City Fathers, in their consideration of that scheme, seemed to have disregarded the architectural side, and when a deputation from the Institute waited upon the Bridge House Estates Committee, which had the matter in hand, and besought them to take advice on this particular point, it was disregarded and misunderstood, and the world had been told that it would cost a million more to carry out the scheme proposed by the deputation. "Now I wish to repeat what I have already said in the public Press, that all the deputation did was to urge upon the Committee the importance of considering St. Paul's Cathedral when selecting the position of the bridge, and the arrangement of its approaches, and the necessity of obtaining the best possible advice on this point from the first. That was the scheme proposed by the deputation, and one would have thought that as business men they could have seen the wisdom of getting the very best possible advice before embarking on any project costing nearly two millions. The right thing to do, I maintain, is for the Corporation to appoint the best architect it can find—for there are architects and architects, I fear, just as there are golfers and golfers—to work with the engineer and the surveyor they have already appointed, and for these gentlemen to reconsider the lay-out of the bridge and its approaches, and have proper models made, so that this magnificent opportunity of making a really great national improvement may not be thrown away. A glance at the plan approved by the Corporation will explain my meaning, for on this the position of St. Paul's Cathedral is not even indicated. If something of this sort is not done, then the only course I can see is for us to raise as much public interest and influence as we possibly can, and oppose the Bill in Parliament, when the Corporation seeks the necessary powers to erect the Bridge."

Dodd, the Designer of Waterloo Bridge.

While on the subject of bridges, the president took occasion to state a few facts about Waterloo and London Bridges, which had been supplied to him by Mr. A. E. Richardson.

"Waterloo Bridge, which was at first called the Strand Bridge, was designed by Ralph Dodd, an engineer who had, however, made a particular study of architecture, and an Act of Parliament was obtained in 1809 for its erection on Dodd's design. Before the bridge was begun, however, Dodd was deposed, and John Rennie, another engineer, who, however, does not appear to have had any particular knowledge of the subject—having begun life as a millwright—was employed to carry out the work, and the following extract from the 'Gentleman's Magazine,' page 482, vol. 87, 1817, the year the bridge was finished, is, I think, conclusive:—'Mr. Ralph Dodd requests us for the sake of justice to contradict an assertion which has got abroad, namely, that Mr. Rennie was the architect of the Strand or Waterloo Bridge, which he says "is not the fact, it being an honour that I cannot allow to be taken from the family. The plan and design of that bridge were approved by the proprietors, and its measurements inserted in the Act of Parliament for building it (of course no other could be admitted) long before Mr. Rennie had anything to do with it. These plans are now accessible for the inspection of any gentleman who may wish to see if they have been acted upon, and in which it is presumed the architectural taste of this country has not been disgraced."'

"The cost of the bridge was £565,000, the approaches £112,000, land and buildings £373,000; total, £1,050,000; and it occupied six years in building. We may, therefore, take it that the designer of the bridge was Ralph Dodd, an engineer who had made a special study of architecture, and was naturally and very justly proud of its architectural effect."

It is suggested that Dodd, in designing Waterloo Bridge, may have gone to old Blackfriars Brdige for his motif. This bridge was the work of Robert Mylne, and was designed by him on his return from Rome, where he had been studying architecture, and was somewhat similar in design to the present Waterloo Bridge.

Cockerell and London Bridge.

"The design for London Bridge was undoubtedly produced by John Rennie—the work being carried out by his son, Sir John Rennie. Having been connected with the erection of a fine work like Waterloo Bridge, it seems only natural that Rennie should have made a good design for London Bridge, and we are grateful to him for having done so, but it is interesting to note that the younger Rennie was Professor Cockerell's brother-in-law, with whom I believe he travelled a good deal, and that Cockerell must in all human probability have had some influence on Rennie when he was designing the details of the bridge. We know, at any rate, that Professor Cockerell made designs for the buildings connected with the approaches to the bridge, and that these were considered by the Committee but rejected, and the work was eventually put in the hands of Sir Robert Smirke. Rennie regretted very bitterly the non-adoption of Cockerell's designs, and could never bring himself to admire those erected by his other friend Smirke.

"I think I have now said enough to show pretty clearly that the designers of our best bridges, even if they were not architects by name, were so by training, at any rate, and good architecture, whatever may be said about it, cannot be produced except by a trained mind."

Mr. Stokes next spoke of the quality of present-day architecture, expressing the opinion that we had now even more good men than ever before, particularly among the younger generation. Then, after briefly referring to the new galleries of the Institute, which provided such excellent accommodation, he made reference to the supplemental charter and new by-laws, and

The New Licentiate Class.

"You are aware that there are a large number of men about the country who, for one reason or another, never presented themselves for our examinations or became either Associates or Fellows. Many of them are now in active practice, and we can hardly now ask them to subject themselves to examination; the only thing that we ask of them is, therefore, that they shall be thirty years of age, have either been in practice for five years, or shall have been engaged in the study or practice of architecture for ten years. This class is to be a temporary one, open for twelve months only, and I am glad to say many hundreds have already joined, though only six months out of the twelve have yet elapsed. When once within our ranks Licentiates can either remain in that class or can pass on to the Fellowship, when qualified, and after passing such examinations as may be established. Such examinations may possibly largely take the form of an enquiry into the quality of the candidate's executed work, or may even take the form of the special examination for the Associateship, the Board of Education having power to exempt a candidate from such subjects as his executed works may show him to be proficient in. I do not want to weary you with this subject, but I do think it most desirable that as many members as possible should join our ranks, for, firstly, I think we are well worth joining; and, secondly, when we have a large roll of members we shall be much more influential, and can then apply to Parliament for such form of recognition as we think most desirable."

Architects and the Copyright Bill.

In conclusion, Mr. Stokes spoke about the new Copyright Bill, which it is proposed to introduce this autumn, "largely, I believe, to meet the wishes of painters and sculptors, who, I think, are reasonably dealt with in the Bill. Architects, however, come off very badly, for any little right we may now have in our designs is to be taken from us ruthlessly and vested in the building owner. If anyone copies a piece of sculpture the copy can, under the Bill, be destroyed by the original designer. But an architect having once designed a building has no further right in his design whatever. The building owner, however, can, apparently, repeat the design up and down the street, or he can sell it to the promoters of another estate to repeat *ad nauseam* all over the place, and the architect is powerless. This hardly sounds like common justice, but it may be. Again, if I design a chimneypiece and put it in the best bedroom of a house for A, I can never use that chimneypiece for B without laying myself open to prosecution by A. This seems a little hard, as we all know there are numbers of small fittings, like door furniture, bell pushes, and grates, that having once designed an architect likes to feel he can use again and again if he so desires. The new Bill, however, will stop all this.

Presentation to Mr. J. W. Simpson.

Before the president delivered his address, a presentation was made to Mr. J. W. Simpson, F.R.I.B.A., for the gigantic task he had so successfully accomplished in organising and carrying to completion the recent Town Planning Conference and Exhibition. The Institute were very much indebted to him for the enormous amount of time and care he had given to the work, and desired to mark their appreciation of his great efforts. The presentation took the form of a silver inkstand.

SOCIETIES' MEETINGS.

Glasgow and West of Scotland Technical College Architectural Craftsmen's Society.

At a meeting of this society, held in the Technical College, Glasgow, Mr. John Bowman, President, in the chair, Professor Charles Gourlay, B.Sc., A.R.I.B.A., delivered a lecture entitled "Elementary and Advanced Building, or the Differentiation of Elementary from Advanced Work in the Teaching of Building Construction."

The lecturer defined elementary building construction as the study of the fundamental principles of the subject, and the application of these principles in the erection of the most common type of building belonging to the district in which the subject is being taught. Emphasis was placed upon the student's being led to observe the application of principles in the erection of an actual building, instead of simply studying drawings without reference to a building. Advanced building was defined as the study of building materials and the further application of principles to be observed in the erection of less common types of buildings. The lecturer then exhibited a series of slides consisting of two sets of building construction drawings in order to explain his definitions. In the first set he showed the work generally met with in cottages and tenements, which he called elementary, and in the second he showed complete drawings for the construction and finishing of a large house displaying the greater elaboration required in such work, which he described as advanced.

Guild of Architects' Assistants.

Of this Guild, which was inaugurated February 25th, 1909, a programme of meetings has been issued. They are to be held on the second Tuesday in each month, at Prince Henry's Room, 17, Fleet Street, E.C., at 7.30 p.m. The fixtures are as follows:—November 8th (yesterday), J. V. Hibbert, F.S.I., on "The Problem of the Architect's Assistant"; December 13th, H. L. Pridmore, Q.S.A., on the Relationship of the Quantity Surveyor to the Architect"; January 10th, 1911, H. Guicharde Todd, F.S.A.Scot., M.S.A., on "Art and Registration"; February 7th, "A Mock Arbitration Case," in which J. Gerald Large, P.A.S.I., and others, will take part; March 7th, E. J. Dixon, A.R.I.B.A., on "The Town Planning Agitation"; April 10th, H. Cox, A.R.I.B.A., on "Co-operation in Architecture." The address of the hon. sec., Mr. E. J. Dixon, A.R.I.B.A., is 137, Church Street, Edgware Road, W.

Manchester Society of Architects.

On November 2nd the second of the meetings of the session was held, when Mr. Edgar Wood exhibited to the members a fine collection of photographs, fabrics, and tiles which he has collected during a tour made earlier in the year to Constantinople and Athens, as well as some water-colour drawings made during the tour.

On a bird's eye view of Constantinople, Mr. Wood first pointed out the general plan of the city, and indicated the principal buildings, and afterwards described in detail some of the features of Santa Sophia and the mosques which he visited. A very fine example of internal incrustation with tiles instead of marble was the mosque of Rustem Pasha, where the walls are lined with most gorgeous tiles. The general effect he had felt to be disappointing when compared with that of Santa Sophia; for while the tiles were extremely beautiful in themselves, they lacked the dignity of the marble treatment which such interiors call for. The tile treatment of tombs and small structures was, however, very fine. Speaking of the impressiveness of the Mohammedan ritual, Mr. Wood described the splendid effect of the lighting of Santa Sophia. There is what he might call a floor of light formed by a plane of innumerable lamps, nine feet from the pavement, through which the form of the mosaic covered dome can be dimly seen; and as the walls and piers and anything that would seem to give any measure to the height of the building are lost in the dazzling light of the lamps, the effect is one of limitless size and most wonderful mystery. Although the treatment of the apse at Santa Sophia is so successful, the device there adopted of three domed apses opening from the great apse is not followed in the later mosques, where more complicated means are adopted, often resulting in awkward shapes and the loss of the fine simplicity of the earlier form.

The fabrics and tiles which Mr. Wood has brought home are of great interest and beauty, and members were especially glad of the opportunity of seeing his delightful water-colour drawings of Constantinople, and of buildings on the Acropolis at Athens.

J. T. H.

Nottingham Architectural Society.

The Nottingham Architectural Society opened their winter session on Monday evening last week, in their new rooms in St. James's Street, when the presidential address was given by Mr. R. Evans, jun., F.R.I.B.A. Mr. Evans dealt with matters of professional practice He remarked that it was most essential that architects should obtain and keep the confidence of clients, and to do this there must be uniformity of practice, based on professional integrity. To uphold the dignity of the profession the system of professional charges should be above suspicion. It was most necessary that an architect should inspire his client with the idea that he was doing his best for him, and protecting his interests. The president dealt very fully with the Bill shorty to be introduced into Parliament for the statutory recognition of qualified arcihitects.

Referring to the recent Town Planning Conference in London, Mr. Evans remarked that he had inspected the exhibition of plans, and a very amazing exhibition it was. He had come to the conclusion that however greatly improvement in town planning was needed, it must be helped by an alteration in the labour market. New work was severely handicapped by the present heavy cost of building. and until some alteration was made we could not hope to see great developments.

An interesting discussion followed, in which Messrs. Sutton, Bromley, Dickman, Maggs, Holbrook, and others took part. During the evening a silver rose bowl and cigarette case, both suitably engraved, were presented to Mr. W. B. Savidge, A.R.I.B.A., who had served the society as hon. secretary for the past five years.

York and Yorkshire Architectural Society.

At the annual general meeting of the York and Yorkshire Architectural Society, the following officers for the forthcoming session were elected: President, Mr. Samuel Needham; vice-presdents, Mr. A. B. Burleigh, Mr. J. H. Rutherford; hon, treasurer, Mr. R. R. T. Smith; hon. librarian, Mr. A. Cowman; hon. secretary, Harold E. Henderson; members of council, Mr. W. T. Whipp, A.R.I.B.A., Mr. K. Ward, Mr. H. Monkman, Mr. J. Ferguson, Mr. F. Dyer; auditors, Mr. W. M. Carter and Mr. J. Reid.

Institution of Municipal Engineers.

At a meeting of the Council held on October 26th, the following applicants were recommended for admission:—(a) To Membership: S. W. Saunders, surveyor, Devizes R.D.C.; J. T. Davies, surveyor, Little Hulton U.D.C.; J. W. Kirk, deputy highways surveyor and engineer, Westminster; R. Lake, surveyor, Sidmouth U.D.C.; A. J. Webb, engineer and surveyor, Long Crendon R.D.C. (b) To Associate Membership: J. T. Robson, assistant surveyor, Auckland R.D.C. The following students were recommended for admission to the associate-member class:—G. McFadyean, engineer, Helson and Porthleven Waterworks; E. H. Radcliffe, 12, Little College Street, Westminster. (Under the new by-laws these elections will be ratified at the next Council meeting if no written objections are, within 14 days, lodged with the secretary.) Elected to Studentship:—J. H. Marsh, assistant, Worsley U.D.C. From the applicants recommended for admission at the last Council meeting three members and five associate-members were elected, and two students were transferred to the associate-member class. Mr. George Symon was elected honorary librarian for the year 1910-1911.

It was decided that Council meetings should be held alternately on fourth Wednesday at 6 o'clock and fourth Saturday at 3 o'clock in each month, the next meeting being held on Saturday, November 26th, and the number of Saturday meetings being limited to four. The date of the last Council meeting of the financial year was left for the secretary to arrange.

Mr. John Robinson was elected as a delegate to this Association, in addition to the present delegates.

It was decided to award two premiums—one of which has been presented by the President—annually for the best original papers read by members or students before meetings of the Institution.—B. Wyand, Secretary.

The Architectural Association.

At the first ordinary general meeting of the new session of the Architectural Association held on Monday, October 24th, at Tufton Street, Westminster, Mr. Arthur Keen, President, in the chair, the following new members were elected:—

Elections.

Aldous, C. F., Putney.
Archer, H. D., Chelsea.
Atchison, H. P. R., St. Mark's Road, W.
Aylwin, G. M., Farnham.
Baker, H. L. P., St. James', S.W.
Barner, R. A., Wimbledon.
Bedells, H. S. G., Highgate.
Beveridge, W. R., Letchworth.
Bonser, K. J., East Dulwich Grove, S.E.
Bowman, A. W., Kensington.
Braine, R., Westcliff-on-Sea.
Bright, T. L., Gipsy Hill, S.E.
Bromet, M., St. John's Wood.
Carlyon-Hughes, B. J. S. Hutton, Essex.
Church, L. G. A., Epping.
Clark, R. C., Leytonstone.
Cole, L. E., Hampstead.
Coombs, L. D., Highbury.
Cooper, C. M., Emperor's Gate.
Cracknell, A. R., Shepherd's Bush.
Cruickshank, D. E., High Barnet.
Davies, E. C., Bedford.
Day, M., Westbourne Park.
Detmold, F. G., St. James' Court.
Dicksee, H. J. H., Hampstead.
Dowsett, T. W., Southend-on-Sea.
Dubuis, L. G. A., Eccleston Square.
Fildes, G., Kensington.
Furner, A. S. Gordon Square.
Gausden, R. G., Harrington Square.
George, E. J., Clapham Common.
Gordon, D. J. Sevenoaks.
Hale, J. A., Beckenham.
Harkess, W., Bourton.
Hayman, E., St. Albans.
Hodges, J. S., Egerton Gardens, S.W.
Hooper, A. F., Beckenham.
Johnson, R. S., Croydon.
Keen, A. G., Hampstead.
Keith, J. L., Hampstead.
Kelham, C. H. L., Epsom.
Knight, S., Hampstead.
Lamb, H. A. J., Wadhurst.
Leadam, E. G. S., Nevern Square, S.W.
Lipscomb, S. G., Edgware Road, W.
Locke, W. W., Balham.
Lutyens, E. J. T., Battersea Park.
Maeda, M., Cathcart Road, S.W.
Marles, C. W., Marylebone Road, W.
Mee, C. E., Dovercourt.
Metcalf, R., Bedford Row, W.C.
Moerdijk, G., Ladbrooke Grove, W.
Mullins, G. T., Hampstead.
Peermahomed, A. B., Hampstead.
Powell, E. B., Chester Street, S.W.
Prynne, H. F., Ealing.
Ridley, B. W., East Grinstead.
Ridley, G. W., East Grinstead.
Ripley, C. G., Ipswich.
Robinson, N. S., Spilsby.
Satchell, H. S., Ealing.
Schulke, P. C., Islington.
Sheppard, S. M. P., Queen's Club Gardens, W.
Shirley, R. D., Southampton.
Smythe, R. O., Dublin.
Taylor, F. D., Clapham Park.
Tebbutt, H. J., Ealing.
Thompson, A. J., Wandsworth.
Tsuchiya, St. John's Wood, N.W.
Tunnard, H. B., Denmark Hill, S.E
Van't Hoff, R., Chelsea.
Vinycomb, J. K., Brixton.
Von Berg, W. C., South Croydon.
Wallace, R., Marlborough Place, N.W.
Ward, W. H., Theobald's Road, W.C.
Ware, P. M., Portman Square, W.
Wilkinson, W. G., Hampstead.
Wood, H., Stoke Newington.
Woodward, F., Buckingham Street, W.C.
Wornell, J., Slough.
Young, T. J., Westcomb Park, S.E.

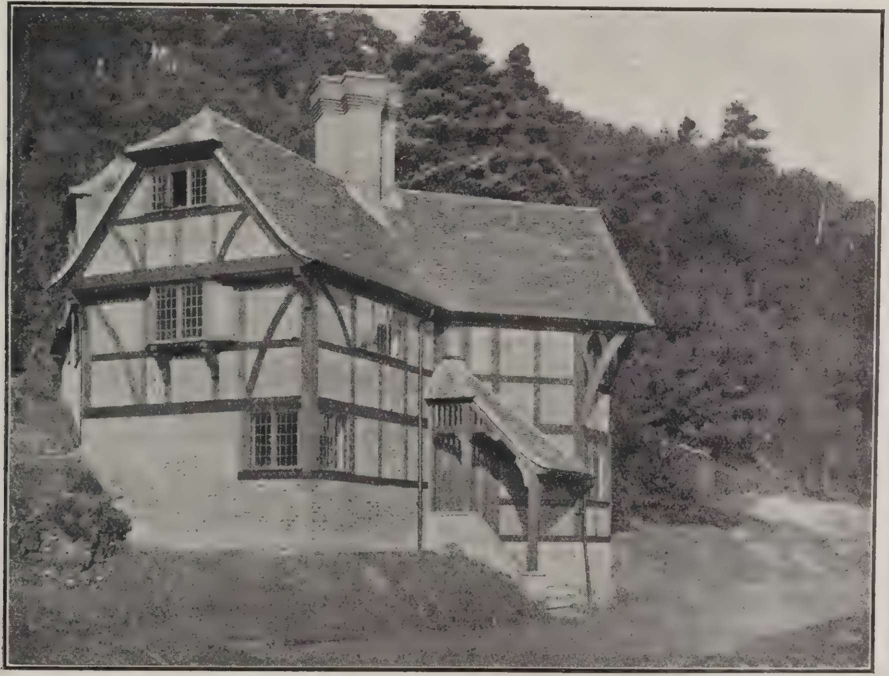
LEGAL CASES.

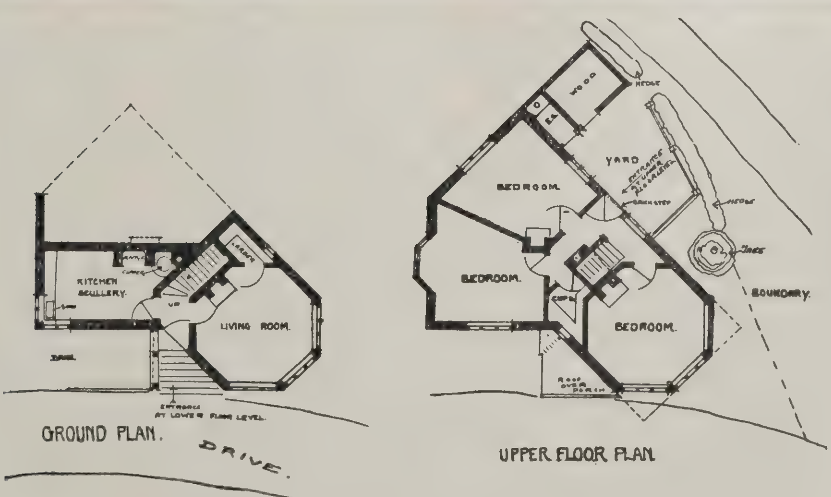
The Position of Sub-contractors.

In Birmingham County Court, before his Honour Judge Ruegg, K.C., Taylor's Cloak Room Fittings and Engineering Company (Limited), 17, Staniforth Street, sought to recover from Thomas Johnson, building contractor, of Great Brook Street, £40 9s. 6d., the balance of £187 15s., the contract price for supplying cloak-room fittings to schools in Raddle Barn Lane, Selly Oak.—Mr. Eales, for plaintiffs, explained that the plaintiffs entered into a sub-contract with the defendants to supply and erect cloak-room fittings in the Raddle Barn Lane schools. The conditions were that the work was to be "completed to the entire approval of the architect." The work proceeded, and from time to time various payments were made, the total being 80 per cent. of the whole contract price. The contract having been completed, the plaintiffs asked for the balance of the contract money. This was refused because they had not the architect's certificate. The architect was under no obligation to give them, as sub-contractors, a certificate, but he had expressed verbal approval.—Mr. Hurst, for the defendant, argued that the expression of approval from the architect was a condition precedent to the plaintiffs' right to sue.—Mr. Eales retorted that if this was so they might never get their money. He called Mr. Taylor, the plaintiff company's manager, who stated that the architect, Mr. Osborne, had expressed his approval of the work to him verbally. He would not, however, do it in writing.—Mr. Hurst objected to such evidence, arguing that it was hearsay in character.—His Honour pointed out that the architect was in the position of the defendant's agent, and admitted the evidence. His Honour asked Mr. Hurst if he was not going to call the architect, who was in court. Mr. Eales had already refused to do so. Mr. Hurst demurred. "Take the bull by the horns," counselled his Honour.—The architect, Mr. Osborne, was then called. He said he could not express approval of the work of the plaintiffs positively. He had, however, expressed approval in a negative form. There was nothing he objected to at this moment. Everything he had objected to up to the moment had been put right. He reserved the right to express disapproval at a later date, however. In the chief contract there was a provision imposing a term of maintenance upon the defendants. Until that was discharged he could not express entire approval of the work done under the sub-contract.—His Honour, in giving judgment for the plaintiffs, with costs, emphasised the fact that it had been held that approval of an architect under the terms of a contract need not necessarily be conveyed in a written certificate.

L.C.C. Work and District Surveyors' Fees.

At the Lambeth Police-court, on October 26th, Mr. Hopkins resumed the hearing of summonses taken out by Mr. Ellis Marsland, district surveyor for Camberwell, against three firms of builders who had carried out works for the London County Council at certain of the council schools, for the recovery of fees which he claimed to be due under the provisions of the London Building Act. When the summonses were last before the Court, in August, Mr. J. W. Godfrey, of the solicitors' department of the London County Council, appeared for the defence, and applied for an adjournment pending the issue of negotiations between the council and the District Surveyors' Association. The council claimed that they were exempt from parts 6 and 7 of the Act, and that there ought to be a reduced fee. Proceedings by other district surveyors were pending. On behalf of Mr. Marsland it was contended that the matter was one which could only be decided by the Court.—Mr. Godfrey now stated that the negotiations between the County Council and the District Surveyors' Association were not yet complete, and he applied for a further adjournment. The association not having yet met to consider the position, he (Mr. Godfrey) asked for a further adjournment for three weeks. Mr. Walter Williams, appearing for the complainant, objected to an adjournment. In another case the court had decided that the district surveyor for Newington was entitled to the fees, and they had been paid. The London County Council had the opportunity of going to the Court of Appeal and did not go. They simply accepted the judgment and paid up. Now the district surveyor of an adjoining district asked to be put in the same position and was met with these applications for adjournments.—Mr. Hopkins said that nothing can be plainer than that whether the County Council is exempt from Parts 6 and 7 or not, they have to pay the scheduled fees at present. If plaintiff pressed for a hearing, he (the magistrate) did not see how he could object.—The summonses were then heard, and orders made without further contest for the fees claimed, with costs.





This cottage is situated on the new drive through the Witley Park Estate, close to Hindhead. The outside walls are of local red bricks, and half-timber filled in with thin bricks in herring-bone pattern. The roof is covered with old tiles. The plan is influenced by the slope of the site and a right-of-way running at the rear, giving access at first-floor level. The architect was Mr. Annesley H. Brownrigg, A.R.I.B.A., of Clay Hill Chambers, Haslemere, and 17, Clifford's Inn, W.C. The builders were Messrs. Chapman, Loury, and Puttick, of Haslemere.

COTTAGE NEAR HINDHEAD, SURREY, FOR BARON PIRRIE. ANNESLEY H. BROWNRIGG, A.R.I.B.A., ARCHITECT.

BETHNAL GREEN'S NEW TOWN HALL.

The new municipal buildings erected in Cambridge Road, by the Bethnal Green Borough Council, at a cost of about £36,000, were formally opened on November 1, by the Mayor (Mr. C. E. Fox). The cost of the site was £8,565, and of the buildings and furniture £27,700. The new structure is designed in the English Renaissance style, with main frontages of Portland stone towards Cambridge Road and Patriot Square. The central features of the Cambridge Road front comprise a recessed balcony, surmounted by a pediment and tower. A full-size seated female figure and two cherubs, modelled by Mr. Henry Poole, of Chelsea, adorn the main entrance. On the Patriot Square elevation is a figure in bas-relief by the same sculptor, representing Justice with sword and scales. On the ground floor are the offices for the staff, while the first floor is devoted to the Council Chamber, Mayor's parlour, committee-rooms, and so on. The Council Chamber is 51ft. in length by 38ft. wide, with a public gallery at the East End. The architects, whose perspective drawing of the building was hung in the Royal Academy last year, are Messrs. Percy Robinson and W. Alban Jones, of Leeds and London, and the builders Messrs. Brand, Pettit, and Co., Tottenham.

STOCKPORT MUNICIPAL LIBRARY COMPETITION.

The Stockport Library Committee invited the submission of competitive designs for a new central library, to cost approximately £9,000. Mr. Percy Worthington, M.A., F.R.I.B.A., was appointed assessor, and premiums of £50, £30, and £20 were offered for the designs placed respectively first, second, and third.

The site upon which it was proposed that the new building should be erected is an area of land bounded on three sides by Wellington Road South, St. Petersgate, and Lawrence Stret, and is at present occupied by the Mechanics' Institute and the Commercial School buildings. The whole of the site had not necessarily to be covered, and the conditions notified competitors that, when extension should be required, it would be on the south side, and that the building should be so planned that such enlargement could be effected without material structural alteration or interference with the disposition of the original departments.

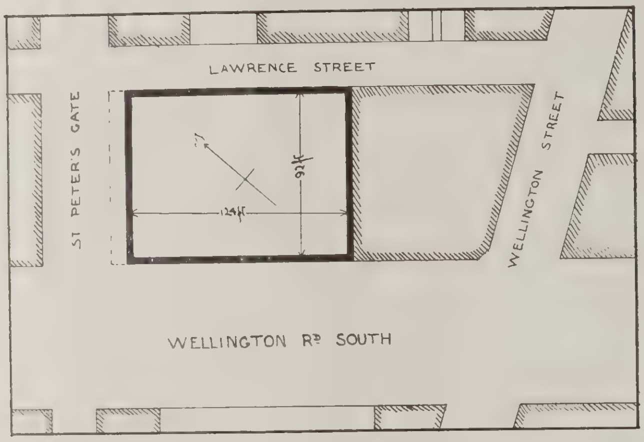
It was suggested that the necessary accommodation should be arranged in the following manner :—On the ground floor, entrance hall, vestibule, staircase, and central hall, round which the rooms should be grouped so as allow as wide supervision as possible by the attendants in the lending library, and for a porter's box in the hall itself; lending library, about 3,300 square ft. in area, providing book storage for 40,000 vols., with book-cases for the immediate storage of 25,000 vols. : this department was to be one storey only in height, and lit solely from the roof; the book-cases were required to radiate fan-shaped from the treble staff enclosure; librarian's room; general reading room, about 2,400 square ft. in area, and with seating accommodation for 160 persons; ladies', magazine, and work rooms—the two former to be in close proximity to each other, and of about 800 square ft. each in area—the latter to have direct access to the lending libary and librarian's room. On the first floor :—Reference library (1,000 square ft.), on the "open access" system; storeroom, for unbound periodicals, etc., in communication with the staff enclosure in the reference library; staff mess room; lecture hall, to hold about 450 persons in the auditorium, and to have separate access from the street; lecturer's room. In the basement :—Children's reading room and minor hall (600 sq. ft. each), to have either a common entrance or two separate entrances from the street; storage cellars for patents; heating chamber, staff lavatories, cloak room, lavatories, stores, etc.

The building might, at the competitor's discretion, be partly of two and partly of three storeys, in order effectively to utilise the difference in levels. The materials to be used externally were red brick of the best quality, and Portland stone.

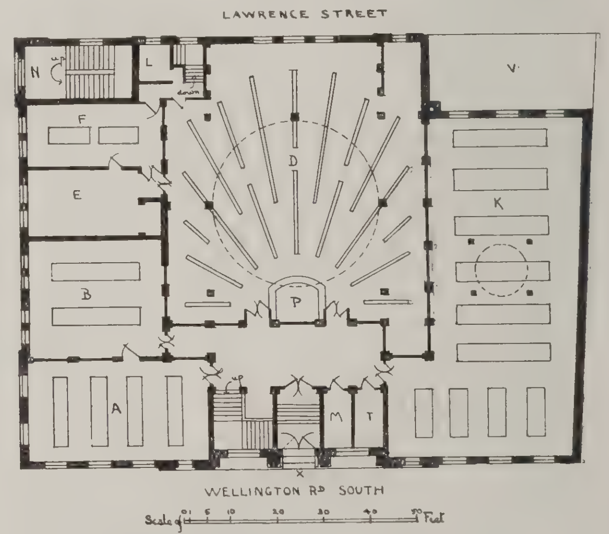
The drawings required comprised plans of basement, ground and first floors, two or three sections, three elevations, all to $\frac{1}{8}$in. scale, and one $\frac{1}{2}$in. external detail. No perspective was to be presented, and all elevations were to be executed in indian ink, without colour or shadows.

To this last provision we feel we must raise objection. We are well aware that it is an exceedingly common practice to include such a clause in competition conditions, but we altogether fail to see how it can reasonably be justified. Both in France and the United States it is an accepted axiom that the actual surface modelling of any monumental design can only be realised—as regards the main lines of the massing and the minor composition and detail—by the application of shadows and through the medium of a fully rendered perspective. The real effect and quality of the work then becomes apparent. We do not believe that any competent assessor in this country would be deceived by the specious brilliance of faked skiagraphic or colour studies.

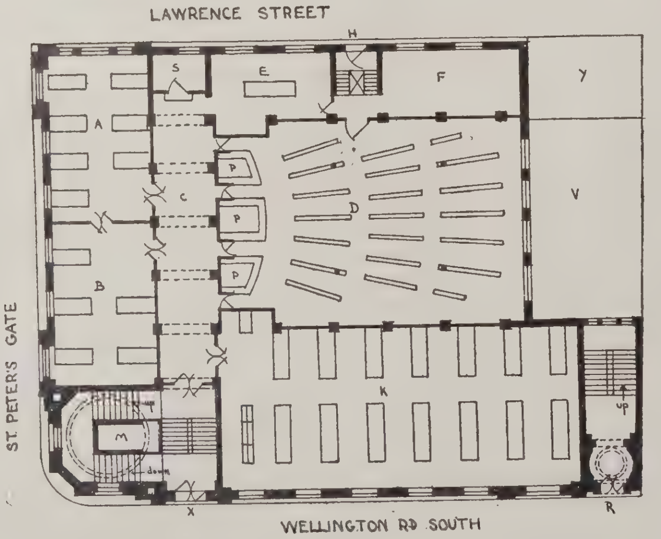
The authors of the design placed first, Messrs. Bradshaw and Gass, 19, Silverwell



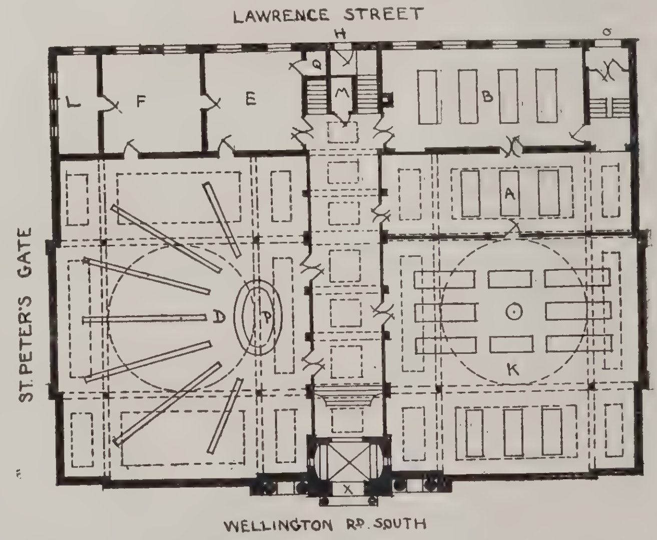
Site Plan.



Design placed second: Joseph Holt, Architect.



Design placed first: Bradshaw and Gass, FF.R.I.B.A., Architects.



Design placed third: G. H. Wenyon, Architect.

A, magazine room; B, ladies' room; C, borrowers' hall; D, lending library; E, librarian's room; F, work-room; H, staff entrance; K, reading-room; L, lavatories, etc.; M, Porter's box; N, staircase to lecture hall; O, entrance to minor hall; P, staff enclosure; Q, safe; R, entrance to lecture hall; S, cleaner's store; T, telephone box; V, future magazine and reading-room extension; X, main entrance; Y, yard.

STOCKPORT LIBRARY COMPETITIONS : PLANS OF PREMIATED DESIGNS.

Street, Bolton, have evolved a compact plan, of commendably simple lines, the cost of which they estimate to be £9,452. As will be seen from the rough sketch, which we reproduce, showing the ground plan of their scheme, they have closely followed the suggestions put forward in the conditions as to the arrangement of the various departments. In the disposition of the rooms in the basement and on the first floor, similar regard for the committee's requirements is also evident. The juveniles' department, lecture hall, and minor hall, are so placed that, whilst full control is always possible, they can be used independently, and without disturbing traffic or study in the rest of the building. Indeed, the inter-relation of the rooms and the access obtained, is in almost every instance exceptionally good throughout the plan. The most serious defects, in our opinion, are the skimping of the accommodation in certain parts, and the imperfect facilities provided for the adequate supervision of the magazine and ladies' rooms. Both these rooms are only under the casual observation of the staff, in the lending library enclosures, from which they are divided by a wide corridor and two surfaces of glass broken up with fairly thick piers. The inclusion of part of the central corridor within the lending library department under the title of "Borrowers' Hall" is certainly ingenious, but a little far-fetched. It is doubtful whether the reading room on the ground floor is sufficiently lighted by the row of windows in the outer wall, though the latter could hardly be enlarged without detriment to the composition of the Wellington Road façade. The shape of the reading room itself is admirable. This apartment and the lecture hall are unquestionably the two best proportioned rooms in the whole plan.

The elevations, in our opinion, are preferable to those of either of the other two premiated designs, both in regard to the management of the chief masses and the relation of solids to voids. The contrast of the masonry and brick surfaces shows some appreciation of the possibilities of colour and texture values. The chief weakness is to be found in the detail. The difference between constructional and transitional mouldings does not appear to be sufficiently appreciated, and horizontal architraves are everywhere merged into obtrusive slabs and blocks. Greater regard for the modern American manner and its insistence on purity of contour, would, we feel, have materially added to the distinction of the design. It is, nevertheless, within the inevitable limitation of cost, an able solution of the problem, and the working out of the elevations in relation to the corner feature is a performance of more than ordinary merit.

The scheme to which the second premium was awarded, the work of Mr. Joseph Holt, 9, Albert Square, Manchester, is in the main a thoroughly workable arrangement. By placing the main entrance centrally on the façade to the most important thoroughfare (Wellington Road South), and utilising the lower level, or St. Petersgate end, for the minor hall and children's reading room, a certain simplification of difficulties is attained. The grouping of the departments round the central hall is more readily managed, and in the case of the children's reading rooms, etc., in the St. Petersgate part, sufficient light is obtained without having to resort to pavement lights. From the sections it is evident that especial care is devoted to the prevention of the passage of sound vertically through the building. The ground and first floors are constructed of reinforced concrete, with false ceilings below, carried on metal and separated from the underside of the floor by an air space. The lighting of the lending library by a central dome is effected in a manner calculated to provoke criticism. Large piers, necessary for the support of the ceiling, from which the dome springs, conflict in one or two instances with the positions of the radiating bookcases, making access to books on some shelves a matter of inconvenience. The same objection applies also in the general reading room, where piers carrying a smaller dome encroach on the space required by persons using the tables. As these piers are not blacked on the plan, but merely outlined, the defect is not realised at first. The fact that on two sides of the lending library a central pier occurs hardly tends to make the arrangement more tolerable. The lecture hall on the first floor is, we think, too narrow to be either æsthetically or acoustically satisfactory. The proportion of the three windows at the platform end would also bear reconsideration. Such supervision as is provided for the children's reading rooms seems to us quite inadequate, the more so in view of there being direct access to the room from the street. Owing to the plan extending to the extreme edge of the site, the north and south walls of the general reading room are not parallel, a circumstance which could not have failed to be disagreeably apparent in actual execution.

The elevations suffer to some extent through being worked out independently of the plan. Thus, of the three large windows to the first floor above the main entrance, two light the landing of the public stairway, whilst the third is required for the reference library. On the same wall of the library, and adjacent to this window, is a smaller one, high up under the ceiling. Then follows a row of different windows at another level. The room is thus lit by three types of openings, varying both in size and position, and all on the same wall. The internal effect we are convinced would not be happy. Again, the semicircular ground-floor window, on the right-hand side of the public entrance, is divided by the partition screening off the porter's room from the telephone box, and the similar aperture on the left-hand side is apparently crossed by the main stairway. The character of the façades themselves is negative to a degree, and the banal coarseness of the detail is intensified by the nature of the draughtsmanship.

Mr. G. H. Wenyon, Castle Hill, Dudley, the winner of the third premium, in departing somewhat from the suggestions embodied in the conditions, has taken the fullest advantage of the slope of the site. Instead of placing the lecture hall on the first floor, as the authors of the other two premiated designs have done, he has included it in the basement, together with the children's reading room, patents store, etc., and relegated the minor hall to the first floor. The lecture hall has two separate entrances, so that its use does not interfere with the public access to the lending library. In order to exclude street noises in so far as practicable, an outer vestibule is attached to the main entrance; and with the same end in view, none of the library rooms are provided with windows on the St. Petersgate and Wellington Road sides of the building. A complex system of top lighting (not conducive to good cross-ventilation) is adopted, except in the case of the ladies', work, and librarian's rooms, which have windows towards Lawrence Street. Above these departments are placed the reference library, store and mess rooms, and the minor hall. These, therefore, rise above what is practically a single storey building, toward Wellington Road. Though this arrangement was doubtless suggested by the committee's indication that a structure consisting partly of two and partly of three storeys might be attempted, the asymmetrical result is distinctly unfortunate. The St. Petersgate façade becomes unbalanced, with no resolution of parts. The large unbroken wall spaces obtained on each side of the library entrance are treated simply as surfaces of rusticated masonry, and no monumental possibilities are realised. The manner of emphasising the entrance is such as is usually associated with provincial institutions. A segmental pediment is surmounted by female figures discreetly robed and allegorical in intention. It is flanked by very Roman Doric columns, whose capes are embellished with Dutch drops. Metal gates of the Edwardian sort complete the whole. The design shows close attention to all questions of convenience, safety, and hygiene, but is not, from our point of view, æsthetically admirable.

Amongst the other work submitted is a carefully finished design by Mr. Alfred W. S. Cross. It is worked out in Mr. Cross's characteristic Georgian manner, and like all his work, is quiet and pleasant. The intercolumniation of the Doric portico is perhaps a trifle too wide, and the rusticated piers substituted for *antæ* require strengthening.

Messrs. Halliday and Paterson, Stockport, present a conception possessing real breadth and largeness of idea. It is a little immature and unresolved in parts, but the scale is well preserved, and there is no meretricious abuse of elementary motives. The detail is comparatively pure.

One of the most logical and comprehensive plans is the work of Mr. R. Wynn Owen, Liverpool. The arrangements for supervision are practically good, and conducive to the most efficient control of every department.

Mr. Henry T. Hare, Bloomsbury, submitted a scheme of marked simplicity, in which the elevations are of the admirable kind we have learnt to expect from his hand.

COMPETITIONS.

Kingstown (co. Dublin) Library.

Mr. G. C. Ashlin, R.H.A., F.R.I.B.A., assessor in the competition for the proposed Carnegie Library to be erected at a cost of about £1 000 at Kingstown, co. Dublin, awarding first prize (£50) to plan 6, and second prize (£20) to plan 33, the construction committee of the urban council have confirmed the award. The successful competitors are: 1, O'Callaghan and Webb, South Frederick Street, Dublin; 2, George William Moorfield, Liverpool.

Deptford Central Library.

The Public Libraries Committee of Deptford Borough Council have recommended the issue of advertisements inviting London practising architects to forward their names to the town clerk, with particulars of any similar buildings which have been erected under their supervision; that the replies be submitted to the Libraries Committee for the selection of twelve architects, who will be invited to submit designs; and that the President of the R.I.B.A. shall be asked to assist the Council in preparing conditions governing the competition, and to submit three names from whom an assessor may be selected. It is proposed to pay a merged premium of £50 to the winner of the competition, with £30 and £20 respectively to the second and third designs.

Alterations at Town Hall, Maesteg.

The premiums in this competition have been awarded by Maesteg Urban District Council as follows: 1 (£25), E. W. Burnett, Maesteg; (2), Thomas Gibb, Port Talbot.

Library and Art Gallery, Manchester.

Professor Reginald Blomfield, A.R.A., F.R.I.B.A., has been nominated assessor in the competition for designs for a library and art gallery to be erected on the old infirmary site, Manchester.

LIST OF COMPETITIONS OPEN.

NOV. 15. TOWN PLAN FOR ESTATES AT RUISLIP AND NORTHWOOD.—Particulars in our issue for October 19th.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in our issue for October 12.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE.—Particulars in our issue for October 12.

DEC. 5. RHOSNEIGR, ANGLESEY.—Plans and specifications are invited for water and sewerage schemes for the village of Rhosneigr. Particulars from Owen J. Hughes, Clerk to the Valley R.D.C., Bryncuhelyn, Llanerchymedd, Anglesey.

DEC. 14. DOUGLAS (ISLE OF MAN).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

DEC. 31. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A. (who objected to the conditions), in our issue of November 2nd.

FEB. 1, 1911. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

MARCH 15, 1911. THEATRE AT SAN SALVADOR.—A competition, open to the architects of all countries, is announced in connection with a projected new theatre at San Salvador. The author of the first premiated design is to receive 8,000 francs, and 4,000 francs will be awarded as a second prize. Particulars in our issue for October 26.

COMING EVENTS.

Thursday, November 10.

UNIVERSITY COLLEGE, LONDON.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: the Coming of the Italian Influence." 6 p.m.

Friday, November 11.

GLASGOW TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY.—Debate on "The Business Relations of the Architect, Measurer, and Contractor." 8 p.m.

Monday, November 14.

SURVEYORS' INSTITUTION, 12, Great George Street, Westminster.—Opening Address by President, Leslie Robert Vigers, 8 p.m.

BRISTOL SOCIETY OF ARCHITECTS.—G. H. Oatway on "Fountains Abbey."

ARCHITECTURAL ASSOCIATION.—Gerald C. Horsley, F.R.I.B.A., "That Fine Draughtsmanship Conduces to Fine Architecture." 7.30 p.m.

Tuesday, November 22.

INSTITUTE OF SANITARY ENGINEERS.—Nandy Hoskins, M.S.E., M.R.San.I., on Hydraulics and Hydrostatics. 7 p.m.

Monday, December 5.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—Reginald Blomfield, A.R.A., on Pierre Lescot and Jean Goujon.

LIVERPOOL ARCHITECTURAL SOCIETY.—Albert H. Hodge on "Architectural Sculpture." 6 p.m.

NEW BUILDINGS.

PROPOSED AND COMPLETED.

Oxford.—The new hall at Radley College, which has just been opened, has been built from designs by Mr. T. G. Jackson, R.A., and forms, with the chapel and connecting cloisters, three sides of a quadrangle. Since the building of the chapel there have been constructed two new houses, studies, science schools, a cricket pavilion, and bath-rooms, while the whole kitchen and sanitary arrangements have been reconstructed. With a new museum and music school the buildings would be complete.

* * *

Southport.—Mr. Edgar Dudley, F.S.I., on behalf of the Local Government Board, has held an inquiry at the Southport Town Hall into an application by the Corporation to borrow £5,250 for the purchase of property in Eastbank Street, for the purpose of municipal buildings, and for £600 for the provision of public conveniences at Hesketh Park.

* * *

Wednesbury.—The competitive plans prepared by Messrs. Scott and Clarke, architects, Wednesbury, for a new Primitive Methodist Church and Schools, which are shortly to be erected in Vicarage Road, have been accepted. The church, which will provide accommodation for 300 persons, is of Gothic design, and the whole scheme will involve an expenditure of £2,000.

* * *

Wyke, Bradford.—New baths for Wyke, of which the memorial stone has just been laid, will comprise a swimming bath 60ft. by 20ft., thirty-five dressing boxes, ten douche baths for children, a soap bath, and six slipper baths. On the first floor there will be a reading-room and a public library. The swimming pond is to be formed of reinforced concrete. The cost to the ratepayers will be £2,900, £700 having been given for the building, whilst the alterations would cost £2,200.

* * *

York.—The building operations in connection with the new headquarters of the West Riding Garrison Artillery and Transport and Supply Column, etc., to be erected in Burton Stone Lane, York, have been commenced. The west elevation has a length of 146ft. and the building extends back 127ft. Mr. W. H. Brierley, F.S.A., is the architect, and Mr. Wm. Birch the contractor.

* * *

York.—The new Wesleyan Sunday Schools, situate in Acomb Road, have been formally opened on completion, and were erected at a cost of £3,400. The site, upon which there remains much available space for further buildings, cost about £900. The buildings are constructed of ordinary clamp bricks, relieved by red strings and arches of sandstocks. Accommodation is provided for between 400 and 500 children in eighteen classrooms, including a large infants' room, and the main assembly hall, with gallery, will accommodate 400 people. Mr. T. Monkman of Micklegate, was the architect, and the following were the contractors:—Brickwork, Messrs. F. Shepherd and Son; joinery, Mr. Mansfield; slating, Messrs. J. Dodgson and Son; plastering, Messrs Isaac Young and Son; plumbing, etc., Mr. J. H. Shouksmith; painting, Mr. R. Pearson, all of York; hot water engineers, Messrs. Richardson and Co., Darlington.

* * *

York.—The York Board of Guardians has adopted the report of the Building Committee, recommending the acceptance of plans for alterations at the workhouse to cost £12,000. The alterations, which are proposed under pressure from the Local Government Board, include a new labour yard and test workshops, new porter's lodge, tramp wards and receiving wards, a new administrative block, and a remodelling of the maternity ward.

THE CHEAP COTTAGE PROBLEM.

MR. ST. LOE STRACHEY'S SOLUTION.

Mr. J. St. Loe Strachey, editor of the "Spectator," has erected two cottages at a total cost of £300, on his estate at Newlands Corner, Surrey, which is situated 600ft. above sea level. The situation necessitated extra expense in haulage. Moreover, if the soil had been gravel or sand, the expense would have been reduced by £16, bringing the cost down to the remarkably low figure of £284 for the two cottages. The experiment, Mr. Strachey told an "Express" representative, "was by way of an answer to the anti-smallholderites who constantly stated that it was impossible to build a pair of cottages for less than £450. The following table gives details of the manner in which I succeeded in keeping the cost down to the stipulated price. It must be remembered that to build a pair of cottages costs more in proportion than building a large number:—

Making plans and setting out cottage	£ 2	10	8
Digging gravel and sand, and haulage to site	16	2	0
Making the concrete blocks, including cement	65	15	2
Digging footings, building walls, including cement	39	17	3
Making doors and windows, including timber and fittings	35	7	1
Framing joists and floors, partitions, and roof, including timber	52	15	5
Tiles for roof and lead for gutter and fixing same	23	6	1
Making and fixing stairs and linings and shelves, including materials	13	19	7
Lathing and plastering, including materials	31	11	9
E.C. fittings, sinks, coppers, cooking stoves, grates, eaves-guttering and pipes, and staining and varnishing	13	2	5½
Builder's profit, to cover use of tackle	5	12	6½
	£300	0	0

"The whole of the work was carried out by a local contractor, who took time and care over every detail, with the result that the cottages are by no means 'jerry built,' and provide most comfortable homes.

"On the ground floor there is a large kitchen-sitting-room, with a scullery adjoining. The fireplace and stove are situated near the scullery, so that the kitchen is merely used for cooking while the actual preparations take place in the scullery.

"This means that only one fire is used, which saves a great deal of expense to the householder.

"On the first floor there are three bedrooms, all light and airy. I made room for three bedrooms, because I consider that this is most important from a hygienic point of view.

"The exterior of the cottages is very simple, and this is where a great deal of money was saved, for in most modern cottages builders go for outside effects, which are both costly and useless. Concrete block was the material used, and it has proved both inexpensive and satisfactory."

The chief problem which the smallholder has to face is the housing problem, and it is thought that the £150 cottage will solve this difficulty.

CONCRETE AND STEEL SECTION

(MONTHLY.)

Institution of Civil Engineers and Reinforced Concrete. The publication of an interim and preliminary report of the Special Committee in Reinforced Concrete appointed by the Institution of Civil Engineers, with which we have dealt briefly in a previous issue, calls attention to the belated interest in the subject displayed by that Society. No direct reference is made to the work of the Joint Committee in Reinforced Concrete appointed by the Royal Institute of British Architects, which issued a valuable report in 1907. The Institution of Civil Engineers refused to appoint representatives on that Committee, and seem to be piqued that they should have been forestalled, and perhaps they feel that it is presumptuous of architects to deal with what is to a large extent a matter of engineering. But really we find it impossible to congratulate the Institution on the steps it has taken. The experimental data recorded are incomplete, and the historical references are inaccurate or incomplete. Much space is devoted to a few specialists' practice, while other older and important specialists are omitted. There is a certain amount of original information included, it is true, which it is useful to have, but on the whole the report is disappointing, and we suggest that the committee might be strengthened.

Sand in Concrete. There seems to be a difference of opinion among engineers regarding the quality of sand that should be employed for reinforced concrete. First, it must be remembered that sand, or any equivalent material such as pulverised stone, powdered brick, slag or coal cinders, is mixed with Portland cement primarily as a diluent, i.e., to reduce the cost of the mortar, though it serves another important purpose in reducing the contraction in setting and hardening that is so considerable where pure cement is used. The strength of a mortar is, however, chiefly dependent upon the richness in cement, though another consideration must not be lost sight of, namely, the density of the resultant compound. In this country we find specifications for sand generally treating material as coming within that designation if it ranges from 3-16ths in. down, but the German Concrete Society calls all particles from 2-7ths in. down "sand," and American practice seems to favour 1-5th in.

Specifying Sand. It would appear from tests that ¼in. to ⅛in. is the best size of sand for concrete work. That would be a very serviceable range to insert in specifications, for sand below ⅛in. could be used for brickwork mortar; and where, on any job, the sand had to be specially sifted, that rejected from the concrete sand would be available for the brickwork, of which the walls of reinforced concrete frame buildings are now usually built. In engineering works, matters could be differently arranged. Most specifications require sand to be "sharp." That is by common consent a dead letter, and should be discontinued. All natural sands which are either ocean and lake sands or glacial sands are rounded, the action of the elements naturally rounding them. As the word "clean" is also usually inserted, there seems no reason for its retention. "Gritty" has been suggested as a substitution for "sharp," but if the word "coarse" is used it has no additional signification. We should do well then simply to insist upon sand being "clean and coarse."

Objection to Glacial Sands. Glacial sands should not be used for concrete. They are usually later geologically in formation to ocean or lake sands, and contain soft and friable constituents from the rocks from which they were derived by abrasion that have not been recovered by solution as in the latter case. Particularly do they contain mica, hornblende, and felspar from granite, which are deleterious in their action on cement, decreasing its strength, and perhaps, if present in sufficient quantity and finely divided, preventing its setting. Such glacial sands are usually found in the interior of countries. Many sands removed from pits are of course derived from the beds of former lakes or seas, and are water worn, and quite suitable for use. Such is our standard Leighton Buzzard sand. Many sands contain loam, and are often called dirty. If that loam does not consist, in greater or lesser part, of mica or felspar, and consists of finely divided particles of silica and alumina, it may cause little or no loss of strength, and in some circumstances may be actually advantageous by increasing the strength of the mortar or concrete. That is, however, a different thing from saying that "dirt" such as organic matter, mica, mould, can be ignored in connection with concrete. The only circumstances where loam or clay is advantageous is with a weak mixture in which the voids in the sand are not filled by the cement. If sand consists of particles all of one size, it will contain about 50 per cent. of voids, and if graded may contain about 35 per cent. In the former case, suppose the proportions of the mortar be 1 : 3, we see that the cement is insufficient to fill the voids, and in such cases up to 20 per cent. of clay has been found by experiment to increase the strength, because it fills the voids and increases the density of the mortar, and of the concrete made therewith.

Proportions for Reinforced Concrete. In reinforced concrete work we do not usually employ a weaker proportion than 1 : 2, so in such cases we always have an overplus of cement, and the voids completely filled. In that case, loam or clay is, if anything, a detriment, and certainly is if present in large proportion. The best sand should not contain more than two per cent. of loam. Tests have conclusively shown that the larger the grains of sand the stronger the concrete, the reason being that the surfaces requiring covering with cement are less with large grains than with small grains, but some little grading is preferable to reduce the percentage of voids, and make the cement go further. The range should, however, be from about ⅛in. to ¼in., as before mentioned.

THE CONCRETE INSTITUTE.

THE MANUFACTURE OF PORTLAND CEMENT.

BY A. C. DAVIS, F.C.S., ASSOC.INST.C.E., M.C.I.

The following is an abstract of a paper under the above title which was read by Mr. A. C. Davis at the twelfth ordinary general meeting of the Concrete Institute held on Thursday, October 27, at the Royal United Service Institution, Whitehall, London, S.W. :—

Its Invention.

Portland cement having been originally invented in England some three-quarters of a century ago, the British makers adhered solidly to old-fashioned methods for some decades, but these have now at last had their day, and it has been only within the past ten years that the British cement maker has awakened to the seriousness of foreign and home competition.

For some years we have been actively engaged in building modern cement works and putting down up-to-date plant in our obsolete factories, with the result that for quality of product, combined with low cost of production, the British manufacturer has nothing to fear from over-sea competitors, and British Portland cement to-day has no rival in quality the world over.

First Used in Thames Tunnel, 1828.

It is safe to assume that one of the Thames tunnels, constructed in 1828, was the first engineering work of importance in which Portland cement was used. The price at that time was, by the way, 21s. per cask at the works, and to-day a much superior quality product can be purchased at some 4s. per cask, so much have the conditions of the industry altered in the past three-quarters of a century.

What Portland Cement Is.

Now, what is Portland cement? The term "Portland" is limited to an hydraulic cement containing a large percentage of lime, and at once distinguishes the valuable constructive material bearing that title from other cementitious substances.

The British Standard Specification defines Portland cement in the following terms:—"The cement shall be prepared by intimately mixing together calcareous and argillaceous materials, burning them at a clinkering temperature, and grinding the resulting clinkers."

Centres of Manufacture.

The centres of the manufacture of Portland cement are well distributed over the country.

The normal size of a factory is one having an output of some 500 to 1,000 tons of Portland cement per week, and in this country alone we have some eighty cement companies, with a total output of some 3,000,000 tons of cement per annum.

Necessary Constituents.

Portland cement can be produced from any raw materials containing constituents capable of yielding by calcination the silicates and aluminates of lime which form its chief components, and the necessary constituents of these raw materials are lime, silica, and alumina. Small additions of iron oxide are desirable for fluxing these materials.

In manufacturing Portland cement, carbonate of lime and clay are first efficiently and accurately amalgamated in certain fixed proportions, either by the addition of water to the raw materials or by the fine grinding and mixing of the same in their dry state.

The composition of a prepared mixture of these raw materials should be roughly three parts of chalk to one of clay.

Now the various raw materials employed in the manufacture of Portland cement at the present day may be described as follows:—

Thames and Medway District Materials.

In the Thames and Medway districts the chalk formation on the banks of these rivers is quarried, and this material is mixed with the deposits of mud found in the estuaries and creeks.

Cambridgeshire Chalk Marls.

The chalk marls round Cambridge have been well proved to be eminently suitable for the manufacture of a first-class quality cement. The "marl" is a deposit of calcareous and argillaceous material found at the base of the local chalk. The chalk marl of Cambridgeshire, though the relative quantities of chalk may vary from yard to yard in depth when testing on the face of the quarry, contains in the aggregate about the same proportion of calcareous and clayey material as is obtained artificially by the mixture of chalk with alluvial mud in the Medway Valley. Therefore, along the outcrop of this chalk marl, cement works have of recent years proved the value of the Cambridge deposit from a cement-making point of view.

Lias Formation.

In the cement-making districts of Rugby and South Wales we have the well-known Lias formation of limestone and shale, and this is successfully treated for the manufacture of Portland cement. The thin layers of these materials with their variation in composition must, similarly, be very accurately and efficiently dealt with. In working the Lias formation it is found that the preponderance of shale in proportion to limestone (which is generally found to contain 78 to 85 per cent. of carbonate of lime) renders the cost of working heavy because of the removal of surplus clayey material not required in the manufacture.

Northern Works and Materials.

On the Tyne, Wear, and Tees, and in the North of England generally Portland cement is manufactured from chalk imported from the Thames, Medway, or Sussex districts, and this is mixed with a local clay found on the site of the works. From this mixture a good quality cement is manufactured.

U.S.A. Materials.

In the United States most of the cement produced is from the Lehigh Valley argillaceous limestone, and which contains rather more clay than is required for a correct mixture. To this a small amount of pure limestone, usually 10 to 20 per cent., is added to bring the mixture up to the necessary percentage of calcium carbonate required in the manufacture.

Germany's Materials.

In Germany the raw material consists of chalk marl.

Three Primary Processes.

The primary conditions of any method of Portland cement manufacture are that the raw materials shall be (1) correctly proportioned, (2) finely comminuted, and (3) thoroughly mixed.

The proportions of chalk and clay must be kept to a standard as closely as ever possible, work which at the present time in the most successful cement works is carried out under the supervision of the works chemists.

The reduction of the raw material depends chiefly upon their character, so that the details of the methods adopted by manufacturers for grinding generally vary with the raw materials used.

There are two principal methods of reducing and mixing the raw materials, namely:

First, by the "Wet Process," applicable only to soft materials, the correct quantities of the raw ingredients being ground and mixed by the aid of a considerable amount of water.

Secondly, the "Dry Process," in which the perfectly dry materials are ground together to an impalpable powder or "flour" and subsequently mixed to correct chemical proportions.

Burning or Calcining.

The next stage in the manufacture of Portland cement following the scientific and mechanical preparation of the raw material is that of burning at a high temperature, or calcining, the raw product at a point of slight vitrifaction, resulting in what is commonly called a cement "clinker."

The proper degree of burning is indicated by the formation of a dense greenish-black clinker when coming from the kilns. Light-burned clinker is brownish and soft, while over-burned clinker is fused and slag-like.

The aggregate temperature in the process of calcination shows that for normal Portland cement burning a heat is required in the kiln amounting to 1,400 degs. Centigrade, or 2,500 degs. Fahrenheit. This temperature is variable, according to the percentage of carbonate of lime contained in the raw materials, namely, the higher the proportion of lime the higher the temperature which is necessary to produce complete diffusion in combination with silica.

Intermittent and Continuous Kilns.

The kilns for burning the raw materials are always constructed for either an "intermittent" or "continuous" process. The intermittent kilns require loading and drawing, and demand the shutting down of the kiln during the drawing operation. This method of manufacture is one that will soon be discarded.

But in the continuous kilns, the burning of the raw material proceeds without a break, and the drawing of the clinker takes place at the same time without interruption, thus making a continuous process.

In the category of continuous kilns we come to the process of burning by the rotary kiln which has been lately brought into use. The manufacture of cement by the rotary kiln may be said to have revolutionised the industry, and this method of burning the raw materials is perhaps the most scientific and practical invention that has been introduced into the manufacture since Portland cement was first known.

The rotary kiln consists of a slightly inclined steel or wrought-iron cylinder, usually from 100 to 150ft. in length and 6 to 8ft. in diameter, and is inclined to the horizontal at about 1 in 30.

The kiln is lined with radial firebricks, some 9in. in thickness, and the long cylinder is mounted on tyres running on rollers and slowly rotated by gearing.

The cement-making materials are continuously fed into the kiln through a pipe at the upper end in the form of either liquid mud or dry powder, according to the process adopted in preparing and mixing the raw materials. Finely ground coal is almost always used as fuel, and this is introduced into the lower or outlet end of the kiln by a jet of air issuing from a blast fan.

The raw material as it gradually descends into the zone of heat generated by the perfect combustion of the finely ground coal fed into the cylinder from the opposite end parts with any carbonic acid, forms little rounded balls which reach a nearly white heat in the lower third of the kiln, and finally issues at the lower end as well-burned clinker in grains about the size of a large pea. The greatest heat is naturally near the fuel-jet or outlet end of the kiln. The hot clinker from the kiln is cooled either by being elevated to cooling towers or by rotary cooling drums.

Clinker Grinding.

Now, to proceed with the manufacture of Portland cement, and whilst arriving at the succeeding and final stage in the process, we now have the grinding into an extremely fine powder of the clinker which comes from the kilns; and this process has exercised quite a large proportion of ingenuity during the past few years.

The true test of quality in a cement to-day is the fineness to which the cement is ground.

In modern works the preliminary grinding of cement clinker is carried out by the ball mill, and from this mill the coarsely ground material is conducted to a tube mill which finishes the fine grinding previous to storing the cement.

The finished cement is ground sufficiently fine to pass through a 76 by 76 mesh sieve with about 1 per cent. residue, and although finer grinding is rarely demanded, it can be readily accomplished by the manufacturer if necessary; but this means a reduced output from the plant.

Stores.

From the grinding mills the cement is conveyed into the stores, and after it has cooled down the material is ready for loading out at the factory.

As to the storage of Portland cement, it is generally considered that the longer the cement is kept in stock the more reliable it is to be found in use; but the modern product of to-day's manufacture requires neither storage nor aeration to provide and ensure the success of its quality.

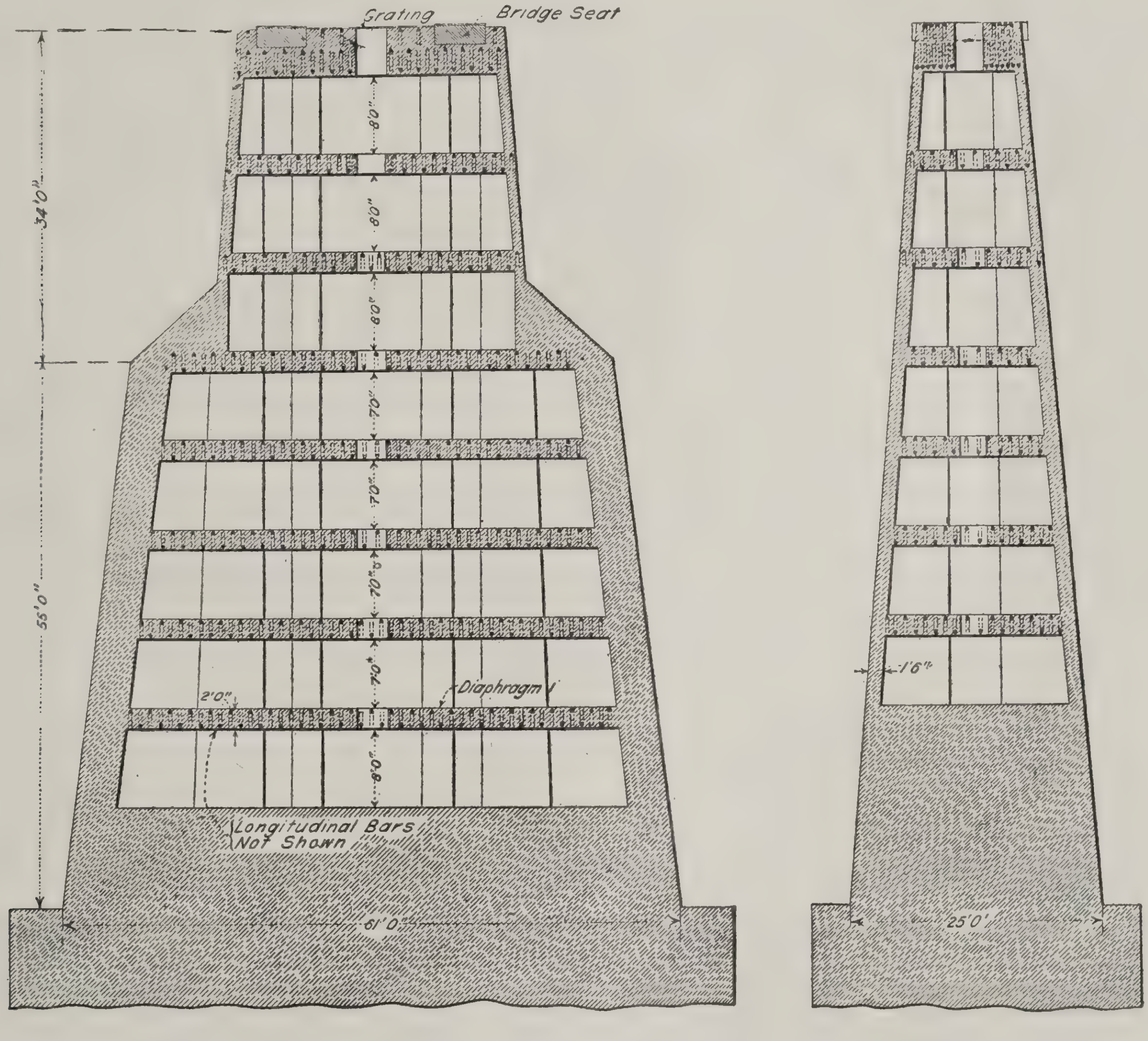
CONSTRUCTING A TALL BRIDGE PIER IN REINFORCED CONCRETE.

A reinforced concrete bridge pier, 165ft. high, has been built recently in the Willamette River on a branch line of the Southern Pacific Company near Portland, Ore, U.S.A. At the crossing where this pier is located the Willamette River is 570ft. wide, and has a depth of 65ft. in the channel at low water, the depth at the pier being 55ft. The average high water is 25ft. above the low stage, and occasional floods go 8ft. to 10ft. higher. The bottom of the river at the site consists of coarse gravel to a great depth. The bridge in which the tall pier is included embraces two 300-ft. riveted Pratt-truss single-track spans, with inclined top chords. The tall pier carries the abutting ends of the two spans, and the shore ends of the spans are on plain concrete piers, one of which is 73ft., and the other 75ft. high.

The general features of the design of the 165ft. pier are shown in an accompanying illustration. The broad base of the pier is seated on the gravel at a depth of 55ft. below the lowest point of the river bed. The sides of the pier are battered for a height of 12ft., and above that they are plumb for 64ft., and to that height the pier is of solid concrete. The lower 72ft. of solid masonry forms a substructure for the hollow reinforced concrete superstructure 93ft. in height. The superstructure is offset at its base from the top of the substructure, and has pointed ends the same as the latter. The bottom 10ft. of the superstructure also is of solid concrete, while above this massive base it consists of reinforced concrete walls connected by horizontal diaphragms, and with reinforced concrete columns carrying directly the ends of the steel spans. To a height of 55ft., which reaches above the maximum high water of record, the sides of the hollow portion of the pier are battered 1in. to the foot. At that height the pier is offset sharply all round to a smaller section, which is continued up to the bridge seats, with its sides also battered 1in. to the foot.

The outside walls of the superstructure are 18in. thick, and are anchored to the substructure by vertical 1⅛in. rib metal bars 26ft. in length. These bars extend 16ft. downwards into the top of the substructure. Part of them extend upwards to the top of the 10ft. solid base of the superstructure, while those at the columns are continued up into the latter. The side walls of the superstructure are reinforced as vertical slabs spanning horizontally between the columns, and vertically between the horizontal diaphragms, which separate the interior of the superstructure into eight storeys. The reinforcement consists of Kahn and rib metal bars placed so a load can be brought on the walls from either side. The end walls are similarly reinforced with additional horizontal rods tying them back into the columns. The pier contains eight reinforced concrete columns extending from the base of the superstructure to the bridge seats. Four of these columns are built in connection with each side wall of the pier, and together with the walls, carry at the top a 5ft. reinforced concrete slab in which two granite blocks are set as bridge seats.

Between the outside walls of the hollow superstructure are seven reinforced concrete horizontal diaphragms, each 2ft. thick, which are designed as flat plates that may be loaded from above or below. The reinforcement in these diaphragms consists of Kahn bars placed alternately near the upper and lower sides. The lower five diaphragms are spaced 9ft., and the upper three 10ft. apart, so the span of the side-wall slabs between them is short. At the centre of each diaphragm is a 3ft. circular hole which permits the free passage of water between the eight storeys in the superstructure. In one side of the lowest storey is an opening 12in. wide and the full height of that storey, so that water may rise and fall inside the pier, with variations in the stage of the river. The reinforced concrete walls of the superstructure, therefore, are not normally subject to a head of water, but the design provides for any emergency that may occur by including in them reinforcement placed so that a head may be brought against the walls, and diaphragms from any direction.

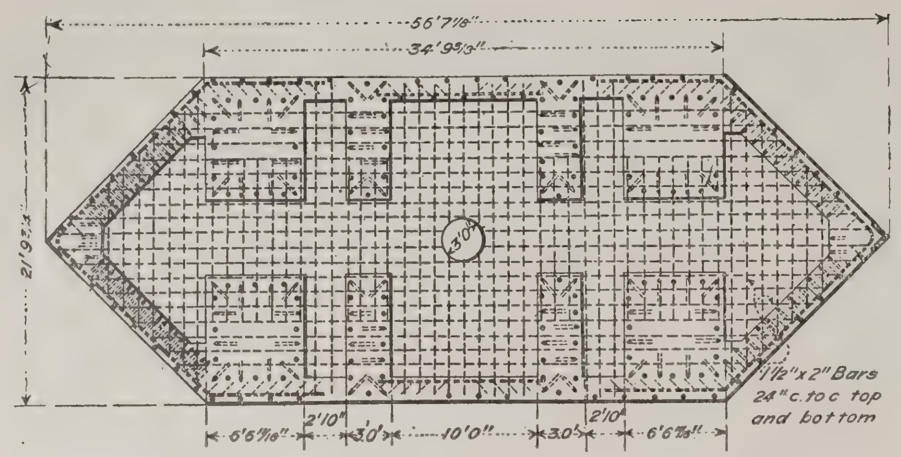


A HIGH BRIDGE PIER IN REINFORCED CONCRETE: LONGITUDINAL AND TRANSVERSE SECTIONS OF SUPERSTRUCTURE.

The pier was built in an open-timber caisson, 90ft. high, which was designed to meet the difficult conditions involved. The caisson was 40ft. 10in. square in plan at the bottom, the same as the base of the pier, and from its lower edge its sides were battered the same as the sides of the base of the pier to a height of 12ft. Above that height the sides and ends were built plumb to the top. The walls of the caisson consisted of 3in. by 10in. planks placed flat and drift-bolted together. The side walls were braced across the caisson vertically at intervals of 5½ft. by solid 10in. by 2ft. 9in. timber sections built up of 3ft. 10in. planks. Triangular pockets were formed in the corners of the caissons by solid 10in. walls, and the sides of these pockets also were braced at the same intervals as the caisson by solid sections of 3in. by 10in. plank. A rectangular pocket, 4ft. 10in. by 19ft. 8in. in plan, was built on both sides of the caisson to provide sufficient space, with the triangular pockets in the latter, for the ballast required to sink and hold the caisson in place.

The outside pockets were tied to the caisson by continuing the cross braces of the latter through its solid walls, and by connecting the projecting ends of these braces with built-up timbers parallel with the sides of the caisson. Vertical studs were placed inside of the projecting ends of the cross braces, and 3in. by 12in. plank nailed on them as lagging for the pockets. The 11 storeys of braces in the caisson and in the pockets were tied together by vertical rods, and knee-braces were placed between the storeys in the pockets. This construction produced a structure that was amply strong under the high head and the swift current to which it was subjected while work on the pier was in progress.

The low stages of the river usually begin in July of each year, and continue until the following February. Work on the pier was started in 1909, with the expectation that operations would be completed before the next high water. The bottom at the site of the pier was first dredged to a depth of 35ft. by means of an "orange-peel" bucket swung from a stiff leg derrick on a barge. Meanwhile, the lower part of the caisson and the ballast pockets were built up on ways on the shore near the work, then launched into the water and towed to place, where the balance of the framing was done in the water. The ballast pockets were filled as the work proceeded so as to keep the top of the caisson about 5ft. above the water. Special care was taken to anchor the caisson exactly in position when the lower edge of it approached the bed of the river.



PLAN OF DIAPHRAGM I.

As soon as the caisson was seated on the gravel, ballast was added to hold it in place, and to sink it as material was excavated from the inside of it. The "orange-peel" bucket was used through the water to remove the material from the inside so the lower edge of the caisson finally went about 20ft. into the gravel and made the form for the base of the pier.

While the sinking of the caisson was in progress, a concrete mixer plant was set up on a barge. As soon as the caisson was down to the required depth, concrete was deposited through the water by means of bottom-damp buckets to fill the caisson uniformly to a height of 72ft. The water was then removed, and the reinforced concrete portion of the pier built in the dry. The walls of the caisson also made the forms for the pier up to the offset in the latter, and above that specially framed forms were built inside.

The caisson was constructed and sunk to place in 20 working days; the concrete seal then was poured, the water removed, and the pier built with all possible speed, because the time of high water was approaching. By working day and night, practically without interruption, the pier was kept above the stage of water in the river, and was completed before the water reached the top of the caisson. Concrete was placed at an average rate of about 200 cu. yd. a day, the 7,000 cu. yd. in the pier being deposited in 35 days. The forms for the hollow portion of the pier were built and erected as the work progressed, since they involved practically the same conditions as an 8-storey building of like size.

Within 25 days after completion of the pier the river began to rise rapidly, and continued until a height of 22ft. above low water was reached. The unusual stage of the freshet resulted in a great number of large logs being brought down, and during the height of it the upper part of the caisson and forms were ripped off by the force of the logs which struck it. The pier stood safely, however, and when the water receded no evidence of damage could be discovered.

The pier was designed and built by Mr. G. T. Forsyth, bridge engineer of the Oregon Railroad and Navigation Company, under the direction of Mr. G. W. Boschke, chief engineer of that company. Mr. John D. Isaacs, consulting engineer of the Harriman lines, acted in a consulting capacity on this work. The reinforcing material and the details of the reinforced concrete design were furnished by the Portland office of the Trussed Concrete Steel Company.

PUBLICATIONS ON REINFORCED CONCRETE.

Concrete Arched Bridges.

The modern elastic theory of arch design is not very easy of application. There have been several books issued recently which show how to apply that theory to reinforced concrete arches, but they still keep the problem in a somewhat abstruse state. There is the fundamental difficulty that arches must first be proportioned by rule of thumb, and then checked by an elaborate theory afterwards, and, as a result of such analysis, the form revised, and then checked again. That renders the design for an arch a tedious operation. It cannot be said that Mr. Balet, in his book, treats the subject as clearly as he might. His diction is involved, and he should study literary expression. He has, however, introduced some novelty of treatment in his analysis of the external forces acting on an arch, and his book is valuable as a fresh contribution to theory, and should be consulted by those who have to deal with arched bridges, either in stone, concrete (plain and reinforced), and steel.

Mr. Tyrrell's work, though showing less originality, and setting out to be of a more practical nature without so much theory, is unnecessarily involved in expression and arrangement.

"Analysis of Elastic Arcades; three-hinged, two-hinged, and hingeless, of Steel, Masonry, and Reinforced Concrete," by Joseph W. Balet. London: Archibald Constable and Co., Ltd., 10, Orange Street, Leicester Square, W.C. Price, 12s. nett. "Concrete Bridges and Culverts, for both Railroads and Highways," by H. Grattan Tyrrell, Grad, Toronto Univ. London; E. and F. N. Spon, Ltd., 57, Haymarket, S.W. Price 12s. 6d. nett.

Applied Mechanics.

There is almost a multitude of books on applied mechanics, and one naturally looks askance at any addition to the number, though not perhaps because the ground has been already completely covered. Indeed, the architectural and structural engineering student has not been properly catered for, and he can see many discrepancies in the well-known text books, too many of which have been compiled by mechanical engineers, and glaringly over-exaggerate the mechanical side of applied mechanics and gloss over in a most disappointing manner the not unimportant branch of structural design. The author of this work, Prof. D. A. Low, is, too, noted for having compiled a "Pocket book for Mechanical Engineers," and might have been expected to go the way of other writers of books on "Applied Machanics." We are agreeably surprised, therefore, to find that his book contains really a fairly adequate treatment of structural engineering, and that almost half the book is devoted to a consideration of the problems of the design of structures. In this the author has been assisted by three able chapters on the design of roofs, plate girders, and braced girders, contributed by Mr. E. H. Salmon, B.Sc., A.M.I.C.E. We like the manner in which Mr. Low has treated the subject; he makes everything clear, and he has not been deterred by difficulties in tackling some of the more intricate problems that arise in practice and are often avoided by text-book writers. He begins with a summary of arithmetical, algebraic, and trigonometrical formulæ, notes on the differential and integral calculus, the construction of various geometrical figures, and a bibliography of the most useful books on engineering subjects. He then treats of motion and force, work and energy, the polygon of forces, and goes on to moments and centroids, simple strains and stresses, beams and bending, deflection of beams, compound strains and stresses, columns and struts, behaviour of materials in the testing machines, stress diagrams, and design of structures. The latter half of the book deals with mechanical engineering and hydraulics, and is admirably done. The only fault we have to find—and that is only from one point of view—is that so much space is given to examples or test exercises, which we would have sooner seen occupied by further information as ably conveyed by Mr. Low as the other. The book is, however, intended for students, and would certainly serve as a very valuable class book. It has, however, very great value to the advanced student and those in practice. We can only wish that the book may soon reach several editions, so that Prof. Low may have the opportunity of adding to the work and so increasing its already high value.

"Applied Mechanics." By David Allan Low, Wh. Sc., M.I.Mech.E., Professor of Engineering, East London College (University of London). London: Longmans, Green and Co., 39, Paternoster Row, E.C. Price 7s. 6d. nett.

Design of Reinforced Concrete.

The performance of calculations for reinforced concrete by the aid of the elaborate rational formulæ now generally accepted is tedious and extravagant without the assistance of various means of economising time and guarding against error. Such means have been put forward by a number of authors in the shape of (1) tables, (2) diagrams or graphs, and (3) calculating instruments. The latter may be dismissed, one and all, as often leading to error, being too cumbersome for ready use, and generally inferior to well-chosen diagrams. Tables also are not so ready of consultation as graphs, and they have the disadvantage of not showing at a glance the relation of quantities one to another, so that an alteration in the design cannot be made with quite such full knowledge and understanding and quickness as a proper diagram enables to be done. The diagrams, however, that have been put forward have generally required some little preliminary calculation to be done, and give an intermediate result which again necessitates for the calculation to get the final result, so that the saving of time has not been quite so much as should be possible. Other diagrams which give a final result have been compiled by other authors, however, but these have generally been drawn up by making various assumptions that are not quite accurate under or do not apply to all conditions, or else give a rather large percentage of error in some cases, so that one is led to distrust them. The accurate diagrams based on the proper formulæ have usually been inadequate. The work we now have under review is the best attempt we have yet seen to compile a series of graphs on the correct formulæ which shall give true and final results readily. This book is one for the designer, and is not a treatise on the subject of reinforced concrete. It consists practically throughout of diagrams and exemplary exercises for reinforced concrete slabs, rectangular and T beams, and columns, and also steel beams. The principle on which the diagrams are constructed is that of partial or step solutions, and is one that is particularly adaptable to the complicated theoretical formulæ of reinforced concrete, as any number of variables may be treated, simply by beginning with any two and plotting the range of variations through which they occur, using values of one as abscissæ, and the results of the combination as ordinates, or vice versa, as found most suitable. With these results, which are already expressed on the diagram, considered as one variable, another variable is brought into combination and plotted, using the results first found just as they may happen to be, either as abscissæ or ordinates, and the second set of results as the other quantity, plotting the second set of values immediately adjoining the first set. Thus any number of variables may be successively treated, giving final results that would be obtained by solving the original formula with any assumed value of any of the variables within the limits of application of the formula. The order of combination of the various quantities will materially affect the use of the diagram, and in plotting those given an effort has been made to so arrange them that when a number of members are to be designed under similar assumptions, the variables that become constant under these assumptions will come first, and thus after the first solution will not have to be repeated. The diagrams in this book are arranged in groups, drawn on logarithmic paper, which greatly facilitates the plotting of this class of diagrams, for the abscissæ and ordinates become rapidly less as the quantities increase in value, thus increasing the range and at the same time keeping the percentage of error constant throughout, instead of increasing it with the small values as is the case when the ordinary cross-section paper is used. The diagrams are drawn for four values of the ratio of the moduli of elasticity of steel and concrete, namely, 12, 15, 18, and 30, and on the parabolic and straight-line assumptions of the variations, and varying stresses in the materials can be ascertained by or adopted in using the diagrams. As an introductory, rules are given for calculating the position of diagonal reinforcements in beams and bending moments. In the latter, however, unequal loading on continuous beams is not dealt with as it should be. The compilation of diagrams for designing does not reach finality by the publication of this book, but it makes a distinct progress, in such diagrams and is useful and commendable.

"Diagrams for designing reinforced concrete structures, including diagrams for sections and strengths of steel beams." By G. F. Dodge, M.Western.Soc.Engs. London: E. and F. N. Spon, Ltd., 57, Haymarket, S.W. Price 17s. nett.

A French Treatise on Construction.

Of the many books on the building of structures, most concern themselves either with the building construction or engineering aspects; but many contractors care little whether it is work of an engineering or building character that they undertake. The two branches, of course, merge into each other, and a student of the art of construction should not confine his attention to either. In France and Germany the subject is differently treated from what it is in England. We find in this country that the books on building construction are not very thorough in their treatment of the strength of materials and of structures, and do not deal with the cost of work and means of carrying it out, nor refer to engineering structures in a serious way; while the books on the engineering aspect also omit to consider the contractor, and ignore building construction. In France, on the other hand (as in this book, for instance), a complete all-round grasp of the subject is aimed at; and, planned on these lines, the work under notice is valuable and instructive for the student and the practitioner. All branches of the whole subject are touched on—the manufacture and occurrence of materials, strength and determination of forces in structures, the methods of contracting and cost, building and engineering construction details, ventilating and heating, sanitation, and planning and architectural design. The original authors, now both deceased, of this work were respectively an engineer and a contractor, and they have certainly shown the advantage of such a combination by the excellence of their work. There are naturally, in a review of the whole subject such as this, many deletions in which much information of importance is omitted, but from the point of view of the student who requires firstly a general survey and then will specialise later, the book is most admirable. The work has been revised in its sixth edition by M. Dariès, who also revised M. Claudel's other book, i.e., his "Aide-Mémoire"—a sort of superior French "Molesworth"—and is now up-to-date, one of the most extensive additions being in respect to reinforced concrete. The book is remarkably cheap at the price, for it contains 1,346 pp. in 8vo., with 1,162 illustrations and numerous tables.

"Pratique de l'Art de Construire." By Professor I. Claudel and L. Laroque, 6th edition, revised by Professor Georges Dariès, Ingenieur de la Ville de Paris. Paris: H. Dunod et E. Pinat, 47 and 49, Quai des Grands-Augustins. Price 22 francs.

Chemical Analysis of Cement.

In the British standard specification for Portland cement it is stipulated that the proportion of lime to silica and alumina shall not be greater than the ratio (calculated in chemical equivalents) represented by $\frac{CaO}{SiO_2 + Al_2O_3} = 2.85$ and in the new (third) edition issued last August it provides for a minimum ratio of 2. The calculation of this hydraulic modulus or ratio of lime to silica and alumina takes a little time, and Mr. D. B. Butler has performed a useful service in arranging a calculator which reduces the labour and time to a minimum. The diagram is ruled off with the percentage of lime as ordinates, and the percentages of silica as abscissæ, the percentages of alumina being on a sliding scale beneath the abscissæ. All that is necessary to determine the hydraulic modulus is to place the zero of the sliding scale at the percentage of silica, and read off at the point on the sliding scale which represents the percentage of alumina, running the eye up vertically until it meets the percentage line for lime. A diagonal line at the junction is marked to at once indicate the hydraulic modulus. Having checked the results with the true chemical equivalents, which are different from those given in the standard specification, and found the calculator accurate, the only criticism we have to make is that it would be better to omit the two lines at beginning and end of the aluminia sliding scale, as they are not needed, and may confuse in quick reading.

"Diagram for ascertaining at a glance from the Analysis the Hydraulic Modulus or ratio of lime to silica and alumina, in accordance with the British Standard Specification for Portland Cement," arranged by D. B. Butler, Assoc.M.Inst.C.E., F.C.S., assisted by G. J. Fenwick, A.R.C.S. London: John J. Griffin and Sons, Ltd., Kingsway, W.C. Price 2s. 6d. nett.

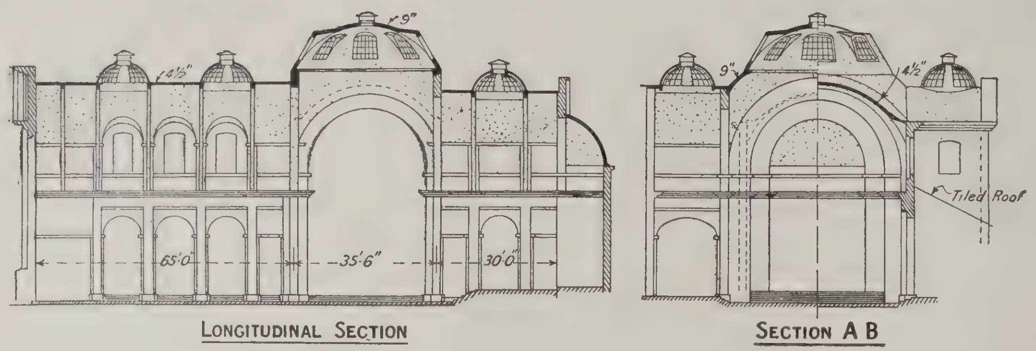
Practical Mathematics.

The very fact that there are classes in our technical schools and text-books for the teaching of "practical mathematics" is a proof and a condemnation of the inefficiency of the teaching of mathematics in our primary and secondary schools. The ordinary school teacher and schoolmaster is anything but practical in the matters of everyday commercial life, and the result in that the instruction he gives to his pupils in great part serves no useful purpose. The waste of latent talent in this country is scandalous when we think how long education has been compulsory. We almost feel disposed to suggest that the teachers in our elementary schools be chosen from the ranks of those who had already spent several years in commercial work, and more especially in one or more of the building and engineering trades. Those, after all, are the most important trades in which art and craft are employed and all persons come more or less in touch with them, especially in towns: those who have experienced the wants and needs of commerce would be the best teachers. Similarly in the case of the agricultural districts, those who had been engaged in the higher branches of agriculture as a trade and a science would best instruct the masses. The book now under review has been specially arranged to meet the revised requirements of the Board of Education as regards the teaching of practical mathematics and practical geometry in technical schools. This book is replete with examples and exercises on matters that practical people require to know, and is dictated by several years' experience of teaching the subject at technical schools, Mr. Bates being lecturer on geometry at the L.C.C. School of Building at Brixton, London, and Mr. Charlesworth lecturer on practical methematics and geometry at the South-Western Polytechnic Institute, London. The book is published at a very low price considering its admirable get-up and size, and it is generally to be commended.

"Practical Mathematics and Geometry." By Edward L. Bates and Frederick Charlesworth, Wh. Ex. London: B. T. Batsford, 94, High Holborn, W.C. Price 3s. nett.

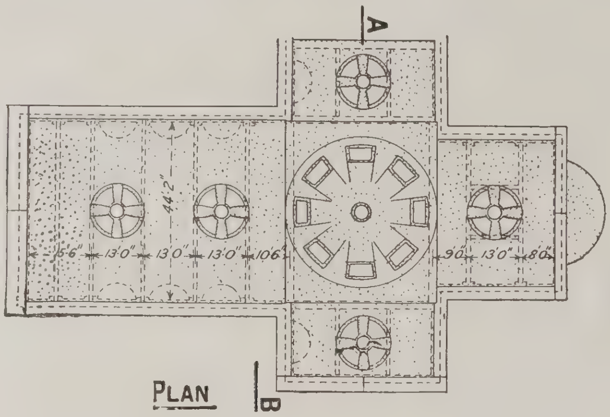
Spectrum Analysis.

The spectroscope is now used largely for the examination of minerals and mineral ores, both in laboratories and in professional work. All elements, of course, have their distinctive spectra as ascertained by observing through a prism the light emitted by them when heated to incandescence; and as these spectra are different for different elements, the observation of the spectrum of any mineral is the surest means of conducting a qualitative analysis. Rear-Admiral Gissing has performed a useful work in publishing these photographic representations, in a handy form for reference, of all or most of the ordinary minerals that come up for examination. The spark spectra of the various chemical elements have been photographed, and the wave lengths of



LONGITUDINAL SECTION

SECTION A B



PLAN

EXPANDED STEEL AND CONCRETE ROOF
TO THE CHURCH OF ST. ALOYSIUS,
GLASGOW. CHARLES J. MENART,
ARCHITECT.

the lines measured, and these data are recorded on photographs, so that any spectra obtained in experimental work can be quickly ascertained by reference to the reproduction in this book.

"Spark Spectra of the Metals." By Charles E. Gissing, F.R.G.S., M.B., Soc. Arts, Rear-Admiral R.N. (retired). London: Battière, Tindal and Cox, 8, Henrietta Street, Covent Garden. Price 7s. 6d. nett.

A REINFORCED CONCRETE CHURCH ROOF.

One of the first roofs constructed in reinforced concrete in this country is that of St. Aloysius Roman Catholic Church, Glasgow, the architect of which was Mr. Charles J. Menart, of Glasgow. In plan the church, the general dimensions of which can be seen from the accompanying illustrations, is of the usual cruciform shape. The building is faced with red freestone in Classic style, the reinforced concrete roof work being carried on the main walls. From the drawings it will be seen that the roofs over the nave, transepts, and apse are in the form of semicircular arches, the nave roof having a clear span of 44ft. 6ins., and a length of 65ft. The roof is supported on arched ribs, reinforced in such a manner as to take the whole of the stress due to thrust without putting any thrust on the side walls, where the load is vertical. The ribs carry a 4½in. slab forming the roof covering, this slab being reinforced with expanded steel. There are two four-light cupolas in this roof, which also act as ventilators.

The roofs over the transepts and apse are of somewhat similar construction, but of smaller span. The four main arches carrying the large central dome are of brick work; the central dome, which is 44ft. by 34ft. 3ins. on plan, has a radius of 29ft. 6ins. for the first portion, and a radius of 21ft. for the upper portion or dome proper. There are eight large lights in the dome.

The concrete is generally 9ins. thick throughout, reinforced with expanded steel, and circumferential steel round bar rings. The reinforced concrete work was carried out by the Expanded Metal Co., Ltd., of York Mansion, York Street, Westminster.

The sashes in all the roof lights are of wrought-iron secured to the concrete, and the roof is covered with asphalte.

The interior will eventually be decorated, and for this reason has been left with a fairly rough surface, so as to form a key for plaster or mosaic.

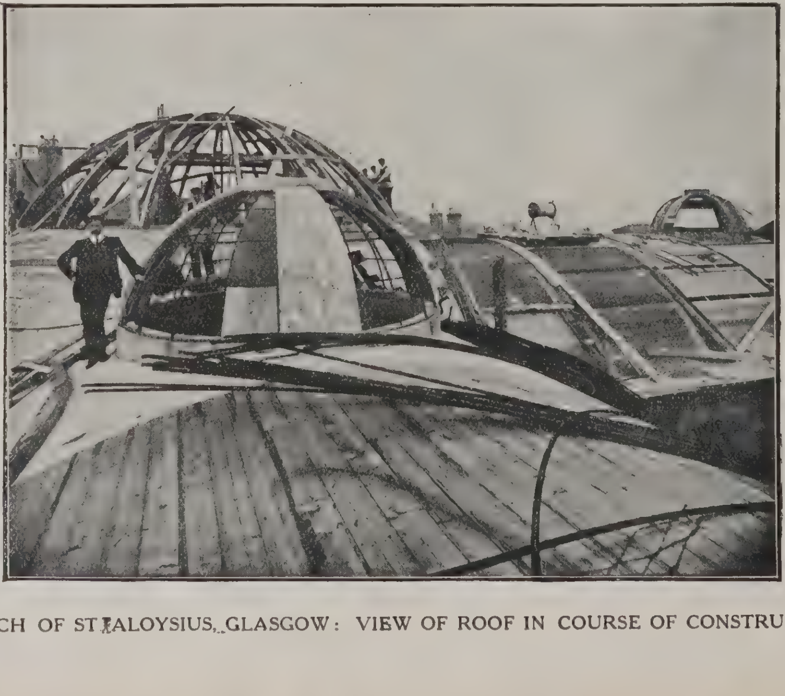
The illustrations show the work in progress and completed.

REINFORCED CONCRETE IN ENGINEERING.

The Preliminary Report of the Institution of Civil Engineers on Reinforced Concrete in Engineering was noticed in our Concrete and Steel Section of October 12th, and is the subject of comment in another part of the present issue. The following are further extracts from the report:—

Reports on Works Executed.

Simultaneously with the inquiries and investigations already alluded to, the Committee proceeded to obtain definite and original Reports by engineers appointed by the Committee for the purpose, upon certain reinforced concrete works in various countries, these works having been selected out of a large number considered by the Committee as likely to afford practical information.



CHURCH OF ST. ALOYSIUS, GLASGOW: VIEW OF ROOF IN COURSE OF CONSTRUCTION.

CHURCH OF ST. ALOYSIUS, GLASGOW: VIEWS OF BUILDING IN COURSE OF CONSTRUCTION.

An endeavour has been made to render these reports comparable with one another as far as possible; and whilst it is obvious that they exhibit a considerable absence of uniformity, both in methods applied and in results obtained, and cannot be regarded as conclusive owing to the comparatively limited period of the existence of any substantial engineering work constructed in reinforced concrete, it is believed that the examinations afford useful and reliable information.

There has also been added a bibliography of articles bearing on the subject of reinforced concrete which have appeared in recent volumes of the Minutes of Proceedings of the Institution. These are arranged in a similar manner to the Report on Works.

It will be observed that up to this point the Committee have limited themselves to inquiry into the present position of reinforced concrete as used in engineering structures, and have not sought to formulate any opinion upon the various important questions involved, or to recomend any rules for general guidance in its use.

Before approaching that part of the question, combined as it must be with the principles of calculation applicable to the actual strength of reinforced-concrete structures, as well as with the data relating to its constituents and preparation, the Committee have felt that there is a distinct lack of reliable information of a kind which can be readily adopted from a scientific point of view, with regard to tests and experiments on a working scale upon reinforced-concrete structures of an engineering character.

The Committee have now this important point under their consideration. It is naturally beset with considerable difficulty, especially in regard to the expense involved; but the Committee trust that any such difficulties may be overcome, and that they may be in a position without loss of time to supplement this preliminary Report by one containing their findings on the subject generally, as well as such recommendations in regard to rules and practice as their investigations may suggest.

CONCRETE MIXING.

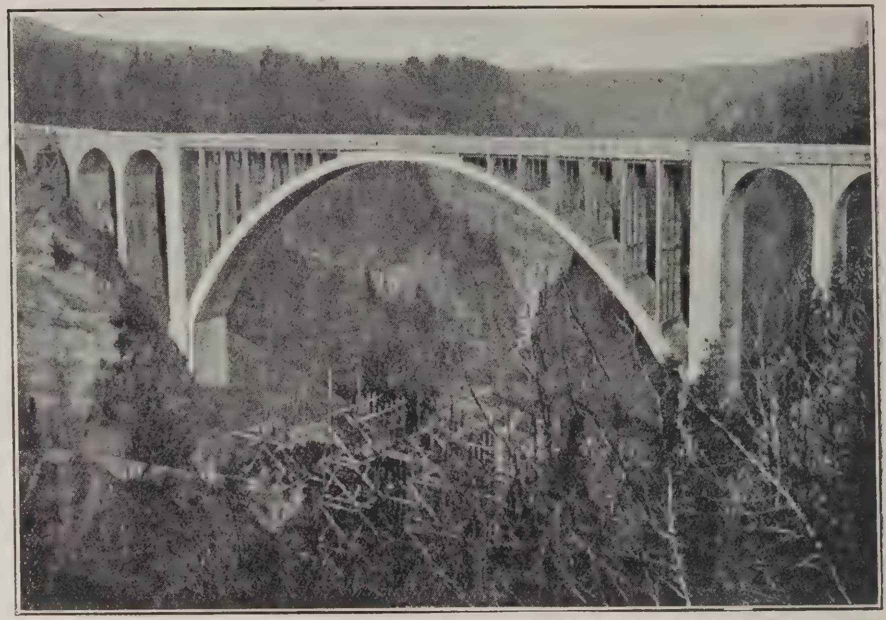
In our last concrete issue we gave some extracts from a paper by Mr. R. S. Greenman on "Concrete: its Constituent Materials." The following paragraphs are from the same paper:—

"The selection of the stone to be used as the aggregate for concrete should be given very careful consideration. It frequently happens that a gravel can be secured more easily and more cheaply than a satisfactory crushed stone. As a result we have two main classes of concrete—broken stone and gravel. Both have good points in their favour. Another kind—cinder concrete—has a field of its own, and is the best concrete that can be used under certain conditions. In the selection of the stone or gravel we have problems similar to those which are presented in the selection of sand. The same question of voids, size, the grading of the stone and the cleanness are all vital considerations. There is also the further question of strength. It is necessary that, since the stone forms by far the larger part of the concrete, it shall have a strength approximately the same as the cement. The kind of stone is the first point to be given consideration, the selection depending somewhat upon the use to be made of the concrete. Good, hard stone is absolutely essential. Hardness and toughness, density and weight help to determine the stone. Trap-rock and granite generally produce the best concrete; hard limestone and gneiss also give good results; sandstones are generally quite as satisfactory, but stones of a shaly nature should be avoided. When gravel is used, it is equally important that it should be composed of good, hard pebbles. Shaly gravel should not be used. All stone or gravel of a soft or decomposed nature should not be permitted in concrete.

"The question of quantity of water used in mixing concrete is not always a vital one.

Where massive concrete work is put in place, large quantities of water are used and the supply naturally will be a satisfactory one. There are times, however, when small structures are to be erected at some point distant from a large supply of water. It is natural that the contractor should then look for the nearest supply. The source of this supply should be examined before its use is permitted. As an illustration: The concrete in a certain culvert failed to set. At first the cement was blamed. Investigation brought out the fact that other culverts in the vicinity had been constructed with the same cement, sand and stone and were perfectly satisfactory. Attention was then given to the water. This water was taken from the creek flowing through the culvert; and when this creek was followed it was found that it flowed past a medicinal laboratory where bark and herbs were largely used. The creek was decidedly affected by the waste from this laboratory. This point well illustrates the effect of organic matter on water and concrete.

"Any source of supply that gives very roilly water should not be used while it is in this condition. If it is possible to allow the suspended matter to settle, the water may thus be satsfactory. Water that is brackish, or leaves any deposit in the nature of a slime, should not be used."



REINFORCED CONCRETE HIGHWAY BRIDGE OVER THE SITTER RIVER, CANTON APPENZELL, SWITZERLAND. DESIGNED BY PROFESSOR E. MÖRSCH.

A 259ft. CONCRETE ARCH BRIDGE.

One of the largest and most interesting concrete bridges in existence is the Sitter highway bridge, Canton Appenzell, Switzerland, shown in the accompanying illustrations. It carries the highway between the villages of the Stein and Teufen, and near the latter, over the gorge of the upper Sitter River. Comparative designs and estimates for a steel bridge and a reinforced concrete arch showed the latter to be so little above the other as to be inconsiderable.

The roadway elevation selected is 216ft. above the river. The main arch is of 259.1 feet clear span, and 86.9 feet soffit rise. For the end portions of the bridge, groups of smaller arches spanning 33.6 feet in the clear were adopted. The deck is unusually narrow, being only 22ft. 6ins. between railings, including two 24in. footwalks. So narrow an arch demanded an undivided arch-ring, and it was thought advisable to increase the stability by battering the faces of the ring. The width of the ring is 21.4ft. at the crown, and 24.6 ft. at the drawbacks, the vertical batter of the plane of the end curves of the soffit being 1.54 2-3rd ft. The outer line of the arch departs from this plane, normal sections of the ring having been made rectangular. The structure is of the open spandrel type—the roadway is a slab resting on columns which foot on the arch-ring.

As regards the action of live-load, the arch was assumed to be a fully elastic hingeless arch. The ring was made 49ins. thick at the crown, and 84ins. thick at the drawbacks. The loads assumed were uniform live-load, 92lbs. per square foot; concentrated live-load, 22-ton road-roller.

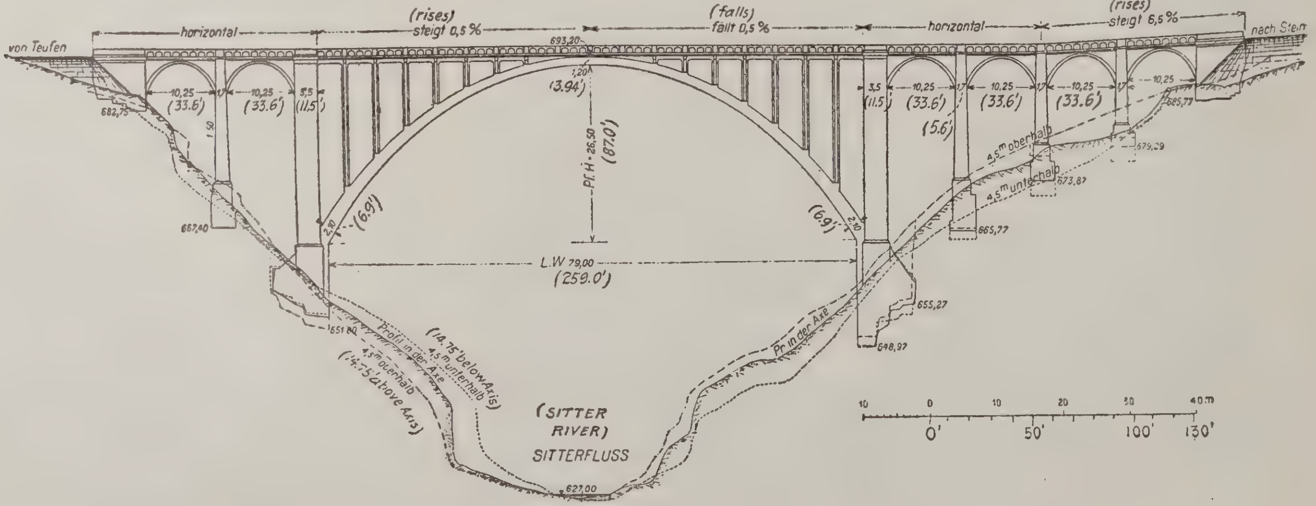
A REINFORCED CONCRETE DECK DAM.

A reinforced concrete dam of the deck and buttress type was built during the summer of 1908 as part of the new gravity water supply system for the town of Pulaski, Va, U.S.A. The dam has a spillway at each end; it is 151ft. long between spillways, and has a maximum height of 37½ft. The bottoms of the spillways are 3ft. below the crest of the dam and are surfaced with concrete for a length of 25ft. The buttresses which support the deck slabs are 12in. thick at the top and 18in. at the bottom and rest upon footings 2½ft. wide, carried down to solid rock. The concrete mixture for the buttresses was 1 : 3 : 6.

The deck was poured with a 1 :2 :4 mixture and is 13in. thick at the top and about 20in. at the base; a cut-off wall 3ft. 9in. wide extends into solid sandstone. The batter of the face of the deck is 10in. to the foot, and of the buttresses 2in. to the foot. The crest of the dam is 18in. thick and 2ft. 3in. wide. The deck is reinforced horizontally with ⅞in. square mechanical bond bars, crossed every 2ft. with ½in. square bars clamped at intersections by a special chair. The reinforcement near the top included also 5ft. of wire cloth and two sections of 20lb. T-rail. One coat of waterproofing was applied to the deck of the dam. The structure was designed so that an addition of 9ft. 6in. could be made giving a reservoir capacity of 80,000,000 gal.

The lump sum contract price for building the dam and laying the pipe line, for which the town of Pulaski furnished the pipe, was $15,520. This amount is estimated to be about equally divided between the dam and the pipe line. About 21 tons of reinforcement and 1,000 bbls. of cement were used; there were used in all 370 cu. yd. of 1 : 2 : 4 concrete, and 335 cu. yd. of 1 : 3 : 6 concrete Material not furnished under contract cost about $15,000 and expenses incurred in the improvement of the water shed made the total cost of the project about £40,000.

The dam was designed by Mr. G. H. Derrick, M.Am.Soc.C.E., of Pulaski, Va.



HIGHWAY BRIDGE OVER THE SITTER RIVER, CANTON APPENZELL, SWITZERLAND.

A THIN-WALLED CONCRETE TANK.

Some time ago the Olympic Salt Water Company, San Francisco, designed a number of red-wood tanks made of 3in. stuff in which to heat salt water. The water is pumped from the ocean, and during most of the year has an average temperature of 45 degrees Fahr. It is heated to 180 degrees within an hour, and this process is repeated twice a day. The temperature of the tank walls is therefore continually changing. The wooden tanks have the disadvantage of colouring the water for the first four or five months of service, and concrete tanks with walls only 2½in. thick were therefore proposed. The company was informed by the designers, the San Francisco branch of the Trussed Concrete Steel Company (Mr. Felix Kahn, manager) that the concrete tanks were purely an experiment, and it was with this distinct understanding that Mr. A. D. Spreckels, owner of the Olympic Salt Water Company, ordered their construction.

The tanks are circular, 17ft. in outside diameter, and 20ft. deep, with 2½in. walls and 3in. bottoms. They are elevated 14ft. above the ground, and are carried on 4in. reinforced concrete slabs.

The reinforcement of the walls consists of two complete cylinders of Kahn 2-B rib lath, between which is a grid of vertical and circumferential cup bars. The vertical bars are ⅜in., spaced 14in. on centres around the circumference. The circumferential rods are varied in size and spacing according to the water pressure. For the first 3ft. above the bottom ½in. bars are used on 3in. centres; for the next 3ft., ½in. bars on 4in. centres; for the succeeding 3ft., ⅜in. bars on 3in. centres; for the next 6ft., ⅜in. bars on 4in. centres; and for the top 5ft., ⅜in. bars on 6in. centres. In all cases bars were lapped 40 times their diameter.

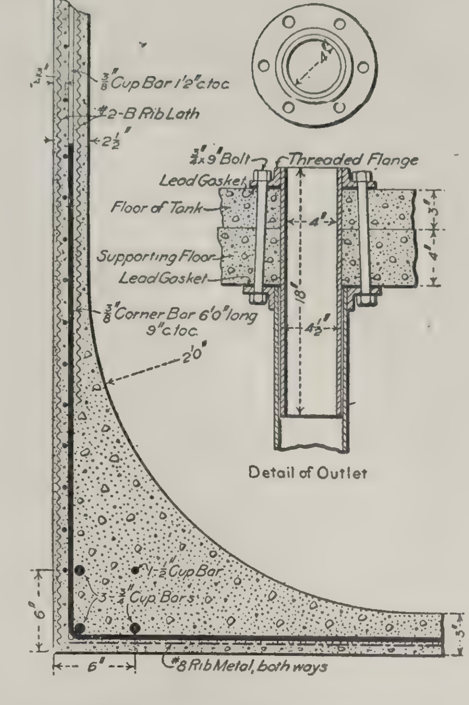
The reinforcement of the floor consists of No. 8 rib metal placed in two sheets at right angles to each other, and near the bottom of the slab.

The sides and floor are joined by a fillet of 2ft. radius, and special reinforcement is used at this point. This consists of ⅜in. corner bars, 6ft. long, 3ft. of the length projecting upward into the wall, and the other 3ft. horizontally into the bottom of the tank. These bars are placed on 9in. centres around the entire circumference. One extra ½in. cup bar and three ¾in. cup bars are placed circumferentially in the fillet.

The reinforcement was erected and wired firmly in the usual manner. It was then plastered on the outside with a coat consisting of one part cement and two parts sand in which 5 parts by weight of the cement were replaced with hydrated lime. After this had set for a day or two the inside was plastered, giving a wall 2in. thick. Finally the outside was given a finished coat of cement plaster of the same proportions as above, resulting in a total wall thickness of 2½in. The bottom of the tank was composed of cement mortar of the same proportions.

After the tanks had set for about ten days, they were filled with water up to 2in. of the top. The first day they were used they leaked like sieves, and therefore a bushel of bran was dumped into each tank. Since then they have given absolutely no trouble, though they have been in service for about 9 months.

Because the designers feared that they might over-stress the concrete, the steel stress was kept very low. Despite this fact, the designers state that the concrete tanks, built by day labour, cost 2,090 dollars, whereas the wooden tanks were estimated to cost 1,990 dollars, being an excess of only 100 dollars for the concrete tanks. The designers attribute this figure for the concrete tanks to the absence of form work



DETAIL OF REINFORCED CONCRETE TANK WITH THIN WALLS.

A HANDBOOK OF REINFORCEMENT DESIGN.

A new edition of the catalogue issued by the Expanded Metal Co., Ltd., of York Mansion, York Street, Westminster, dealing with the use of expanded metal for reinforcing concrete, has just made its appearance. It forms a most valuable collection of illustrations and data regarding completed examples of such work in Great Britain, and will afford valuable instruction to architects and engineers in reinforced concrete construction. It is a handbook for design and specification with expanded metal reinforcement — in the several forms "diamond mesh" and "rib square mesh" expanded steel and "expanded steel bars." Notes on the general nature of reinforced concrete, the design and construction of same, and specimen specifications form features that will be valuable apart from their special association with expanded metal. The amount of reinforced concrete work done with expanded steel has been enormous of recent years, and this catalogue is a large one and extremely interesting in the multifarious examples recorded. The catalogue is one that ought to be in the possession of all those who have occasion to employ the material. We publish elsewhere in this issue a few views of one example illustrated and described in the catalogue, as we cannot do better to show the nature of the contents, an ordinary review of such variety of contents being impossible.

Mr. Alcwyn A. Jones, of Messrs. J. E. Phillips and Son, heating specialists, 21, Old Queen Street, Westminster, S.W., was elected a member of the Institution of Heating and Ventilating Engineers at their last meeting.

THE PROBLEM OF THE ARCHITECT'S ASSISTANT.*

The practising architect is himself too often engaged in a hand-to-hand struggle for recognition to have much time to spare for considering the position of his assistant, and unless that gentleman is prepared to look after his own interests he is more and more likely to be pushed aside in the struggle. The practising architect for his part is determined to make a move in the matter, and to call if need be on Parliament to help him to pull his cart out of the rut, and when Parliament is not too busily engaged in pulling its own cart out of the rut, it may possibly listen to him. But in the meantime the architect's assistant stands like a disinterested spectator, with every good wish for the vociferating principal, but otherwise rather amused by the commotion he is making than concerned to enquire how the issue is going to affect himself. It appears to me and to the founders of this Guild that he would be better employed in putting his own shoulder to the wheel, and giving a direction to the cart, since he is bound to follow it.

The problem, then, is how and in what direction his efforts should be applied. It can only be solved by a serious and united endeavour on the part of the body of assistants to see clearly what the position is, to thresh out by discussion, by criticism, by contradiction, a possible solution of the problem, and to this end this Guild of Assistants has been formed in the hope that it will at least furnish a base from which these operations can be started.

It may be questioned whether there is any need for calling into existence for this purpose another body within the profession. We may say in answer that while we desire to co-operate in every way, consistent with the objects we have in view, with all the existing architectural societies, we conceive that none of the existing bodies occupies in practice the ground which we are endeavouring to cover.

The Royal Institute of British Architects is avowedly and mainly concerned with the advancement of the art of architecture. While we also are fully conscious of the reverence which is due to our art, we feel that we can safely leave its protection in the hands of the august and powerful body which has already taken charge of it, and we propose to devote our energies to the practical advancement of the interests of the architect's assistant, and by so doing believe that we shall advance the interests of the profession at large.

The Institute, in the long and honourable contest which it has maintained in upholding the cause of architecture, has set up an ideal which is far above the heads of the general public, and perhaps a little beyond the reach of the average practising architect himself, who finds small encouragement in pursuing it while faced with the troublesome necessity of earning a living. Both the architect and his assistant must live, and though some unkind critic may question the necessity, it is an ever present anxiety to ourselves. In this matter the interests of the architect and his assistant are identical, and it is on this point that we claim the support of the practising architect for this Guild of Assistants.

Now, while the Institute has done so much for the advancement of the art of architecture, and has drawn to itself the ablest and most important members of the profession, and the support of a large number of practising architects and their assistants, it is a curious fact that when it descends to the consideration of any of the practical difficulties and troubles which afflict the practice of architecture, its efforts are not usually crowned with any conspicuous success.

The comparative failure of the Institute to dominate the relations between the architect and the general public may be ascribed to various causes, which, however, I do not propose to discuss. But that there is a want of driving power in the edicts of the Institute, even as regards its own members, is, I think, unquestionable. Now, in these matters of education, of the status and conduct of the profession, the voice of the assistant has never been raised, notwithstanding the fact that he is largely concerned in all of them. He has hitherto been content to leave everything in the hands of those he has looked up to as his leaders, and while supporting the organisations of his chiefs he has never, until now, considered the advisability of organising on his own account, or whether, in fact, he was being led in the right direction. Now, let us consider what it is that the qualified assistant wants.

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*Extract from a paper read by J. V. Hibbert, F.S.I., to the Guild of Architects' Assistants, Tuesday, November 8th, 1910.

His first and constant aim is to cease to be an assistant and to become a practising architect, and put up buildings on his own account. Next to that he desires employment for his services as an assistant to men who will give him both fair payment and credit for the work he does for them. His chances of achieving either of these ends are at the present moment very infrequent, nor is there anybody, so far as I know at present, concerned in improving them. Quite apart from the long and recurring periods of depression in the building trade, there are, as we know, other causes at work. But even if there were not, if all we had to consider were the inevitable fluctuations of prosperity which affict all alike, it were only common prudence to endeavour to provide for them. A properly organised register of unemployment and a system of insurance are surely worth consideration. A properly conducted register of unemployment would be of incalculable benefit to the whole profession, and would form a means of communication between the principal and assistant which is very badly needed. The methods at present open to an assistant of obtaining work when out of employment are of the crudest description, and consist either of advertisement in the weekly press or undertaking a pilgrimage round the offices that he knows of. The principal in need of an assistant has to adopt equally crude methods, as a rule, in getting hold of the kind of man he wants, and has often to put up with repeated disappointments before achieving the desired result.

Such a register as would meet the needs of the profession would require to be conducted with care and attention, and would entail a considerable amount of active work on the part of those undertaking it. But it would be work well worth the time and labour spent on it. Such a register, moreover, would provide the means of obtaining for us exact information as to the actual state of affairs in the profession, such as does not exist at the present moment, and would, I think, if in existence at present, reveal a state of things that would induce even those fine spirits who have a tendency to ignore mere material needs to admit that some action in the matter is not called for before it is wanted.

Associated with this is the question of unemployed insurance. Here, again, the exact information at present available on the subject of unemployment is too meagre to enable anyone to formulate such a scheme, and in this case, again, there is none concerned in obtaining the necessary information. The assistant must do the work for himself. The problem is his, and he must solve it. Such a system would be the means of tiding many a man over several hard and anxious months in his search for work, instead of leaving him, as at present, at the mercy of the first job offered to him in an overcrowded and underpaid market. This is more especially the case with the older and more experienced assistant, who, when out of work, finds it ever more and more difficult to get in again at his former salary. It would, perhaps, be inquiring too curiously to obtain a knowledge of what really does become of the superfluous assistant, through what stages of decay and despair he passes, to what final solution he arrives. We have all of us come across him at times tramping drearily up and down the office stairs with his little roll, which he so seldom gets a chance to untie. Being neither an aggressive nor pertinacious person, he is easily dismissed and soon forgotten; but his existence is a warning to all of us that these questions of unemployed insurance and registration are not to be lightly dismissed as matters of little consequence.

The architect, in the practice of his art, is called upon to deal with many matters not merely of interest but of vital importance to his client. He is responsible not only for the architecture, but for the efficient construction, sanitation, protection from fire and from natural decay of the buildings he designs. He has inevitably in his hands the material and commercial interests of his clients in a hundred different directions; but he has contrived to convey a general impression that he only cares for these things with his left hand. He has ignored his plain economic value to exalt his artistic value, with the natural result among a business community that a large amount of work has been lost to him, people preferring to employ what they call a "practical man."

It is the attainment of an enhanced economic value which is the main object of the ardent registrationist, and he proposes to attain this object by simply compelling the general public to employ him. I am personally somewhat doubtful of the efficacy of registration alone to achieve this desired result. At least it will be necessary first of all to convince the general public that the result is a desirable one for them, and secondly the undeniable fact that architecture is an art lays any scheme for restricting it open to objections. But I feel no doubt at all that much can be immediately done by a combination of the existing forces within the profession, determined on carrying out a united policy, and in the formation of this policy the assistant should take care that his interests are included.

The assistant's chances of obtaining recognition are mainly confined to the opportunities afforded by an occasional open public competition; while within the profession itself his chances of obtaining a decent living as a capable assistant are becoming more and more restricted; and, without capital or influential support, his chances of creating a private practice for himself are nil. While there exist these obstacles to his advance, he is pressed upon from behind by a constantly flowing stream of new recruits into the profession. This problem of the wholesale creation of fresh assistants for the convenience and profit of the practising architect is another of those internal causes affecting the position of the assistant, which it would be worth his while to inquire into, and, if necessary, take action on.

I fear that he will raise a storm of protest if he does take action, and it will be necessary for him to tread cautiously; but one cannot make omelettes without breaking eggs or "take arms against a sea of troubles" without the risk of sundry hard knocks in the process. Suppose that, taking a leaf out of the registrationists' book, the assistants were to turn round and say: "We agree with the principle of registration, and we demand that any registration Bill shall contain a clause requiring every architect employing an assistant to employ only duly qualified men at a scale of salaries to be fixed, and that he shall not have at any time more than a stated number of unsalaried assistants or pupils in his office." I am not advocating any such proposal myself, believing, as I do, far more in the free action of general opinion than in the methods of Parliamentary compulsion, which have a tendency to act in unexpected ways. But I think if this claim were to be put forward concurrently with any registration Bill, the promoters of the Bill would have some difficulty in rebutting it. The principle, indeed, has already been adopted by Parliament in connection with schools desiring to be recognised by the Board of Education.

In this, as in all other matters I have referred to, the assistant must apply his own efforts to find a solution, and abandon the passive attitude of merely waiting for something to turn up in his favour. It is no longer sufficient for him to await opportunities: he must assist in creating them. Let him assert the reality of his existence as a necessary and vital part of the profession, and not a mere hanger-on to the tail of it, and opportunities will certainly open out to him—opportunities not only for improving his position as an assistant, but for realising his ambition to become a practising architect.

The problem of the architect's assistant will not be solved by any cut-and-dried method. The solution will prove to be a business of trial and error; but I should not have dealt with the matter at all if I did not think that a solution is both possible and desirable in the interests of all those who profess and call themselves architects.

FEDERATION NEWS.

Altrincham, Sale, and District.

The twelfth annual general meeting of the members of this association was held at the secretary's office, Market Street, Altrincham. Mr. James Hamilton, president of the association presided, and was supported by Messrs. J. E. Dean and Thomas Shaw, vice-presidents. The annual report and balance-sheet was presented by the secretary, Mr. W. Moody, and adopted, the association having in addition to the funds in hand, an amount of £200 invested in railway stock. The President briefly reviewed the work of the association during the past twelve months, and explained the work done by the delegates to the Lancashire, Cheshire, and North Wales Federation, the Northern Centre, and National Conciliation Boards. He regretted that the general trade of the district had been very quiet during the past twelve months, but hoped that the coming Coronation year would see an improvement. He was pleased to say that there had been no disputes with the operatives. He deeply regretted the loss the association had sustained by the death of Mr. Joseph Drinkwater, who had been their valued treasurer since the formation of the association, and he tendered to the widow and family the sincere sympathy of the members.

The following officers for the ensuing year were unanimously appointed:—Mr. James Hamilton, president; Messrs. J. E. Dean and Thomas Shaw, vice-presidents; Mr. Ernest W. Stone, treasurer; Messrs. Frank Hamilton and Alfred Pennington, auditors; Messrs. J. E. Dean, Owen Corrigan and Henry Gibbon, delegates to the Lancashire, Cheshire, and North Wales Federation, and the following to the committee, Messrs. J. Armstrong, David Bell, Rowland Marston, Arthur Drinkwater, Henry Gibbon, J. Calderbank, Fred Jones, Harry Holt, J. H. Crossby, Geo. Wilkinson, Owen Corrigan, Richard Potts, and James Holt, and William Moody, secretary.

Newport, Mon.

The forty-third annual dinner of the Newport Master Builders' Association was held at the King's Head Hotel, Mr. John Charles, president, in the chair. Among the speakers were the Mayor (Councillor W. M. Blackburn), Mr. L. H. Hornby, Alderman Mark Mordey, J.P., Councillor Parry, Mr. Geen, Mr. R. W. Moon, Alderman G. Greenland, Captain Edgar H. Fawckner, Councillor J. W. Hunt, Mr. Lyndon Moore, Mr. W. Jewell, and Councillor T. Sturge Cotterell.

In the course of the evening, the chairman presented to the Mayor, on behalf of his colleagues and friends of the Association, an illuminated address and a handsome clock, in recognition of his 31 years' membership.

In making the presentation the president remarked that the Master Builders' Association felt proud at the way in which Councillor Blackburn had upheld the honour and dignity of the position of Mayor. While the Mayor had been active in settling the dock dispute and surmounting other difficulties, the Mayoress had been doing good work in the cause of charity.

The Secretary read the address, which was embellished with the borough coat of arms, the crest of the National Federation of Master Builders, and the names of the presidents of the Association were inscribed upon it, in a border scroll.

The Mayor, in returning thanks, claimed to be one of the oldest members of the Association.

The president then handed to Mr. Richards, on behalf of the Association, a silver fountain pen as a small token of their appreciation of his 11 years' services as secretary.

Demarcation at Liverpool.

On November 1st a deputation from the Operative Masons' Society waited upon the Committee of Management of the Royal Liver Friendly Society with reference to the masons' dispute which had arisen as to pointing done by labourers on the new Pierhead building. The men were represented by Mr. Griff Jones; masons' delegates, Mr. H. Rice and Mr. Thompson, representing the men's union. The architect was represented, and there were also present the society's solicitor and Mr. Roper, the representative of Messrs. Manuel, the contractors for the mason work. After some considerable discussion, the Management Committee unanimously agreed that the pointing was part of the masons' work, and instructed the contractor to engage masons. The trouble thus ended satisfactorily, and the masons re-commenced work on the following morning.

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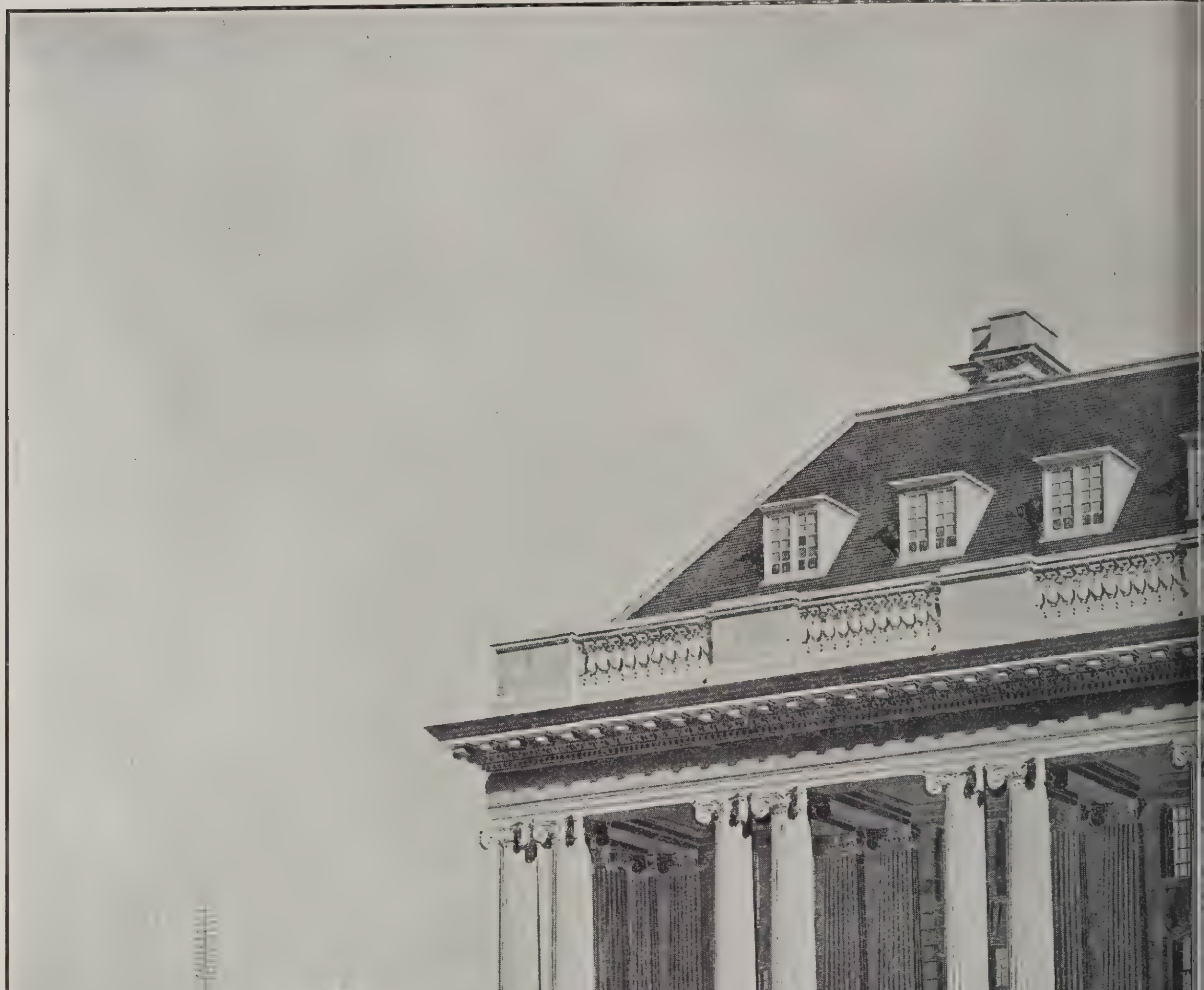
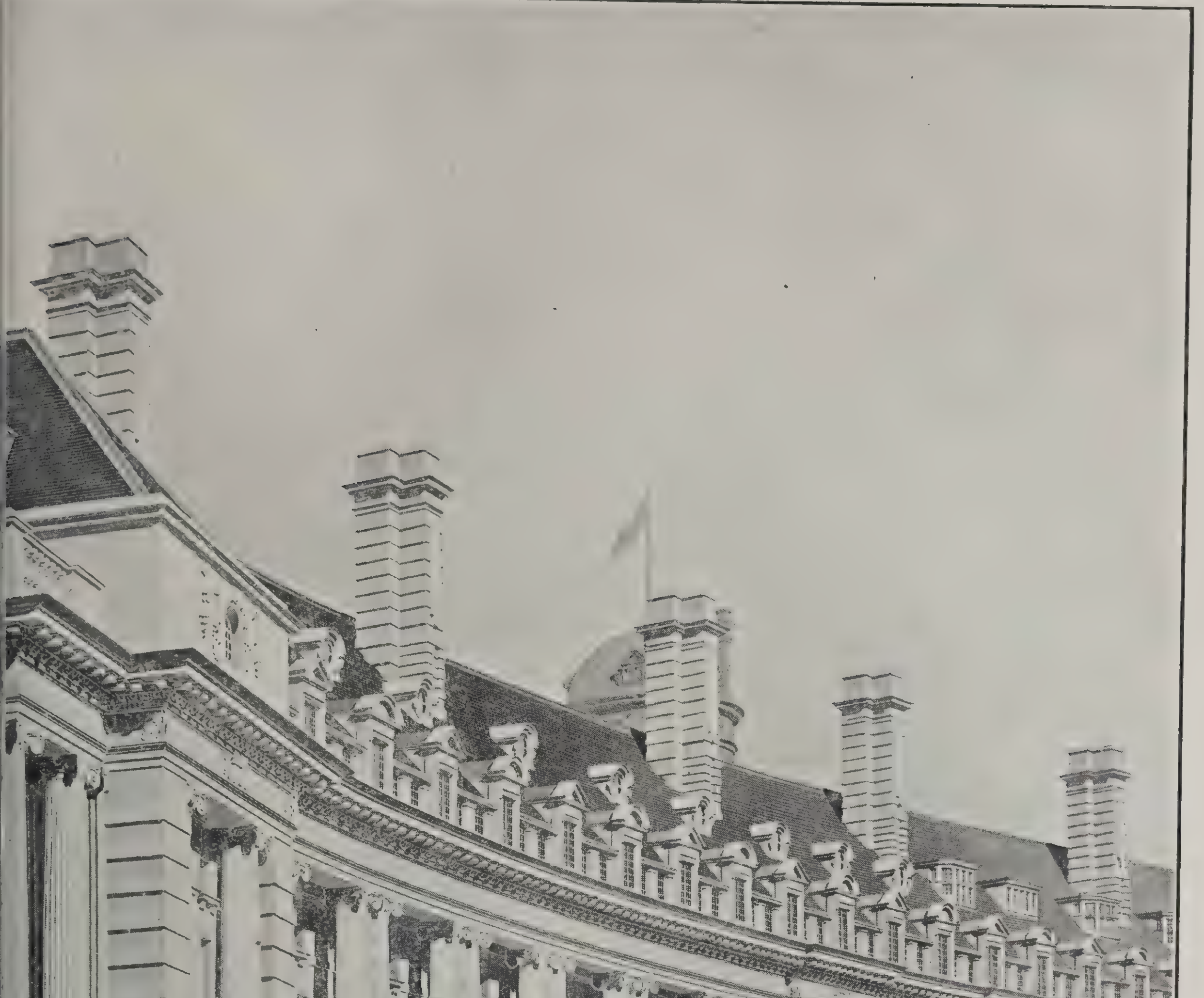
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *November 16th*, 1910.



THE REBUILDING OF REGENT STREET QUADRANT: DESIGN FOR CO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JOHN MURRAY, F.R.I.B.A.
11, SUFFOLK STREET
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Nov. 1909.

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THE ARCHITECTS' &
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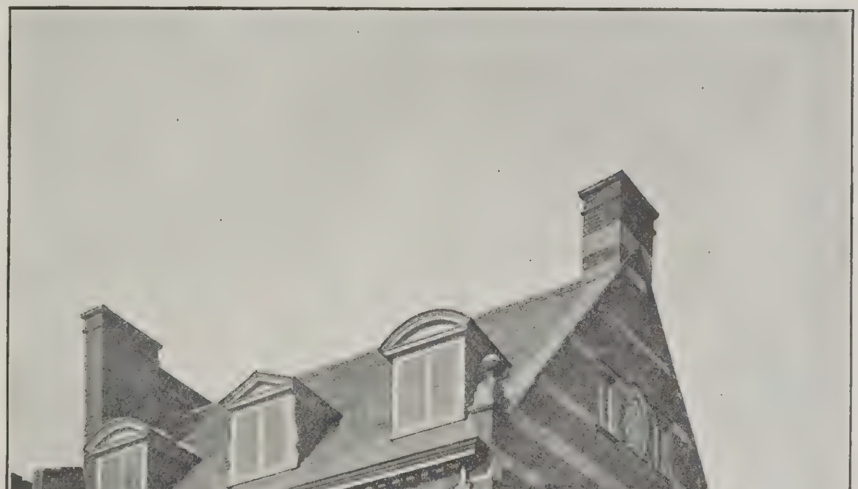
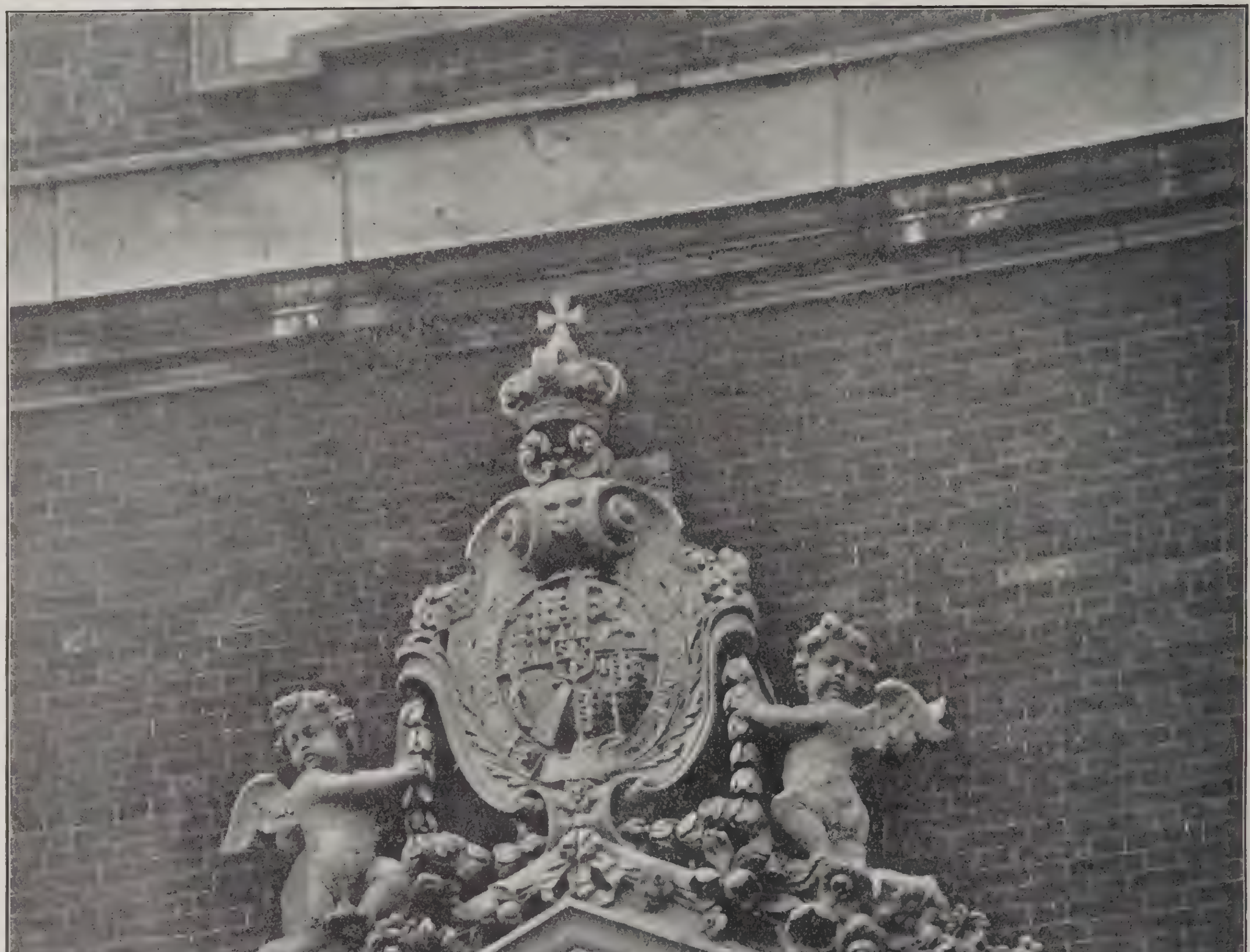
*WEDNESDAY,
NOVEMBER 16th, 1910.*

Volume XXXII. No. 824.



HOUSE, ABBEY ROAD, ST. JOHN'S WOOD, LONDON, N.W.
EDWARD WARREN, F.S.A., F.R.I.B.A., ARCHITECT.



This fine piece of sculpture, in Portland stone, is by Cibber. It was carried out about 1695. Some particulars relating to it, as well as a portion of the south elevation of the Palace, are given on page 507 of this issue.

SCULPTURE ON SOUTH FRONT OF HAMPTON COURT PALACE.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 16th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 824.

Note: The List of Contents will be found on Page IV of the front advertisements

Designs by Gold Medallists.

THE Conversazione held at the Institute of Architects last week was illustrated, if one may so put it, by a selection of drawings and photographs of the works of distinguished architects who have been awarded the Gold Medal of the Institute. The collection is of so much interest, both as illustrating the work of eminent architects and as a kind of record of phases which architecture has passed through since the first medal was awarded to Cockerell in 1848, that it is worth something more than a mere mention.

The principal illustration of Cockerell's work is the large drawing of the Taylor Institute at Oxford, a classic building in the Roman style which is remarkable for the boldness of its grouping; two large wings projecting far in advance of a central pavilion. It is a good example of the importance of general grouping of masses; a building designed like this would be effective, one may almost say, whatever its detail was; and in fact the one feature that rather spoils it is the retention throughout the design of the Roman heresy of mounting a square block of entablature above the top of each capital. In those days people had not begun to reason so much about the logic of architectural design, and a Classic architect accepted in unquestioning faith whatever bore the imprint of the Roman age. Cockerell is represented also by a large and beautifully executed drawing for "a church to be erected in Regent Street"; the building which unhappily we had to see pulled down a good many years since to make way for a commonplace block of shops, and of which many Londoners, we fear, have now forgotten the existence. The drawing might have served them as a reminder of a fine piece of architecture of which we have been deprived.

Sir Charles Barry was the next English architect who received the gold medal (1850); and the most remarkable drawing by him is the elevation and plans of his grand scheme for a building which was to extend along a great portion of the line of Parliament Street and Whitehall, and in which all the Government offices were to be combined in one vast block, in which each department was to have its own quadrangle, but with communication with all other departments; a vast dome forming the central feature of the main façade. It is the most grandiose architectural scheme for London which had been put forth by any architect since Inigo Jones's great plan for Whitehall Palace. It is worth note that Barry not only made the drawing himself, but wrote with his own hand the whole of the long description in capital letters which occupies the panel in the lower part of the drawing. Such an extent of personal work on a great drawing is unusual in the present day. This great scheme was so arranged that it could be carried out in parts and by degrees, and its realisation would probably in the end have cost no more than will have been spent on the erection of various blocks of Government offices, with no architectural connection with each other. The drawing is, for us in the present day, a somewhat melancholy memorandum of a great opportunity lost. In the end room are a good many drawings, faint with age, of the various trial designs made by Barry for the Houses of Parliament, in which it is interesting to see how the fine qualities and proportions of the present great building were gradually evolved by the architect.

The drawing of the Piccadilly façade of Burlington House provokes the comment that in one case at least the award of the Gold Medal might be characterised in the card-table phrase, "honours easy." In most of the other cases the award has been such as would be generally approved; that this piece of architectural commonplace should have commanded it is a matter difficult to explain, or of which at all events the explanation does not lie on the surface. So far we have been dealing with awards for Classic architecture, except as to the Houses of Parliament (which, indeed, Pugin once described as "Gothic details on a Classic body"). Of the three leading Gothic medallists, Scott, Street, and Waterhouse, Scott was by far the earliest, having received the medal in 1859; he is represented mainly by two of the contract drawings for St. Mary Abbots, Kensington; a good typical representation of the sound and correct revived Gothic of which Scott was the apostle, but hardly an adequate illustration of the great place which he filled in the profession at one time. But Street, who received the medal in 1874, is splendidly represented by the grand bird's-eye view, drawn we have no doubt by his own hand, of the Law Courts as he intended it to be, with a main tower far finer and more effective than the present one; a drawing which excites unavailing regrets that the actual building should not have been carried out as it is shown here. Waterhouse (1878) is also represented by the perspective of his Law Courts design, which seems to run rather too much into towers, and perhaps was one of the designs which occasioned the remark from an eminent judge, who was examining the competition drawings—"I see a great many fine towers, but where are the courts?" But Waterhouse is much better represented by the view of his Manchester Town Hall, to our thinking his most complete and characteristic work, both in plan and design, which is unfortunately in such an out-of-the-way position in Manchester that many people who visit the city never see it at all. The arrangement of the plan, on an exceedingly awkward triangular site, is a masterpiece in planning. One of the later Gothic medallists, Bodley (1899), is better represented by the photographs in the East Gallery than by his drawings; and James Brooks (1895) is certainly not done justice to by the one drawing of a church exhibited; it is a pity we could not have had one of the grand drawings of his competition design for Liverpool Cathedral.

With the works of the more recent medallists, Sir Aston Webb, Mr. Belcher, Mr. Collcutt, Mr. Ernest George, which are familiar to everyone, we come more into the region of the "Free Classic," which arose on the ruins of the Gothic revival, and there is some beautiful work to be seen among these drawings. On the night of the Conversazione we noticed that the large perspective view of Mr. Collcutt's Imperial Institute (a building which seems hardly to have been rated at its full worth by architects) attracted a great deal of the admiration of visitors; and we may also congratulate Mr. Ernest George on the charming composition of the loggia and porch at Welbeck Abbey, which we do not remember to have seen before. The award of the medal to Sir L. Alma-Tadema (1906), fully justified by the splendid restorations of Greek and Roman architecture in his numerous paintings, is further illustrated here by two of his drawings for scenes in "Coriolanus."

The East Gallery is mainly devoted to the work of foreign recipients of the medal. Here we have drawings of Viollet-le-Duc's rather too drastic restoration of Pierrefonds, and a number of photographs of details of the Paris Palais de Justice, by Louis Duc, a building to which this accomplished architect for years gave his whole mind, and which is too little known, except in its general external appearance. It represents French architecture of the middle period of the nineteenth century, when something of the tradition of the First Empire still survived in architectural detail. Garnier is represented by a number of photographs of the detail and sculpture of the Paris Opera House. Two late American architects, Mr. Richard Hunt and Mr. McKim, are represented by a considerable number of photographs. Those of Hunt seem to indicate a want of a decided aim in architecture. The mansion called "Marble House," erected or designed for one of the Vanderbilt family—a dignified classic mansion, decorated with a large Corinthian order of pilasters, is a fine example of that type of work; but then we have a "Presbyterian Hospital," in a very commonplace "brick with stone dressings" manner, and another mansion of French château type. We do not believe much in the practice of architecture with such a free-and-easy eclecticism as this. Hittorff's prosaic drawings for one of the Paris railway stations it was hardly fair to his to exhibit in connection with the Gold Medal awards, since there can be no doubt that the medal was really awarded to him (in 1855) in recognition of his learned and splendidly illustrated works on ancient Greek architecture.

Penrose also, to whom the medal was awarded in 1883, no doubt owed the distinction to his monumental work on "The Principles of Athenian Architecture," but in the Maddox Street corridor there are hung a number of his water-colour drawings of the remains of Greek temples, which are excellent examples of pictorial illustration of this kind, though the view of the Theseum seems to show the columns rather too thin in proportion to their height. They are, in fact, a little thinner in proportion than the Parthenon columns, but so little that the difference should hardly be apparent in a perspective view on a small scale.

The drawings are to remain on the walls for two or three weeks, and we recommend our younger readers especially to pay a visit to the Institute rooms and study them, as representing the work and the ideas of some of the most eminent architects of the modern period. Such an opportunity may not soon occur again.

The New Session of the Institute.

THE opening meeting of the Institute of Architects on Monday last week, and the Conversazione on the Tuesday, were both a complete success as far as attendance was concerned, and we have no doubt that the new rooms will be recognised by all comers as a great improvement on the previous more limited field of operations, more especially in the case of a general reception such as was held on the Tuesday. The President's address at the opening meeting was an excellent one, practical in its character, and not too long, and the opportunity for saying something on the important subject of the proposed St. Paul's Bridge was well taken advantage of. Unfortunately on this, as on some other occasions, the introduction of a visitor of political note to move a vote of thanks for the address did not tend to edification—perhaps even less so than usual. It seems rather desirable that outsiders who are encouraged to lead the way on these occasions should have some knowledge of and interest in the subjects on which a Presidential address to a meeting of architects is likely to touch. The exhibition of drawings by past Gold Medallists was a fortunate idea, and gave visitors something of real interest to look at. The list of papers for the session promises some interesting meetings; we especially look forward to Professor Blomfield's paper on "Pierre Lescot and Jean Goujon"; to the consideration of "the Artistic Development of London," by Mr. Waterhouse, Mr. Rickards, and Mr. Simpson; and to a paper on "Coloured Relief as Decoration," by Mr. R. Anning Bell, himself a master of that form of art.

The Hellenic Society.

THE paper read by Mr. G. F. Hill, at the meeting of the Hellenic Society on the 8th inst., on "Some Græco-Phœnician Shrines," illustrated by lantern views of a number of little known coins from the fourth century B.C. to the third century A.D., turned out to have a definite architectural interest in the representations of temples on these coins. Several coins from Berytus, dated by Mr. Hill at about 200 A.D., showed a temple front, not with equally spaced columns, but with two columns close together at each side and a space in the centre; a most unusual thing on a coin representation of a temple. Mr. Hill thought this was only a conventional representation in order to leave space to indicate the shrine of the deity in the centre; but that is only his conjecture; it is quite possible that these coins may represent a special form of temple front of which there are no actual remains, and of which these coin images are now the only record.

The Soul of the City.

MR. COBDEN-SANDERSON has addressed to the "Westminster Gazette" a rather remarkable letter, in which he suggests, in connection with the subject of town-planning, what is a new and perhaps to many people will seem a fantastic idea, but in which we feel a good deal of sympathy. The moral of the town-planning Conference, he thinks, may be summed up in the conclusion that "mean streets make mean citizens, and mean citizens mean streets." But, granting the wider and better laid-out streets, he asks, where is the divinity of the city, and what does it worship? The ancient cities, many of them at least, are architecturally sanctified (our expression, not his) by the presence of the great cathedral which is its crowning glory. But the Christian Duomo or cathedral, he says, is the distinctive note of the past, not the living symbol of to-day. Many will disagree with this, of course, and we cannot in these pages go into religious questions; but undoubtedly there are many who will agree with it; and for them, what can be the substitute for the cathedral? Mr. Cobden-Sanderson's suggestion, which we cannot follow out in detail, is that the centre and crown of the city should be a great building, allied to no special sect or dogma, symbolising the spiritual element in life, the Artificer of the Universe; a place for spiritual meditation in the midst of a solemn and sublime temple. It is at all events a more ennobling idea than Mr. Burnham's "Commercial Centre" for Chicago, which we saw illustrated in the Town-planning Exhibition. Can we have no ideal in improved cities beyond those of commerce and convenience?

The St. Paul's Bridge Scheme.

THERE seems to be something of an enlightened public feeling getting up in regard to the proposed St. Paul's Bridge, and that not only among architects. We summarised last week the substance of a letter addressed by two well-known architects to the "Observer," with which in the main we entirely agree; and now we find an amateur, Mr. Lawrence Binyon—a very good representative of educated public opinion—taking up the subject in an ably written article in the "Saturday Review." "Here," he says, "is a chance to do something really worth doing, to create a worthy approach from the south to St. Paul's Cathedral. That the question should be reduced to a mere question of a new route for traffic from north to south is ridiculous." Not only should this be kept in mind, but also the possibility, in time, of enlarging St. Paul's Churchyard into a grand *place*, with the Cathedral in the centre, instead of its being hemmed round with narrow streets as at present. In a great city, and more especially in the vicinity of a great cathedral, the value per square yard of building land is not everything; there are other values in a city besides those that can be expressed in pounds, shillings, and pence; and in struggling to secure the latter we may succeed in hopelessly lowering the former. We hope other writers in the Press will follow Mr. Binyon's lead, and endeavour to get up an intelligent public feeling on the subject.

London's Unexampled Opportunity.

THE new General Post Office, in Newgate Street, having come into use, the old premises in St. Martin's-le-Grand are to be abandoned, and hard on these happenings there follows the announcement that the site of the old Post Office is to be offered to the municipal authorities before any attempt is made to dispose of it by other means. As the "City Press" points out, "it is a curious coincidence that this site should be available just as the Corporation is seeking power to throw a bridge over the river, and to demolish the warehouses at St. Paul's Cathedral," and it is easy to agree that "if by any means the Post Office site could be purchased, the improvement possible would be enormous"—that "in fact a better opportunity for town planning has probably never before presented itself in London." But the eternal question of cost again obtrudes itself. Neither the Corporation nor the London County Council is likely to be either able or willing to make any very substantial advance on the amounts already estimated with reference to the proposed new bridge. It is understood that the Corporation is prepared (1) to build St. Paul's Bridge at its own cost (£1,646,983); (2) to clear away the buildings between Cannon Street and Cheapside, leaving Old Change as the frontage to the Cathedral, at a cost of £600,000, of which the London County Council is to contribute £300,000; (3) to construct St. Paul's Bridge with special reference to the needs of tramways, and to give the County Council an easement for the construction of a tramway station under either Cannon Street or Old Change; (4) the Corporation makes no stipulation with regard to linking up any tramway lines by means of a tunnel under Aldersgate Street. These proposals seem to be sufficiently reasonable so far as they go; but they touch only the practical side of the question; and they ignore, besides the æsthetic interests, those other elements of discord which arise from the tone and temper of the two authorities entrusted with the government of London, who are deplorably apt to lose sight of important principles in their exaggerated regard for matters that may be deemed untoward because they are almost purely personal and factious. The question is, how can these various difficulties be overcome? The Corporation and the Council may be able at length to adjust their differences with more or less satisfaction to themselves; but this agreement does not necessarily involve the satisfaction of the æsthetic view, and it is still less likely to solve the problem as to the means of meeting the increased expenditure that would be contingent on the adoption of the larger scheme that is suggested by the inclusion of the old Post Office site. At length this particular part of London could be, in one extensive operation, transformed from almost the least to decidedly the most dignified part of the metropolis, and in this way the badly balanced layout of the great city as a whole would be in great measure redressed. Cannot the astute financiers and the rich City companies evolve between them some happy solution of the money difficulty which stands in the way of this very desirable consummation?

A Monument to Elizabeth Fry.

THE Local Government Committee of the London County Council have reported that Mr. Runciman, M.P., on behalf of a friend who wishes to remain anonymous, has offered to present to the Council, as a gift to London, a monument to Elizabeth Fry. The donor desires that the statue should be erected in the centre of Millbank Garden, which lies between the back of the Tate Gallery and the Council's buildings, and forms part of the site of the Millbank Prison. The statue will be by Mr. Alfred Drury, A.R.A., and is to be cut rather larger than life-size from one block of white marble. The figure will be in Quaker dress. We are thus likely to get a notable addition to the very few statues of women (other than those of Queen Anne and Queen Victoria) that have been exposed to the elements in our towns. White marble is the ideal material for a statue to Elizabeth Fry, but not surely for any sort of statue that is to be exposed out of doors in London. The choice of material, therefore, is not so regrettable as the choice of situation. The state of that statue after a few months' exposure to the dank and murky atmosphere of London will mock the anonymous donor's beautiful sense of fitness. The Tate Gallery being so near, why not afford the lady the protection of its hospitable roof before the damage is done? The merit of Mr. Drury's work is certain to justify the inclusion.

Public Magnificence and Private Simplicity.

THE Postmaster-General (Mr. Herbert Samuel, M.P.), in opening, on November 7th, the New General Post Office in Newgate Street ("King Edward's Building"), recalled a pithy saying. Claiming that the new building was by far the finest post office in this country, and one of the finest post offices in the world, he commented that "luxury was a bad thing, but there was much to be said for the doctrine of private simplicity and public magnificence." This is a hard saying, in which one would like to see the terms defined. "Luxury" seems rather an extravagant word to associate with either the interior or the exterior of the new Post Office; and perhaps it was not intended in this application. And it is, indeed, a word that, on the whole, one does not care to apply to architecture at all: "Luxury" being pigeon-holed in the mind as what Mr. Samuel, in homely simplicity of language, called "a bad thing," and suggesting unbridled excess, the decay of art and empire, and all sorts of minor evils, and more particularly the abnegation of the dignity of simplicity, whether public or private. The antithesis in "private simplicity and public magnificence" goes rather better; "magnificence," although the hem of its garment may be somewhat besmirched, still retaining most of its native character; for it may mean, as the dictionary informs us, "the grandeur of appearance" as well as the "pomp and circumstance" that is not necessarily involved. "Magnificence" and the Grand Manner may not be regarded as identical, yet may have much in common; the former term applying, perhaps, more appropriately to grandeur of scale than to sumptuousness of detail. The word being taken in that sense, the "doctrine" cited by Mr. Samuel may be passed as sound. Certainly our public buildings should be magnificent in the right way; and if they are, they cannot fail to exercise the right kind of influence, which will certainly tend towards simplicity in private requirements, always supposing that the example is rightly construed as an incentive towards fitness in design and decoration, and adaptation to purpose and environment.

CHRONICLE AND COMMENT.

Mr. Burns and the Housing Problem.

Laying the foundation stone of the Bevington Street workmen's dwellings at Liverpool—one of the largest projects which the municipality has undertaken for the better housing of the working classes—Mr. Burns said that he was glad when Liverpool abolished cellar dwellings. The stimulus for his action in forbidding cellar dwellings and back-to-back houses had been derived from his observations in Liverpool, which he had visited ten, twenty, and thirty years ago. He congratulated Liverpool on what it was doing to solve the housing problem. He knew, he said, that Liverpool had spent nearly a million of money on dwellings, and had erected 2,300 houses, occupied by a population of nearly 11,000 people. What was more, 80 per cent. of the people deposed had been rehoused on the site of their old dwellings. This was a public health movement, and must not be measured by pounds, shillings, and pence. If they could spend a one penny rate on their library, and millions a year on a liquor bill, surely they could submit to a microscopic addition to their rates in the interests of housing. Subsequently Mr. Burns paid a visit to the old Blue Coat School, now known as the Liverpool School of Architecture and Design. He congratulated Liverpool on possessing the first chair of architecture in the country, and said he wished town planners to remember that in widening their roads they ought not to narrow their tenements. The reason this country was freer from disease than any other country, possessed less infant mortality, and had led the world in Factory Acts, was due to the fact that the inhabitants of houses had ranged from five to seven, while in such superficially beautiful cities as Paris, Vienna, and Berlin, they ranged from 30 to 70 per house. In building beautiful buildings domestic architectural conditions ought not to be circumscribed. An amusing incident occurred at the close of his remarks, when a body of students, grotesquely attired, presented him with an illuminated address, in which the varied qualifications of the President of the Local Government Board were set forth, including the expression of a belief that he could even fill up Form IV.

Liverpool Cathedral : the Amended Design.

At a special meeting of the Liverpool Cathedral Committee, Mr. G. Gilbert Scott explained the proposed deviation from his original design by substituting for the twin towers a single larger tower. By the rearrangement, economy of space will be effected, the lighting will be improved, and the congregation will be assembled more closely, the new scheme providing a central space of 187ft. by 87ft., to accommodate 4,000 worshippers, while the choir, which under the new plan is expected to be completed in about six years, will seat 2,500; the total accommodation of the cathedral being about 8,000. The proposed Lathom Memorial Chapter-house will not be oblong, as at first designed, but octagon, and will be almost detached from the Lady Chapel. The cost of the Lady Chapel has been about £50,000, exclusive of gifts, valued at about £11,000. The principle of the proposed modification was approved, subject to further details being supplied.

Trentham Hall : a Munificent Gift.

It is announced that the Duke of Sutherland has offered to present his Staffordshire seat, Trentham Hall, and a portion of the extensive park adjoining, to the newly federated borough of Stoke-on-Trent. It is understood that the offer has been made in two forms. The hall, and nine acres of ground around it, will be given to the borough and maintained for five years by the donor; or the hall and 200 acres of land will be given for all time, the donor reserving to himself the right to the timber and grazing. In either case, the hall must be used for certain specified purposes, such as a picture gallery, museum, or lecture hall. It was built in the Italian style by Sir Charles Barry, at a cost of about £150,000. It has been offered before, the idea then being that it could be used as a place of higher education, such as a training college. The offer (in 1905) could not then be accepted; but it is thought that the newly constituted borough is in a better position to avail itself of so fine an opportunity of increasing its amenities.

Distress in the Painting Trade.

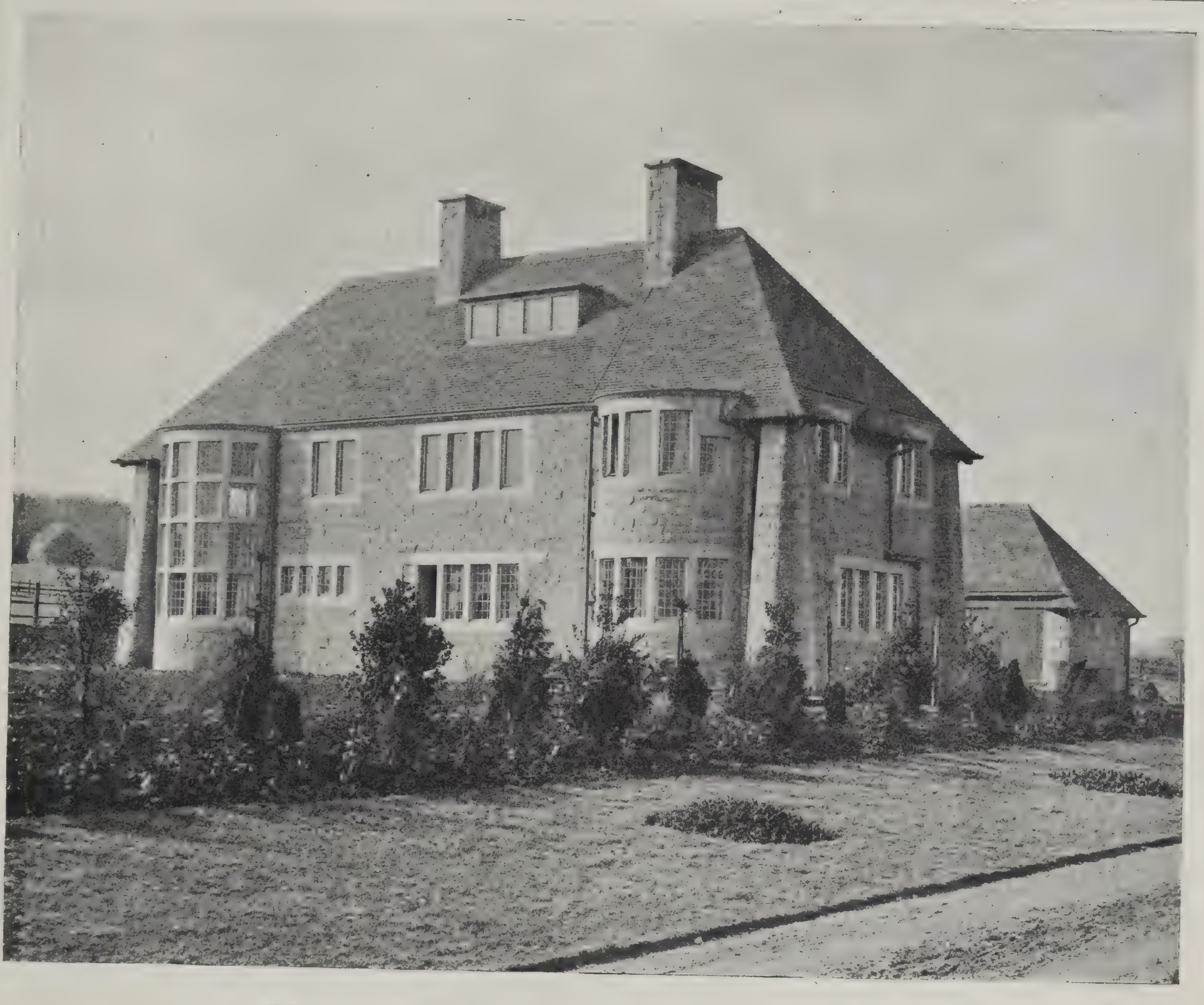
A deputation from the National Amalgamated Society of House and Ship Painters, which was also representative of non-union interests, attended a meeting of the Metropolitan Asylums Board, to urge that Board to put in hand painting and other work at their several institutions at once in order to relieve the distress in the Metropolis caused by unemployment among house painters. It was stated that there are in London from 60,000 to 80,000 men dependent for their livelihood on painting and decorating, and that at the present time probably 40,000 of these men are walking the streets looking for employment. The Chairman replied that sympathetic consideration would be given to the application, and the matter was referred to the Works Committee.

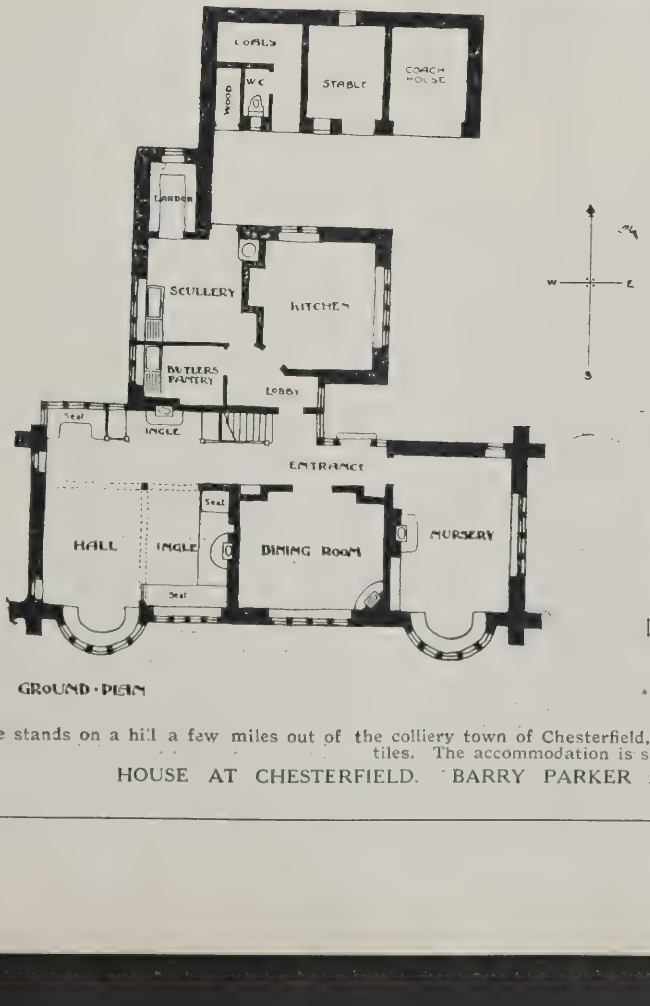
The Mall Extension Deadlock.

At the meeting of the Westminster City Council on November 10th, the Mayor (Mr. E. L. Somers Cocks) presiding, it was decided to approach the First Commissioner of Works with a view to secure a conference between representatives of the London County Council, the Westminster City Council, and the Office of Works, on the subject of the extension of The Mall. Colonel Probyn suggested that perhaps the cost of the proposal to make an adequate entrance from Trafalgar Square to the Mall might be equally borne by the authorities interested. But surely, as the Westminster Council have not hesitated to declare, this is a matter of national importance, and ought to be carried out at the national expense. The First Commissioner of Works "regrets that he is unable to accept" that view, and he cannot accept any responsibility in connection with "a metropolitan improvement with which the local authorities should deal." His contention is perhaps technically correct; but at any rate it is broadly farcical. Nor, unhappily, is there much hope either for or from, as the case may be, the proposed conference.

Government Quantity Surveyors.

There is a rumour that the Government contemplate the creation of a staff of officials to prepare the bills of quantities for Government building works hitherto entrusted to independent quantity surveyors. In particular, according to "Truth," the Admiralty is said to desire this in order to provide permanent berths for some of the temporary men originally engaged in the late Works Loan Department and since drafted into the Works Department. The course proposed, says "Truth," appears open to serious objections. Apart from the questions of efficiency and cost, the independent position of the outside surveyor is, our contemporary points out, "of considerable value in connection with contracts for public buildings, barracks, docks, breakwaters, etc. His bills of quantities are accepted with confidence both by the department and by the contractors whose tenders are based on these quantities. But it is not at all probable that the contractors would repose the same confidence in bills got out by officials of the department concerned. Not only the Admiralty, the Office of Works, and (partly at least) the War Office, but many public bodies, companies, and private individuals engaged in extensive building operations, have found it advantageous to employ independent quantity surveyors, and the abandonment of the system by the Government would be a great mistake."





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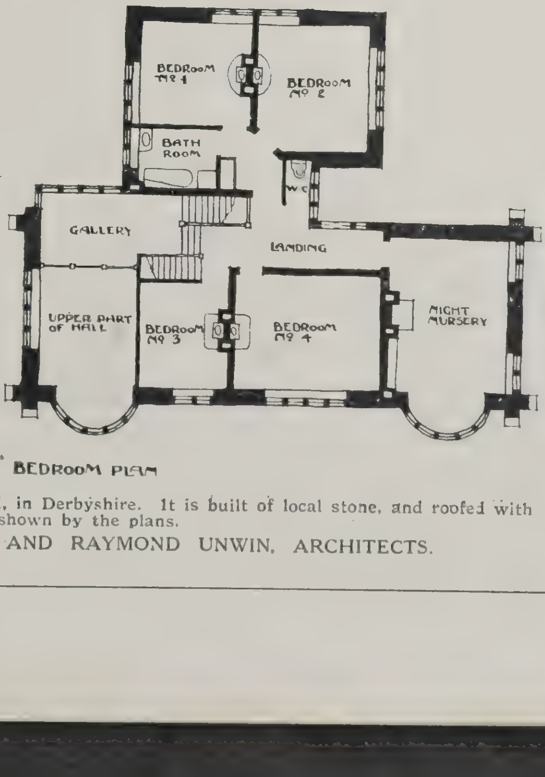

BEDROOM PLAN

This house stands on a hill a few miles out of the colliery town of Chesterfield, in Derbyshire. It is built of local stone, and roofed with hand-made tiles. The accommodation is shown by the plans.

HOUSE AT CHESTERFIELD. BARRY PARKER AND RAYMOND UNWIN, ARCHITECTS.

ENGLISH BRICKWORK.*

BY H. F. MURRELL, A.R.I.B.A.

"And they said to one another, 'Go to, let us make bricks and burn them thoroughly.' And they had bricks for stone, and slime had they for mortar." There we start at the very beginning. We may claim Babel as the first big brickwork contract, and Shinar Plain as the first paying brickfield. And it must be admitted that "brick for stone" has been the continuing truth, for men have preferably built in stone, turning to brick generally only in the absence of the finer material. Apart from Santa Sophia, I can think of no great historic building of the first order faced in brick. Yet behind the scenes in the dome of the Pantheon, and the cone of St. Paul's, it is doing its own structural work essential to the stability of these Titans.

Brickwork has proved itself particularly adapted to the lowlands of this country, with their excellent brick earth, abundance of fuel for burning, and sympathetic landscape. It is possible to draw a geographical brick line diagonally from Somerset to Northants, following the line of the oolite beds as the demarcation, north and west of which stone predominates, while south and east brick is the dominant material.

Roman Brickwork.

Evidences of Roman brickwork are spread all over the country, but Essex and Kent especially can show hundreds of churches into which Roman bricks have been built subsequently. Brick burning and building do not appear to have been practised prior to the Roman occupation, although existing remains prove that the art of pottery was not unknown. Roman clay-working was not confined to the typical 2in. flat tile, but included fine terra-cotta work, such as may be seen in Colchester Museum. At most of the Southern Chesters are found examples of the two Roman methods of employing brick construction—*Structura cæmenticia*, a mass of rubble concrete faced with stones, with bonding courses of two or three flat tile bricks, and *Opus testaceum*, in which the facing and arch work is brick. The most important British-Roman brickwork is at Dover, in the Pharos tower, and at St. Mary's-in-the-Castle.

After the withdrawal of the Roman troops, scientific construction abruptly terminated, the Saxons, with ignorant vandalism, misusing their stolen material, and often building into their arches Roman voussoir bricks upside down.

Norman Brickwork.

The Norman, familiar with a developed masonry, introduced a stone tradition for church and castle, yet, given a box of Roman bricks, he has put them together with far more skill and interest than his Saxon predecessor. St. Alban's Abbey, commenced about 1077, was largely constructed with Roman bricks from Verulam. Colchester Castle is also largely built of Roman bricks, and shows in the courtyard how effectively the herring-bone bond could be constructed in tile.

Early English Brickwork.

We are hardly justified in saying that no bricks were burnt in this country from the time of the Roman evacuation in 420 till 1260, the date of Little Wenham Hall, Suffolk, but brickmaking as an industry and brick-building as an art certainly did not exist during that period. The first cause for the re-use of brick was the growing scarcity not only of stone, but of timber, and the constant destruction of timber buildings by fire must have been a contributory cause to the introduction of a more resisting material. This movement manifested itself first in the Eastern counties, and in work of a domestic character. Little Wenham Hall has long been considered the earliest remaining record of this movement. Here bricks averaging 9¾in. by 9¾in. by 2¼in. are mixed with stone and flint in the general walling.

The little chapel of St. Nicholas, Coggeshall, is a most important link in the history of English brickwork; it must have been built not later than the end of the thirteenth century.

A very remarkable development took place in the neighbourhood of Hull late in the following century, with the import of brick from the Low Countries.

Brickmakers of to-day need not complain of the low price of bricks, for those used for King's Hall, Cambridge, in the reign of Edward III., cost 6s. per 1,000, while in the times of Richard II., Henry IV., and Henry V., they varied from 5s. 8d. to 6s. 8d. per 1,000. But then bricks varied greatly in size, those used in the Priory at Ely in the reign of Edward II. measuring 12in. by 6in. by 3in., and in many fifteenth-century buildings in Norfolk and Suffolk measuring 9in. by 4½in. by 1½in.

Tudor Brickwork.

The possibilities of brickwork were thoroughly grasped in Tudor days, and a style was developed which is the most typical of English domestic methods. In cottages and smaller houses brick was early discovered to be a suitable filling for half-timber framing, and diaper patterns were evolved from the accidental effects of vitrified headers. Some remarkably fine pattern-work may be seen at the old Bishop's Palace, Hatfield. Brick corbelling, as at Hadleigh, Layer Marney, and Rye House, is also a feature of Tudor work, while brick chimneys and newel stairs were developed as the craftsman became more and more skilled. Eton College, commenced about 1440, has some very fine chimneys, the bricks for which were supplied from a kiln at Slough—still a brick-making district.

Early Renaissance Brickwork.

Almost with the turn of the century, a new movement manifested itself. With the reigns of Henry VII. and VIII., characterised by great domestic building activity, the Renaissance note was struck. Wolterton Manor House, East Barsham, Norfolk, is one of the early examples—in many ways the most remarkable brick house now standing, with its chimneys and turrets, parapets and strings ablaze with brick heraldry, and a panel here or head there suggesting the Italian terra-cotta worker. Great Snoring Rectory, about a mile from East Barsham, and evidently by the same builder, shows still more the Italian influence. Sutton Place, Guildford, one of the great houses of the Henry VIII. period, shows a similar mixture of Tudor and Italian manner in its ornament, and Little Leigh's Priory, Essex, is yet another example of the home country mansion of this amazing period.

With the advent of Elizabeth, a distinct change becomes noticeable, brick losing its interest and elaboration with the advance of the Renaissance. With the development of the Jacobean style, it comes more into evidence, but showing Dutch influence frequently. Flemish bond is now seen for the first time. Kew Palace, sometimes called "The Dutch House," is a good illustration, and the Grammar School at Rye another. All up the East Coast this Flemish flavour may be detected, especially at such likely places as Lynn and Great Yarmouth.

Later Renaissance Brickwork.

As the new style came more into use, so brickwork was made adaptable to its features. Columns and cornices were built up of brick, and rubbed embellishments introduced. Inigo Jones was by no means averse to brick, though using it little in his more important works; but West Woodhay Manor House, and the old houses in Great Queen Street of the same period, remain as fine examples of brickwork by Inigo Jones.

Wren made great use of brick in domestic work, now for terrace houses on Clapham Common, now for Kensington Palace, but preferring stone for church work. Christ's Hospital, the Bluecoat School, Westminster, and Hampton Court, at once come to mind as further examples.

Georgian Brickwork

The brick style initiated by Inigo Jones and popularised by Wren, became the vernacular for the whole of the eighteenth century. For Queen Anne and Georgian alike brick was the medium in which were expressed the comfort and dignity of the English country house. In town houses the Orders are more apparent, the finest examples remaining in London being Nos. 33, 42, 43, and 44, St. Martin's Lane, No. 43 having the Roman Doric Order rendered completely in brick, from the fluted pilasters to the guttæ on the soffit of the cornice.

The centre pediment from a house at Enfield, now in South Kensington Museum, marks the climax of Renaissance art in brickwork. Then followed a decline, hastened by the general introduction of stucco late in the eighteenth century, which militated not only against the artistic value of brickwork, but also against its constructional quality.

Nineteenth Century Brickwork.

To think of the architectural revivals of the nineteenth century is to recall to mind pictures mainly of brick buildings. Pugin led the way by including in his "Examples" such Tudor buildings as Oxburgh, East Barsham, and Great Snoring, while other leaders in the Gothic Crusade gave further proof of the worth of brickwork. Butterfield at All Saints', Margaret Street, Nesfield in his lodges at Kew and Regent's Park, and Street with his score of churches, stand prominently forward.

Then coming down to our own day, we have Bentley's Westminster Cathedral and Norman Shaw's masterly houses in brick, which have induced a thousand weaker brethren to cover town and country with Queen Anne and Georgian effects.

The scientific development of brickmaking, though increasing the commercial usefulness of bricks, has not equally improved their artistic quality. It has yet to be proved that pressed facings, though included in some Government specifications, will weather as perfectly as have the rubbed bricks of Wren's banqueting hall at Kensington Palace.

The possibilities of glazed brick seem first to have been attempted by Butterfield, as in the interior of All Saints' Church, but, in spite of many other interesting essays, their architectural use must be admitted to be still in the experimental stage.

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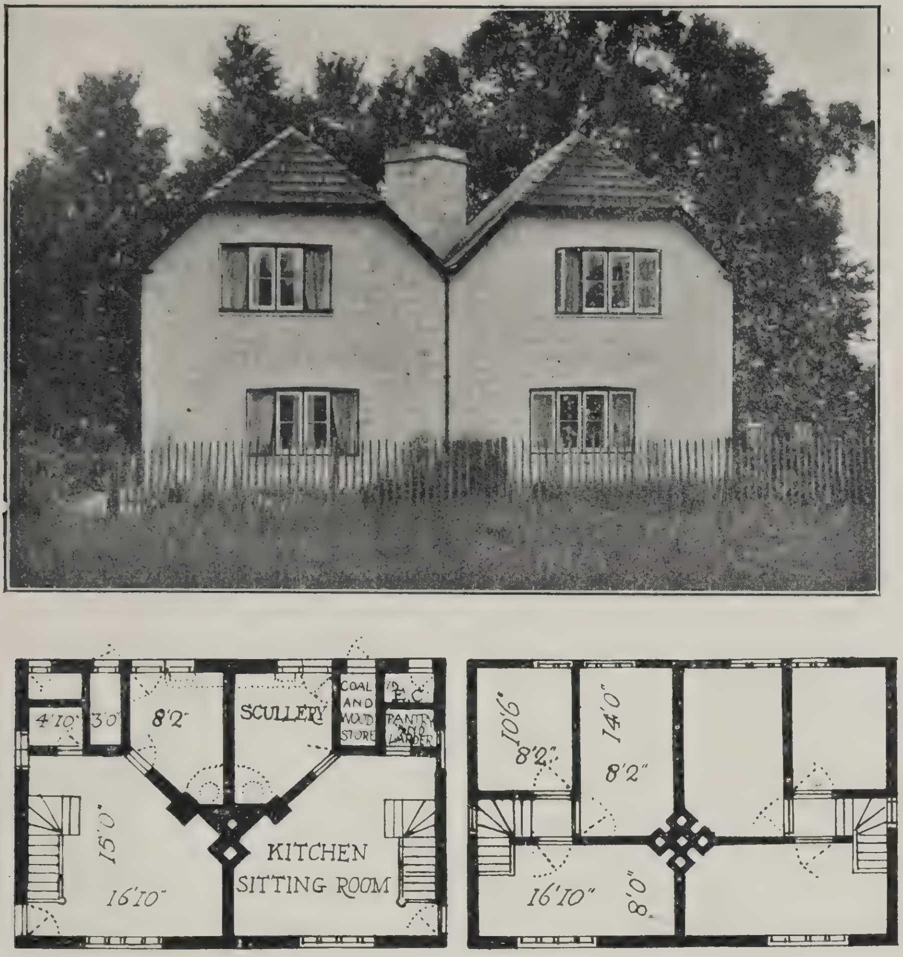
* Summary of a paper read before the Institute of Builders on November 2nd, 1910.



These cottages have been built by Mr. J. St. Loe Strachey, editor of the "Spectator," on his estate at Newlands Corner, near Guildford, Surrey. Particulars given in our last week's issue show that they have cost rather less than £300 the pair. The walls are of concrete blocks.

MR. ST. LOE STRACHEY'S PAIR OF £150 COTTAGES.

In conclusion, it may be observed that whatever method of construction may determine the course of urban architecture in the future, brick is likely to remain the building material most suited to express the amenities of English country life.

CORRESPONDENCE.

The Editor declines responsibility for the statements made or opinions expressed by correspondents.]

The Minimum Cost of Cottages.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—Your editorial of November 9th covers a great deal of what may be said respecting Mr. J. St. Loe Strachey's experiment. I have, however, seen the sketch plans of the cottages as published in the daily press, and some additional remarks suggest themselves to me. The pair of cottages appear to contain approximately 17,300 cubic feet, the cost being £300, the price per foot is about 4 1-6 pence. Cottages of a decent character can be built in some districts for less than 5d. per foot; and when extraordinary efforts are made by all concerned to keep down cost, the builder works for nothing, and no architect is employed, it does not seem at all surprising that houses containing such a minimum of accommodation can be built for the sum named.

Mr. Strachey makes it clear that people can be found who are quite contented with these little houses, but I doubt very much whether they are suitable for the average labourer with a family.

The question of minimum cost depends upon the minimum accommodation that will be accepted by tenants; and if the owner has no wish for such a design as would prevent his cottages being blots on the beauty of the countryside, a small sum (not nearly as great as is often suggested) may doubtless be "economised."

Are there any by-laws in force at Newlands Corner? Apparently not, for the gutter on the top of the party wall would not be allowed in any district covered by the usual building regulations.

No mention is made in the builder's accounts of drainage, water supply, or fencing.

COUNTRY ARCHITECT.

The Cheap Cottage Problem.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—In 1896 I designed and erected a pair of cottages on farm land in this district for £303, that is, £151 10s. per cottage. The accommodation on ground floor consists of living-room, scullery, larder, coal and earth closet, on first floor three bed-rooms.

Mr. St. Loe Strachey's solution therefore comes somewhat late in day. I may state that these cottages had to comply with the Model Building By-laws, which are in force in the parish in which they are built. The above were built by contract; therefore the cost includes builders' profit.

R. SINGER HYDE, M.S.A.

Worthing.

An Open Competition for St. Paul's Bridge.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I am sure the profession generally will be in agreement if I strongly deprecate the applause with which the President's suggestion, that no competition be held for the proposed St. Paul's Bridge, was met at the Royal Institute. Those who applauded must have been quite unconscious of their true position. On behalf of architects' assistants, architecture, and the profession generally, I beg to oppose such a retrograde proposal.

It is not my object to unearth the arguments pro and con for competitions but to point out (1) that they offer the only possible outlet for the majority in our profession; (2) that the artist sees in them his only chance of contrasting his abilities with those of his fellows, in executed work; (3) that the engagement of an "eminent" architect does not imply the best result, resting, as it does, on negative evidence, which may be overturned in a very positive manner, as some recent competition results have shown. It is in these small matters that one often notices the gradual growth of greater things, and it is the duty of all interested in the development of architecture and the retention of the important opportunities that public competitions provide, to see that these insidious signs of the introduction of reactionary ideas into our profession are quickly and boldly repressed.

E. J. DIXON,
Hon. Sec. Guild of Architects' Assistants.

MAGAZINES & REVIEWS.

The "Art Journal" contains an extremely interesting account by Sir F. T. Piggot, who has known Japan intimately for many years, of "A Japanese Drawing Lesson," or a series of lessons, given to himself by a Japanese artist. The article gives a curious insight into Japanese methods of drawing and designing. He was to begin by drawing a flying bird, but no model in the shape of a bird or bird's feathers was put before him. The sketches of his teacher supplied all the models. It would seem from his account that the Japanese artist has a formula, learnt by heart, for the strokes of the brush (no pencil is used) necessary to express each portion of the bird, and the ultimate result is attained by putting these together. That explains both the apparent certainty of Japanese drawing with very few strokes, and also the great resemblance of Japanese drawings to each other. On the whole, the account does not tend to raise our opinion of Japanese art, which appears from this evidence to consist in a mastery of adopted conventions of drawing rather than in direct observation of nature.

The "Burlington Magazine," in a short editorial, denounces as "a national eyesore" a new theatre at Windsor, "whereby the time-honoured view of the Castle from the river is ruined and defaced," and pours contempt upon its architect, Mr. Verity. In all probability the architect did not select the site; and, as to the building itself being an eyesore, we have much more faith in Mr. Verity's architectural judgment than in that of the "Burlington Magazine," which has not hitherto shown much perception in its treatment of architectural subjects. Among the contents of the magazine is a valuable article by Mr. W. G. Thompson on "Hispano-Moresque Carpets," with some illustrations.

The "Contemporary Review" is reprinting, in consequence of the present interest of the subject, Holman Hunt's article on "The Pre-Raphaelite Brotherhood," which appeared in its columns many years ago. Those who want to understand what that movement really meant, and under what circumstances it arose, should read this most interesting authoritative record by the chief actor in it.

The "Gazette des Beaux Arts" contains an article by M. Clouzot on a subject which is of interest in these Town-Planning days, the title being "L'Haussmannization de Paris." This is mainly a reaction against Haussmann, rather unfairly, for it cannot be denied that a great deal of the present stateliness of Paris is due to Haussmann, to whose credit it must also be recorded that he did not, as many people have supposed, make a fortune out of his operations (as he might easily have done), but died a comparatively poor man. M. Clouzot's complaint against him is that he demolished a good many interesting buildings in making his new streets, which is probably true; and that he made straight streets everywhere. M. Clouzot says—Give us wide streets by all means, but why straight? To which we may reply—Why not? Or if he wants curved streets, on what principle does he propose to align the curves? A curve for the sake of a curve, except as part of a geometrically laid-out whole, seems rather absurd. On the whole, we are inclined to think that Haussmann did a great work in Paris, and has been the subject of a good deal of undeserved abuse.

The "Century" contains an article on "The Great Modern Hospital," by Dr. Gilman Thompson, of Cornell University, which gives some of the latest American views as to the principles of hospital arrangement and working. There are bird's-eye views of some large hospitals, and some illustrations of interior arrangements, but no plans are given.

In "Harper" an article by Mr. Archibald Henderson, "In Praise of Bridges," gives photographs of some picturesque old-world bridges (some of them not much known), and ends with some remarks in defence of "the romance of the steel bridge," to which he thinks we have now come. There may be something in that, if only engineers would stick to construction and not try to make them "ornamental."

"Scribner," under "The Field of Art," has some words on an American animal sculptor, Mr. Phimister Proctor, who seems to be an artist. His crouching tigers flanking the entrance to a hall at Princeton University have something of the monumental quality of Barye's animals.

The "Strand Magazine" publishes an illustrated article of suggestions for "A Palace for the King"; suggestions on a most ambitious scale, of a new palace in Classic style with a dome; in Italian style with a vast formal garden in front; in a quasi-Egyptian composition with pylons in front; and a copy of Inigo Jones's great Whitehall Palace scheme. We like the last idea best, but where is it to be placed, unless the originally intended site could be cleared for it? No one would recomend building up part of Buckingham Palace Gardens, be it with ever so fine a building. Nor do we think there is any chance of Buckingham Palace being pulled down bodily to make way for a new palace. It ought, as we have already said, to have a new façade. But it is a good sign to see a popular magazine recommending palace-building on a magnificent scale, though there may be a little too much of megalomania in its suggestions.

OBITUARY.

The late Mr. Cornelius Mansfield, builder, of Stratford, E., who died on February 28 last, left estate which has been proved at £44,107 gross.

NEWS IN BRIEF.

The Office of Works.

Mr. Dudley Ward, M.P., Treasurer of the Household, and one of the Junior Whips, will represent the Office of Works in the House of Commons.

* * *

Hospital for Women, Soho Square.

The Hospital for Women in Soho Square, London, W., has just been rebuilt at a cost of £21,000, from designs by Messrs. Adams and Holden.

* * *

Kingston Bridge to be Widened.

A Bill is to be promoted in Parliament for the enlarging of Kingston Bridge to a width of 55ft. between the parapets, with footpaths 10ft. wide. The total cost will be £109,000.

* * *

The R.I.B.A. and the Lady Mayoress.

The Royal Institute of British Architects has presented to the Lady Mayoress (Lady Knill) a replica of the Pugin Medal in silver, as a souvenir of the Town Planning Conference. Lady Knill is a granddaughter of Pugin.

* * *

The Radium Institute.

In connection with the Radium Institute, Riding House Street, Portland Place, W. (illustrated as a centre plate in our issue for November 2nd), it may be mentioned that Messrs. Chance Brothers and Co., Ltd., of Smethwick, Birmingham, supplied the Vitreous Tiling used on the main staircase and corridors of the building. Messrs. Chance Brothers' tiling was also used for the bathrooms in the extensions recently carried out at the Savoy Hotel.

* * *

Another Statue of Racine.

A statue of Racine, representing the poet in his boyhood, has been unveiled by M. Jules Lemaître at La Forte Milon, where Racine was born, and where he spent a considerable part of his early life. M. Lemaître congratulated the sculptor of the statue, M. Hiolin, upon the fact that enough was known of Racine's boyhood to render possible a plausible representation of his face and form at 14 or 15 years of age based upon David d'Angers's well-known statue of him in later life.

* * *

The Liverpool Memorial to King Edward.

The question of choosing a site for Liverpool's memorial to the late King Edward has assumed a new phase. At the request of the Lord Mayor, and other influential members of the Memorial Committee, a number of our most eminent architects have examined Mr. Goscombe John's design in relation to its possible effect upon St. George's Hall, and have made an inspection of other available sites in the city. As a result, Mr. John has been requested to prepare a new and more perfect model of his design, after seeing which the architects in question will pronounce their verdict.

* * *

Concrete in Coast Defence.

A tortuous bank, protecting low-lying marshes adjoining the foreshore of an estuary at Aldeburgh, Suffolk, is now being protected on the keyed block system by Messrs. Foreshore Protections, Ltd., the company which in this country works the De Muralt process for the protection of foreshores and river banks with armoured concrete. This bank has been faced with carefully selected clay puddle, to an even slope of 1 to 1½, and timber piling at the foot of the wall has been cut to a uniform level and backed with mass concrete to form a foot wall. Behind this, in place of the usual chalk and ragstone pitching, the keyed slabs have been laid.

LEGAL CASES.

Disregarding the By-Laws.

At Chelmsford recently, Mr. H. W. Iles, architect and surveyor, Billericay, was summoned for contraventions of the building by-laws of the Chelmsford Rural District Council at Buttsbury. It was alleged that he failed to give notice of his intention to erect a building, that he started work before plans were deposited, and that he failed to give a description of the materials to be used. Defendant pleaded guilty, and was fined £6 and 16s. costs.

* * *

Use of the Initials "M.S.A."

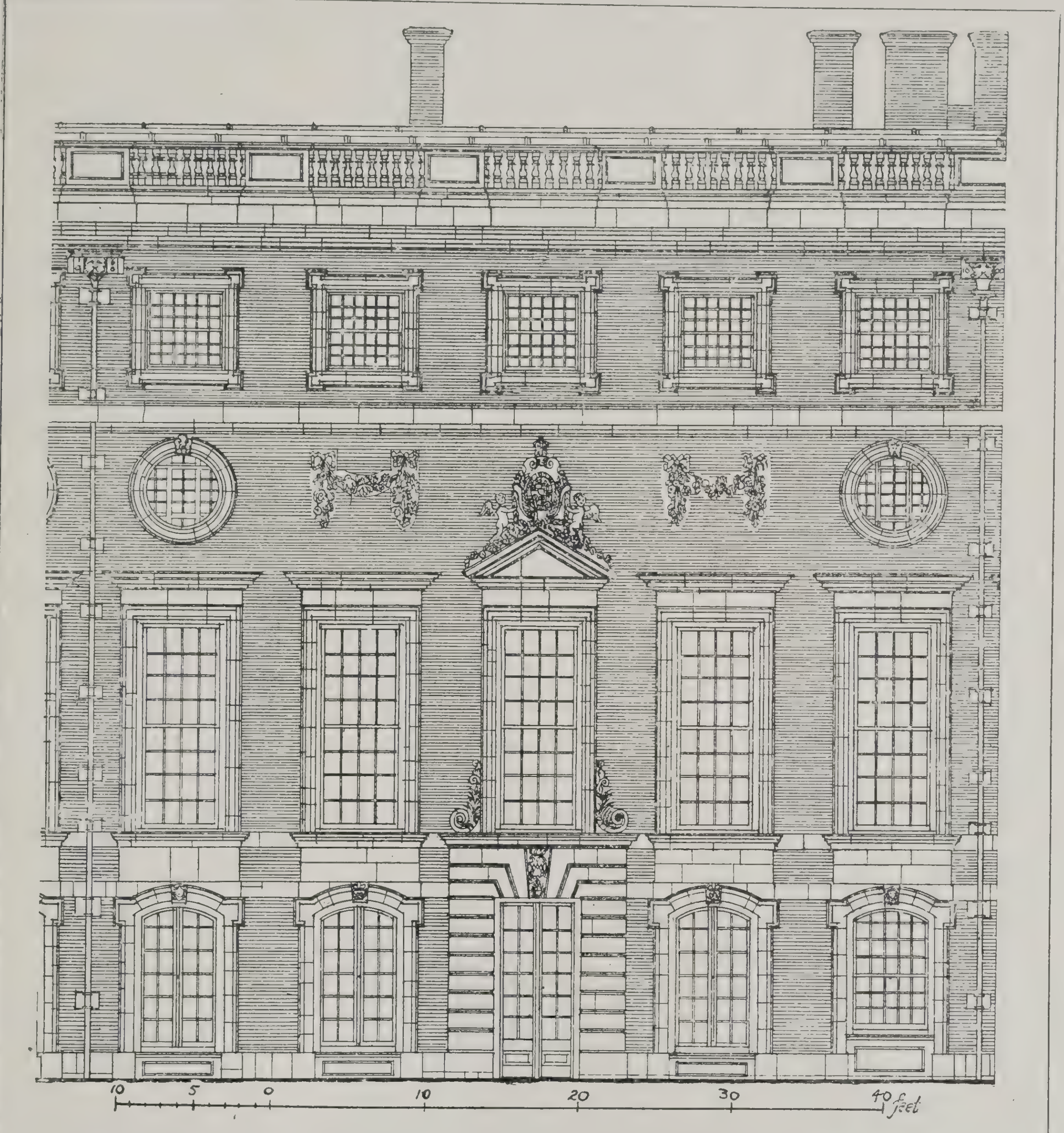
The action of the Society of Architects v. C. E. Kendrick, of Stourbridge, came recently before Mr. Justice Eve, in the Chancery Division of the High Court of Justice. Mr. Nevill said the action was brought to restrain defendant, a builder and architect, from using in his profession the letters "M.S.A." after his name, or in any other way representing that he was a member of the plaintiff society, the members of which used the same letters. The action was undefended, and defendant did not appear. Mr. Justice Joyce had already dismissed plaintiffs' action as too trivial for the Court. There was, however, some informality in the procedure, and plaintiffs again brought the action on motion for judgment for an injunction against defendant. His lordship said he could make no order. The plaintiffs must consult Mr. Justice Joyce, and see what he thought should be done. The case was adjourned accordingly.

CLEANING A CONCRETE BRIDGE.

The following account of the method of the cleaning of a concrete bridge at Washington, D.C., gives instructive data as to this mode of procedure: The bridge had a mortar facing, and after this was completed a heavy rain caused the entire north façade to become discoloured by efflorescence. This discoloration was not uniform, but was in streaks and blotches of white. To clean the bridge, trial was first made with water and wire brushes, but after a little work this method was considered impracticable, owing chiefly to its cost, which was estimated at 10s. a square yard. Washes of diluted hydrochloric acid, of diluted acetic acid, and of diluted oxalic acid were then tried in conjunction with ordinary scrubbing brushes. The hydrochloric acid wash proved to be the best, and the acetic acid was next in efficiency. The wash finally adopted consisted of a solution of one part hydrochloric acid and five parts water. This was applied vigorously with scrubbing brushes, water being constantly played on the work with a hose to prevent the penetration of the acid. One house cleaner and five labourers were employed on the work, which cost 2s. 6d. a square yard. This high cost was due largely to the difficulty in cleaning the balustrades. It is estimated that the cost of cleaning the spandrel and wingwalls did not exceed 20 cents a square yard. The cleaning was thoroughly satisfactory. Some of the flour removed was analysed, and found to be silicate of lime.

WREN AND HIS CRAFTSMEN AT HAMPTON COURT.

The detail of sculpture on the south front of Hampton Court Palace, illustrated on page 498 of this issue, is one of the finest pieces of stone carving on Wren's great building. As seen from the drawing below, it comes over the middle window of the range on either side of the central feature of this front, which overlooks the Priory Garden. Seeing that the work was carried out about 1695, it is remarkable to note how well the Portland stone has preserved its sharpness, the details of the carving being still quite clear. One cannot but admire the grouping of the *amorini* supporting the escutcheon, with garlands and the usual flowers and fruit of English Renaissance design standing out white against the glowing red brickwork.



THE SOUTH FRONT OF HAMPTON COURT PALACE: PART ELEVATION SHOWING WINDOWS AND SCULPTURE IN RELATION TO FACADE.

Wren's treatment of his craftsmen was always generous and discerning. As Mr. Arthur Stratton says in a privately printed brochure on "The Life, Work, and Influence of Sir Christopher Wren," when he came across men like Grinling Gibbons and Tijou he gave them every scope for the unfettered play of their genius, while at the same time subordinating their work to the governing architectural design. That he was fortunate in his craftsmen, however, there can be no gainsaying. In Strong he had a master-mason of exceptional ability. So too in Jennings, his master-carpenter; while Gibbons and Cibber were the two most skilful sculptors of the day. These two were both foreigners, the one a Dutchman, and the other a Dane, but so great was their influence that they created quite a school of carving in England, still noted for its fanciful and luxuriant design, and its marvellous execution. Tijou also was a foreigner—a Frenchman. Very little is known of him, which is the more remarkable in view of the fact that he, too, created a new school of work in England. Presumably he was one of the French Protestants who fled to Holland in 1685, on the revocation of the Edict of Nantes, and came to this country with, or not much later than, William and Mary. We first hear of him through his bill, entered in 1690, for six richly-wrought iron vanes at Hampton Court, and a balcony "in finely wrought leaves and scroll-work." Thereafter a great deal of similar work at the Palace came into his hands, including the magnificent garden screen. In a very short time a great prospect opened out before him, and simultaneously he was executing work for the wealthy owners of Chatsworth, Burleigh, and Wimpole, while a commencement had been made with the work at St. Paul's. His prosperity, however, was short-lived, the primary cause being the premature death of his patron, Queen Mary. Trouble ensued later with Talman, resulting in the royal patronage being withdrawn, and in the end he retired abroad, and died in Paris—so it is said—broken-hearted.

SOCIETIES' MEETINGS.

Manchester Society of Architects.

On November 9th, at a "sessional papers" meeting of the society, Mr. Herbert L. North, B.A., read a paper on "Some Aspects of the English Tradition in Building." Tradition in building, Mr. North said, was the accumulation of experience in producing a balance between the purpose of the building, the time or money expended upon it, and the nature of the materials used. So there is an unbroken line of advance from the primitive wattle buildings of our ancestors to Westminster Abbey or the well-nigh perfect stone cottages of the Cotswolds. Architecture in the Middle Ages, as the literature of the period shows, excited much greater influence than to-day. He asked, how was it that the public care so little about architecture? Was it not because the chain of tradition was broken, and the foreign craftsmen and the paper architect have grafted on an exotic branch which has borne bitter fruit? The Renaissance was at first a stimulating influence; but when the great lights had departed, it became more pompous and pedantic, and, the greatest sin of all, it killed the English love of colour.

Then there was the paper architect. Architecture has become an individual matter, not a matter of almost national universality, and this, he suggested, was why we had lost the public interest. We have one fashion after another. In the course of one generation we have gone through the whole architectural gamut. How great a force we should be if our work sprang from our English traditional tree, if we worked on the same practical and truthful system again, a system of infinite elasticity, with the widest scope for genius.

Coming to practical points, Mr. North thought that as reinforced concrete took the place of older material some new treatment would be required, but for smaller buildings in the country he advocated traditional materials and methods. He instanced several aspects of the treatment of roofs, dormers, partitions, ceilings, etc. Old roofs were generally about 20ft. span, dormers were placed at least half-way up the slope. The most successful pitches were 50 to 55 degrees, and where a roof was continued downwards at a smaller pitch, the lengths of the two sections should be approximately equal. The traditional treatment of partitions, stud and panel, or stud and plaster, was little more expensive than the Georgian lath and plaster partition, and far more desirable, and the old beamed ceilings were much more interesting than an expanse of white plaster. Touching church work, the best point at which we should take up tradition was the 13th century. Later styles had less possibility of expansion.

Several members took part in the discussion which followed. Mr. Phil. Barker spoke of Mr. North's work, and thought it always looked at home with the English landscape. The President, Mr. P. S. Worthington, thought that tradition served its most useful purpose when we had in our study steeped ourselves in it, and it became part of us and came out naturally in our work, rather than when traditional features or methods were definitely copied. He regarded the Renaissance as the natural outcome of the life of the period.

J. T. H.

Sheffield Society of Architects.

Mr. W. T. Cresswell, F.S.I., of London, lectured at the Sheffield University on November 10th, to members of the Sheffield Society of Architects and Surveyors on "Taxation of land values."

In recent years, said Mr. Cresswell, the tendency of legislation had been to shift an increasing proportion of the burdens of taxation on to the land. In the Finance Bill of 1909 this principle had been adopted to an extent never before attempted. The Act was full of difficulties, not only to the laity, but also to experts. Even the Commissioners of Inland Revenue had been forced to state, in answering inquiries, that they gave their replies with reserve, as "they could not commit themselves in advance to a definite course of action in individual cases which might be governed by circumstances not now before them." The Act really meant the compilation of another Domesday Book.

Having gone through Form IV., and given his view in regard to the meaning of the more important queries, Mr. Cresswell said the public mind had been much exercised as to the best and proper method of filling in the Form. As the law stood the question naturally arose as to whether it was advisable to facilitate a high figure being fixed for the original site value, or whether a low figure, or whether to be moderate and cautious. There were those who held that when land was developed it was advisable to facilitate a high figure being fixed, and even when land was undeveloped this might also apply. Among points to be considered were the possibility of the land being required for compulsory purchase; the total value would affect the death duties one or other of the values might become the future assessable ratable value; future taxes might be levied on the total site value, and valuations for the purposes of the State would be based on the 1909 valuation.

The "optional" questions were most difficult to fill in, and it was generally thought they would be best left to the Government valuer. The deduction should be claimed.

Mr. W. C. Fenton proposed a vote of thanks to the lecturer.

Mr. C. B. Flockton, who seconded, characterised the Act as a most chaotic piece of finance. He took some interest in charities, and should like to know what these were exempted from. They had read a good deal of information from the newspapers on the subject, and they had read of many promises. But many of these promises were founded on wind and not on rock.

Mr. W. G. Buck cited a case of a man who bought some property after 30th April, 1909, and sold it again at a considerable profit before the Finance Bill was passed. He had received Form IV., and returned it, saying he was not the owner of the land on April 30th. It was sent backwards and forwards, and at last, on the advice of his solicitor, he had returned it once more, on the ground that any answer he might give would probably prejudice the present owner.

Mr. E. M. Gibbs remarked that the Act had one remarkable merit, it encouraged people to give something like the real and true valuation of land.

[A report from the Leeds and Yorkshire Architectural Society will be found on p. 511.]

Northern Architectural Association.

A Saturday afternoon party of this Association recently visited the new Conservative Club being erected in Pilgrim Street, Newcastle, and were conducted over the building by Mr. R. Burns Dick (of Messrs. Cackett and Burns Dick, architects), who described the disposition of the various parts, and explained how difficulties consequent upon the shape and surroundings of the site had been surmounted. The furniture depository being built for Messrs. Bainbridge and Co., in Higham Place, was afterwards inspected under the guidance of the architect, Mr. J. Walton Taylor.

R.I.B.A.

Mr. Leonard Stokes, speaking at the meeting of the R.I.B.A., on Monday, 17th inst., said that Mr. Raymond Unwin, who was largely responsible for the magnificent exhibition at Burlington House, had been elected a Fellow in recognition of services rendered. Mr. Stokes then presented to Mr. J. W. Simpson an old Sheffield plate silver inkstand, on which was inscribed, "To John W. Simpson, from the Royal Institute of British Architects, in Appreciation of his Services to the Town Planning Conference, 1910."

Mr. J. W. Simpson, in acknowledging the gift, said he believed that the occasion was the first time the Institute as a whole had made a presentation to one of its members. In a few graceful words Mr. Simpson then acknowledged the valuable assistance of the staff, mentioning particularly Mr. Unwin, Mr. Lanchester, Sir Brumwell Thomas, Mr. Henry Tanner, and Mr. Dare Clapham, whose deeds were chronicled in the Book of the Conference.

Sir George Reid, High Commissioner for Australia, proposed a vote of thanks to Mr. Leonard Stokes at the conclusion of the paper, and observed that architects had a sound grievance in the St. Paul's Bridge controversy. One could not go through London, he continued, without wondering how the city had been built at all. There was not much trace of a plan. In London he knew of no grand thing less than 100 years old. Things moved slowly in London, as witness the fact that it had taken the Institute 73 years to get a home of its own. Australia in 1837 was a silent, verdant space that had been slumbering for ages without a glimmer of civilisation. To-day it was one of the most progressive countries under the sun. They were going to establish a capital in Australia, and he hoped they would have the advantage of the very best plan that could be provided.

The Earl of Plymouth seconded the vote of thanks, and acknowledged the honour of being elected an Hon. Fellow of the Institute. Although very hard things were said about architecture in this country, he continued, the blame was largely due to those responsible for the financial part. When connected with the Office of Works it had been his endeavour to establish a small committee of experts, on which the R.I.B.A. would have been represented, to examine and pass proposed work, and thus gain the valuable advice of those who had devoted their lives to the study of architecture.

Mr. Walter Millard said he had known the president for thirty years, and related a few early reminiscences. Street's prediction that "Stokes would be a man with a head on his shoulders" had been amply fulfilled.

Statue to the Late Duke of Devonshire.

The ceremony of unveiling the statue of the late Duke of Devonshire in Whitehall will take place on November 28, and will be performed by the Marquis of Lansdowne. The statue, which is 11ft. high, is of bronze. It is by Mr. Herbert Hampton.

SHORING AND UNDERPINNING AT WINCHESTER CATHEDRAL.

The very interesting operations at Winchester Cathedral were described by Mr. T. G. Jackson, R.A., in a paper read before the St. Paul's Ecclesiological Society, in whose Transactions it forms Vol. VI. From this we have extracted such particulars as seem to be of exceptional practical value.

"THERE is, perhaps," said Mr. T. G. Jackson, R.A., in an account of Winchester Cathedral, and of the repairs now in progress, which he gave, early in the present year, at a meeting of the St. Paul's Ecclesiological Society in the Chapter House, St. Paul's, "no great church that affords a better epitome of the progress of architecture in England, or a more interesting display of architectural ingenuity, than Winchester Cathedral. Every successive style of our native art has left its mark on the fabric, from the majestic simplicity and rude magnificence of Romanesque to the last phases of Gothic, when the art of masonry has attained a mastery over material, and a skill in construction that surpassed all previous effort." It excels in woodwork as well as in masonry. In the thirteenth century woodwork of the choir we have perhaps the earliest, and certainly the most beautiful, stalls in Northern Europe; and in the later screens and stalls of the Lady Chapel and Bishop Langton's oratory the most delicate and refined woodwork in the kingdom. The cathedral, in fact, is a storehouse of every kind of English art at its best.

An Ill-chosen Site.

The selection of the site, however, was most unfortunate, and trouble arising from bad foundation has been from time to time the occasion of alteration and rebuilding, and was the immediate cause of Wykeham's great scheme for remodelling the nave in the fourteenth century. "From that time to this the mischief has gone on continuously, till the tentative and partial remedies applied during the last two centuries had proved themselves insufficient to prevent the impending ruin of one part, and the gradual widening of the rest. The present task of repair was taken in hand not in my opinion a day too soon to prevent a catastrophe."

The earlier Saxon church seems to have stood slightly to the north of the present building, and was used up to the day of the dedication of its successor. The rebuilding of Winchester was begun by Bishop Walkelyn in the year 1079, and, says Mr. Jackson, "when one considers the poverty of the time, the little skill in construction, the simple mechanical appliances available, and the scanty population—which, even two centuries later, is estimated only at from a million and a half to two million—one cannot but be struck with amazement at the enterprise which prompted the men of that time not only to conceive these mighty schemes of architecture, but actually to carry them into execution." The two transepts and the crypt under the choir are obviously of Walkelyn's date. The character of his work is rude, almost barbarous. The masses of masonry are enormous, the detail is simplicity itself. No sculpture decorates it beyond a billet or a dentil, such as any humble mason could execute, consisting, in fact, merely in cutting out every alternate space of two or three inches in a running moulding, and leaving the interval solid. The columns, however, were cushion capitals, formed by squaring off the four sides of an inverted cone. Those of the end galleries of the transepts, and some of those in the crypt, are strangely primitive, consisting of a thin abacus on a shallow echinus moulding, possibly a rude attempt to reproduce the Doric capital of some Roman remains of ancient Venta. But, rude as it is, the general effect is magnificently impressive, and there are few more splendid façades than that of the south transept.

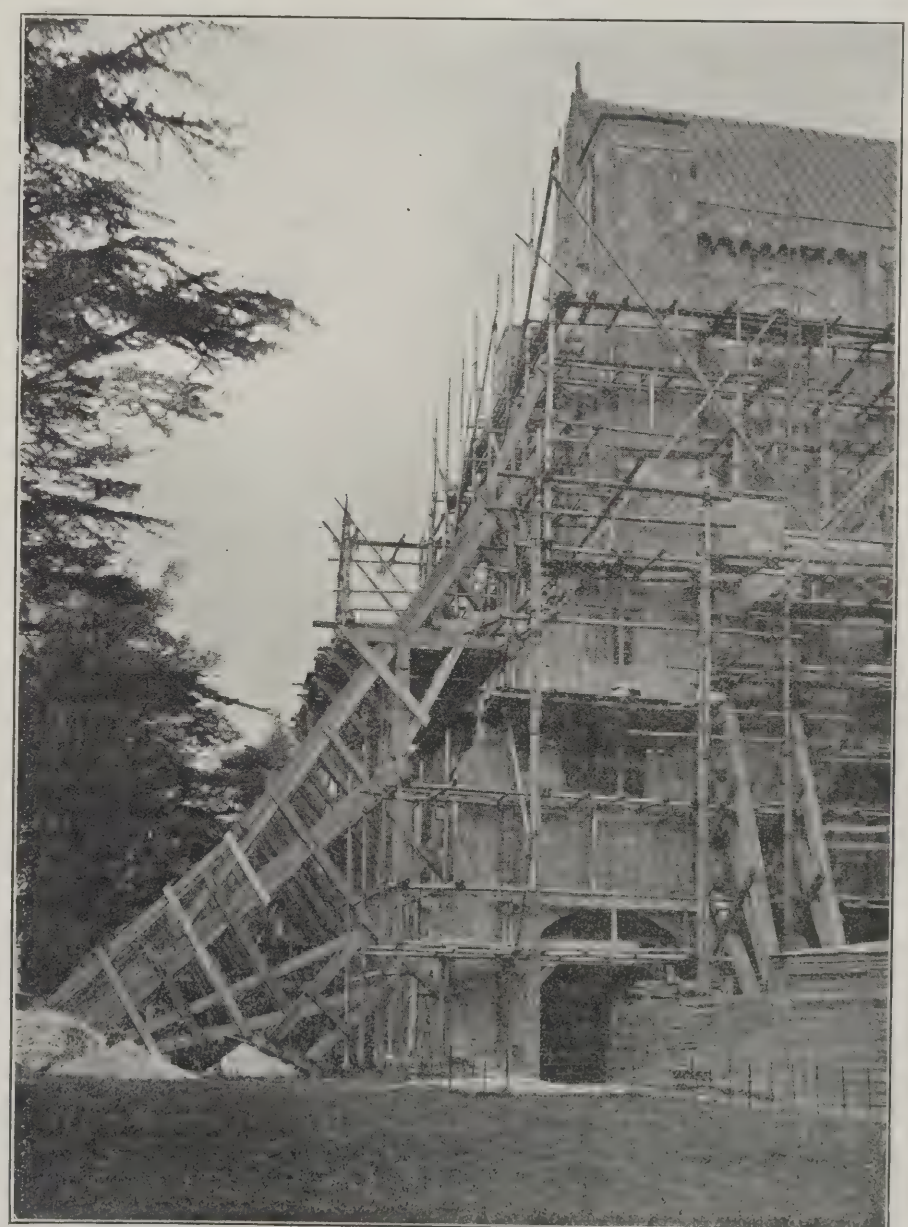
The Central Tower.

The Central Tower fell in 1107, ten years after the dedication of the transept. It seems to have been promptly rebuilt, for it is all in the style of the later Norman architecture. This time the builders determined to have sufficient support for the superstructure; the four piers on which the tower rests are of enormous dimensions—larger than any others in the kingdom, though the weight they have to carry is insignificant in comparison with that of the central towers of many other English cathedrals.

De Lucy's Extension.

In 1202, Bishop de Lucy began an extension of the building eastwards. His addition consists of a three-aisled structure, three bays long, which took the place of the Norman Lady Chapel. The work is in a vigorous Early Pointed style, innocent as yet of mullions and tracery, and there is no more charming example of this kind of work in the kingdom. The final extension of the building consisted in the lengthening of the Lady Chapel by a bay projecting beyond the end of De Lucy's work. This was done by the two last priors, Hunton and Silkstede, between 1470 and 1524; and with the remodelling of the choir clerestory, and the rebuilding of the choir aisles by Bishop Fox and Prior Silkstede between 1500 and 1528, the fabric was brought into its present position. The successive building operations therefore extended over four centuries and a half—from 1079 to 1528.

Mr. Jackson then explained the various causes which from time to time have given trouble to those in charge of this



SHORING TO SOUTH TRANSEPT OF WINCHESTER CATHEDRAL.

fabric, and which finally brought matters to such a pass that the extensive repairs now in progress became imperatively necessary. The bare site was a marshy bottom lying between chalk hills, through which wound the little river Itchen. Over a gravel deposit of considerable but unknown thickness, below which is probably chalk, was formed a bed of peat, varying from 3 or 4 to 7ft. in depth, on the top of which, and sometimes also below, is a deposit of chalky silt, washed down from the surrounding hills. Whether the fall of the central tower in 1107 was due to bad foundations, or to defects in construction, we cannot tell; but there is no doubt that settlements began to show themselves at an early period. It is evident that the farther the building advanced eastwards in the direction of the river towards which the strata of the soil inclined, the worse would be the foundation. It was not, therefore, surprising that, in the course of centuries, the condition of De Lucy's work, which was pushed out beyond the apse of the Norman choir, had become such as to create serious alarm, and it was to this part of the church that Mr. Jackson's attention was first directed when he was consulted by the Dean and Chapter in the spring of 1905. The state of things revealed by careful examination was this: At the point where De Lucy's building of the thirteenth century joined the cross wall still existing in the crypt which marked the end of Walkelyn's choir, a rupture had taken place. The whole of De Lucy's building had slid eastward about 5 inches, if not more, and had also sunk into the soft ground, though not equably; for the ground being softer the farther you go eastwards, the eastern part sank more than the western, so that the courses of the wall described a curved line, lower at the eastern end than at the western by more than 2ft.

The Cause of the Mischief.

This movement naturally caused serious dislocations of the vaulting. The walls, especially on the south side, had bulged outwards, the inclination from the perpendicular being in one part as much as 2ft. in 44, and in another place an inch in a foot. The vault thus disturbed brought an unfair pressure on the buttresses against which the vaulting ribs converge; and the effect has been to tear them away from the curtain walls by a fissure through the next window on each side, and to thrust them outwards. The vault thus released by the spreading of the side walls, sank, the ribs lost in many cases their arch construction, taking a convex line where it should have been concave; the panels cracked and bulged, and the whole would have fallen had it not been bolted up with iron straps to timbering in the space under the roof. This awkward contrivance seemed unlikely to serve any longer, for on February 21st, 1906, a stone fell from the groining of the north aisle near Bishop Waynefete's chantry, and more would have followed had it not been promptly wedged up. Exploratory excavation showed that this part of the building (the presbytery) rested on a raft of trees placed horizontally in two layers, sometimes, though not always, placed crosswise. What had happened now became clear. Water stood in subsoil about 10ft. below the level of the surface. De Lucy's architect dug down to that level, and was then at a loss how to proceed, the engineering appliances of those days not enabling him to cope with the water difficulty. He therefore formed a raft of beech trees on which he raised his footings. Under this the soft ground has yielded, the wall sank, the vaults overpowered them and thrust them out, and the whole of the new work parted from the old building west of it. There were therefore two causes of the mischief which had to be encountered—the thrust of the vaults, and the defective foundation. As regards the latter, there was nothing for it but to underpin the walls, carrying them down to the splendid gravel bed below the peat.

The Means of Preservation.

The south wall was shored, and the vaulting inside centred, and a beginning was made at the south-east corner with a drift 4ft. wide running in diagonally under the wall. The water caused the greatest difficulty. While it remained clear, it could be safely removed with a centrifugal pump, but as soon as there seemed to be danger of its drawing silt, other means became necessary. Mr. Francis Fox, the civil engineer, called into consultation at this point, recommended the employment of a diver, and thus pumping was dispensed with.

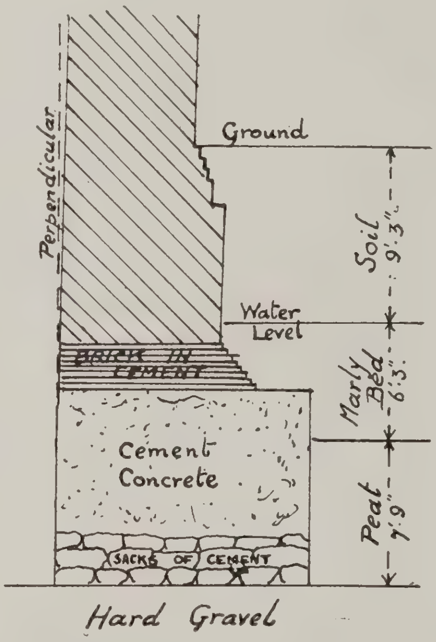


DIAGRAM SHOWING UNDERPINNING OF WINCHESTER CATHEDRAL.

The underpinning is done in sections of about 4ft. 6ins. wide, driven inwards under the walls. Several of these drifts were in progress at once in different parts of the building, and each of them occupied about a month, and was allowed a fortnight more at least to consolidate before an adjoining one was begun. The ground was opened by the builder and dug out down to the peat, and partly through it, leaving a thickness of about 18ins. The peat, being impervious, seals down the water with which the gravel is charged, and such water as comes in from above can be pumped out without danger. Then the diver goes down and removes the remainder of the peat. As soon as this is pierced, the water rushes up from below and rises in the hole, like spirit in a thermometer, to the height of perhaps 10ft. When the diver has cleared away the peat and exposed the gravel over the area of the drift, a matter of some time (for many of these tunnels under the walls are 12, or 14, or even 19, and in one part 24ft. long), sacks of cement concrete are lowered to him, which he lays regularly in courses like brickwork, bonding over one another, to the height of about 3ft., cutting open each sack after laying it. The foundation sets as hard as a rock in a few hours, and seals the water down again. The hole is then pumped dry, when the surface of the concrete is exposed, looking like a flat table of stone. On this the ordinary workmen build. "At first," says Mr. Jackson, "we used loose concrete, but afterwards I had blocks of concrete cast 12ins. by 9ins., and 2ft. long, which I think made better work. Finally, when within 3ft. or so of the bottom of the old foundations, which may be seen like a rock overhead, we finish with brickwork in cement, beginning at the back of the tunnel or drift and pinning up firmly to the old work as we come forward."

Heroic Grouting.

The work in the superstructure consisted in bonding across the cracks with long pieces of hard York or Purbeck stone, and grouting them full with thin Portland cement. For the latter purpose was used the Greathead grouting machine, which, by means of compressed air, forces the grout, with a degree of violence which can be accurately controlled, into every chink and cranny of the masonry. Mr. Jackson first heard of this machine from Mr. Fox, and saw it in use in the construction of a tube railway in London, where it was employed to force a lining of cement round the outside of the iron tube. He went to see this merely out of curiosity, but it then occurred to him that it would do admirably to consolidate shaky church walls, and he used it first at the little Saxon church of Corhampton, Hants. "Into the walls of this little church, which is not much bigger than an ordinary drawing-room, we managed to inject, if I remember, no less than 19 tons of liquid cement. It travelled in the hollow walls in all directions, sometimes pouring out 10 or 12 feet away from the place where it entered. Men were placed to stop these leaks with clay, and so to confine the grout to the inside of the wall; and I think we succeeded in converting the old Saxon walls into a monolith without disturbing a single stone. At Winchester we have two of these engines in use, and have found them of the greatest service."

The whole of the Lady Chapel and De Lucy's building have had the outer walls underpinned. The principle followed was to make them safe by arresting the tendency not only to sink, but to slide eastwards.

The Condition of the Northern Transepts.

But, bad as was the condition of the Early English building, that of the great Norman transepts was even more serious, on account of their magnitude. It is possible that they may have been shattered to some extent by the fall of the tower in 1107. There is, at all events, a great contrast between the state of the four tower piers with the four next them, which were rebuilt after the fall, and that of the rest. The side walls were cracked and burst in all directions, and in many cases daylight could be seen through the fissures. The foundations, however, were mainly in fault; for though they are deeper than those of De Lucy's building, the water level being probably lower there than in the thirteenth century, they fail to reach the gravel, and the Norman builders were brought to a stand before they touched a good bottom. They seem to have scooped out the marly bed, and so much of the peat as they could reach, in some cases down to within a foot of the gravel itself, and into this excavation to have pitched loose chalk and flints till they were able to build in the dry. These imperfect foundations have given way in every part: the aisles of the transepts have bulged outwards, disturbing the rude Norman groining inside, and the great gables have parted from the side walls with cracks through which one could see daylight, and incline fearfully outwards, the south gable overhanging its foot about 4ft. 6ins., which nearly brings the centre of gravity outside the base.

Shoring and Underpinning.

The remedy adopted is to underpin the ends and the greater part of the side walls, and to chain the heavy gables back to the side walls by an elaborate system of rods and girders at three levels. The task of underpinning these vast gable walls, 120ft. high, composed of masonry so badly shaken and ruptured, is one not to be approached without apprehension. Both transepts have been well grouted with cement and bonded with long hard stones, and, as an instance of the amount of disruption in the walls, Mr. Jackson mentioned that no less than twenty-five tons of cement were injected into one corner alone of the north transept aisle. The underpinning and repair of this transept are now practically complete; that of the south transept constitutes the most difficult and anxious part of the task.

Much Done and More to do.

Both transepts were of course secured by massive shoring during these operations. On the south side, of which a photographic illustration is given (p. 509), it was not very easy to support the wall effectively, on account of the cathedral library, which is over the slype, and rests against the gable wall.

This is not a full tale of the work that has been done, and is still to be done, at the cathedral, whose misfortunes, as Mr. Jackson says, "began at its birth." "Built on a wet compressible soil, it probably began to settle as soon as it was finished, and it has been gradually getting worse ever since. Not a single part of it has escaped." The work that has been done, however, seems, so far, to have been eminently successful; and it is unthinkable that it will be brought to a standstill for want of the necessary funds. Messrs. Thompson, of Peterborough, are the contractors.

CONSTRUCTING A BAKER'S BRICK OVEN.

BY ALBERT E. BULLOCK, A.R.I.B.A.

It not infrequently falls to the lot of an architect to construct a baker's brick oven to a private residence, and the accompanying illustration shows one that has been recently made.

The old-fashioned ovens had no flue, and were heated by means of wood, or a log, burnt in the oven itself, and withdrawn when the heat had arrived at the right temperature. This is not a clean arrangement for modern use, owing to there being no provision for the escape of the smoke.

The modern bakers' ovens are mainly of two types—(1) those heated by direct contact with the flame; (2) those heated by pipes connected with the furnace.

Where the oven is of considerable length—say, from 14ft. to 20ft.—and perhaps in two tiers, the latter method is adopted. The pipes are placed close together longitudinally in the floor of the top oven, and heated at the back by a coke fire.

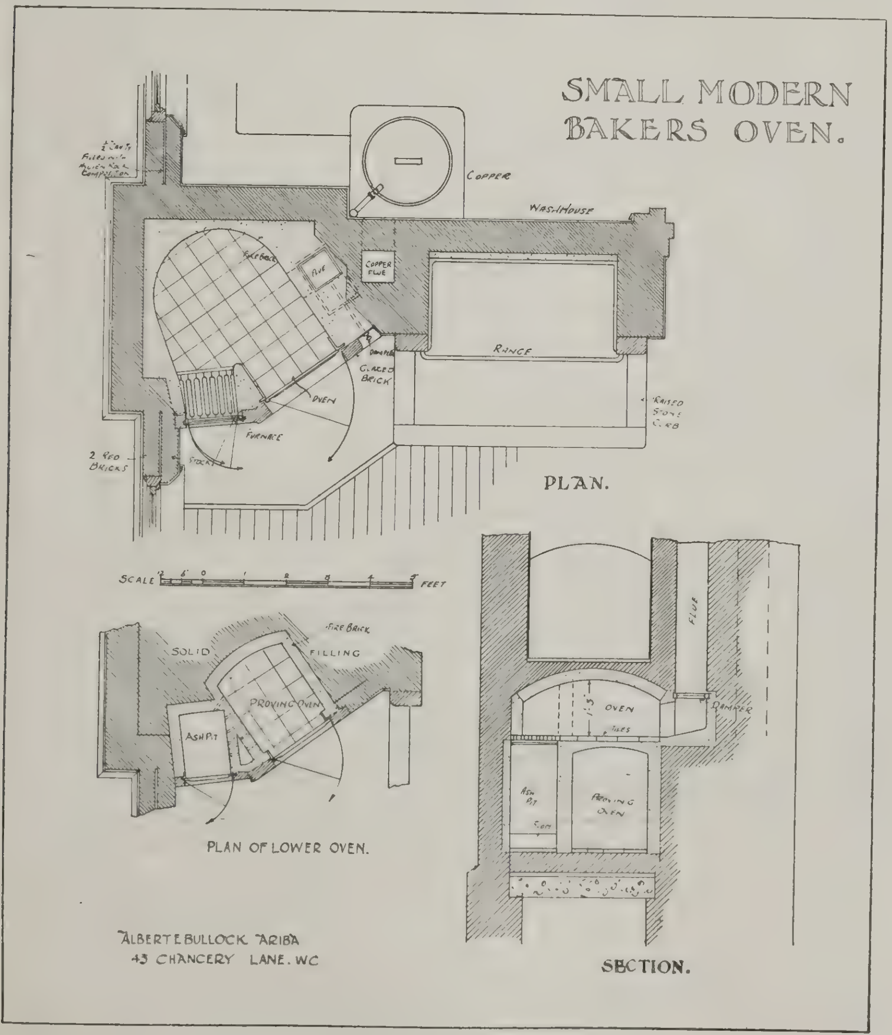
In smaller ovens the flue is placed on the opposite side of the oven to the fire, in order that the heat may be drawn across the dome or vault, and so heat the whole area to an equal temperature. The height from the tiles to the crown of the vault in the clear rarely exceeds 15ins., and the width and length can be any size requisite. It is, however, advisable that it should not be less than 4ft. square, exclusive of the furnace.

The furnace should be so planned that its axis makes an acute angle with the opposite wall of the oven containing the flue opening, and all angles at the back should be rounded off to facilitate cleaning. An ash pit is placed beneath the furnace, and the proving oven is divided therefrom by a thin wall about 4½in. thick, with open joints. The object of the proving oven is for cooking certain buns and cakes that require a slow heat previous to browning by the subsequent more rapid heat of the oven above.

The inner lining, and the division walls, and vault, are constructed of firebrick cemented by fire-clay cement. The method of forming the vault is by wood centering, which is burnt out after setting is completed. The tiles for the oven are laid in sand, and can therefore be easily replaced if broken or cracked by heat. The cast-iron fittings can be purchased from most range founders, those for the oven illustrated being obtained from the Carron Company, costing just over £5, and including the bars for the furnace, double doors for the fire, doors to oven, ash pit, and proving oven, a damper for the flue, and a back plate.

The face work can be of glazed brick or stone, or cement work on stocks, while the top is usually cemented over flat just above the crown of the vault. The writer recently saw a baking oven arranged in conjunction with the kitchener by building out the back for the oven and diverting the flue. This could only be done where a boot boiler is not required.

There are, of course, portable baking ovens lined within in firebrick, and with iron plate sides, but their life is considerably shorter than that of the brick-built ovens, and the former are not so suitable for general baking, while their size is limited.

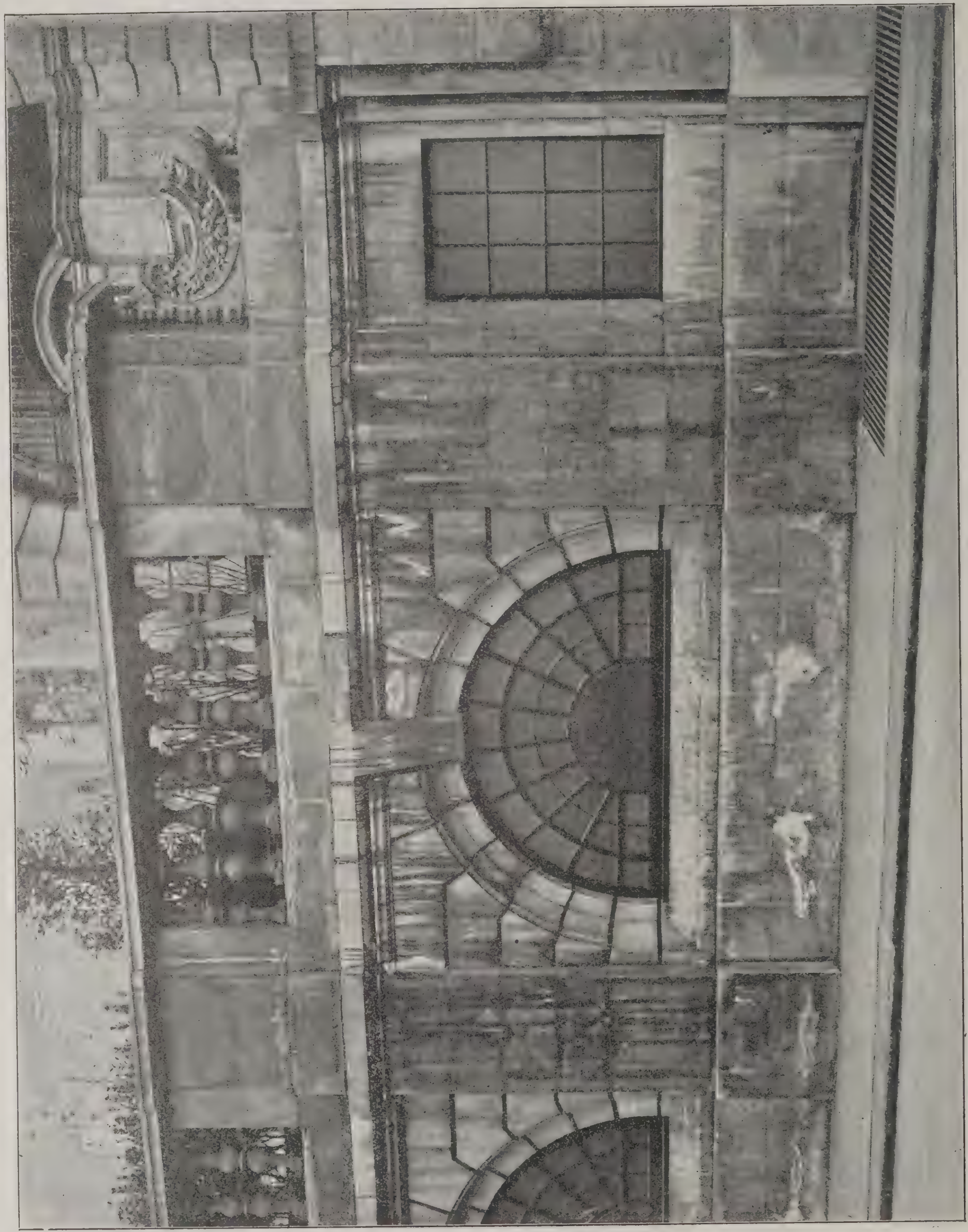


LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At a general meeting of the Leeds and Yorkshire Architectural Society—the President, Mr. Sydney D. Kitson, F.R.I.B.A., presiding—the students' drawings, done in competition for the various prizes offered annually by the society, were exhibited, and the awards announced. Although the competition has not been particularly keen, meritorious work has been done, and a good standard of excellence attained.

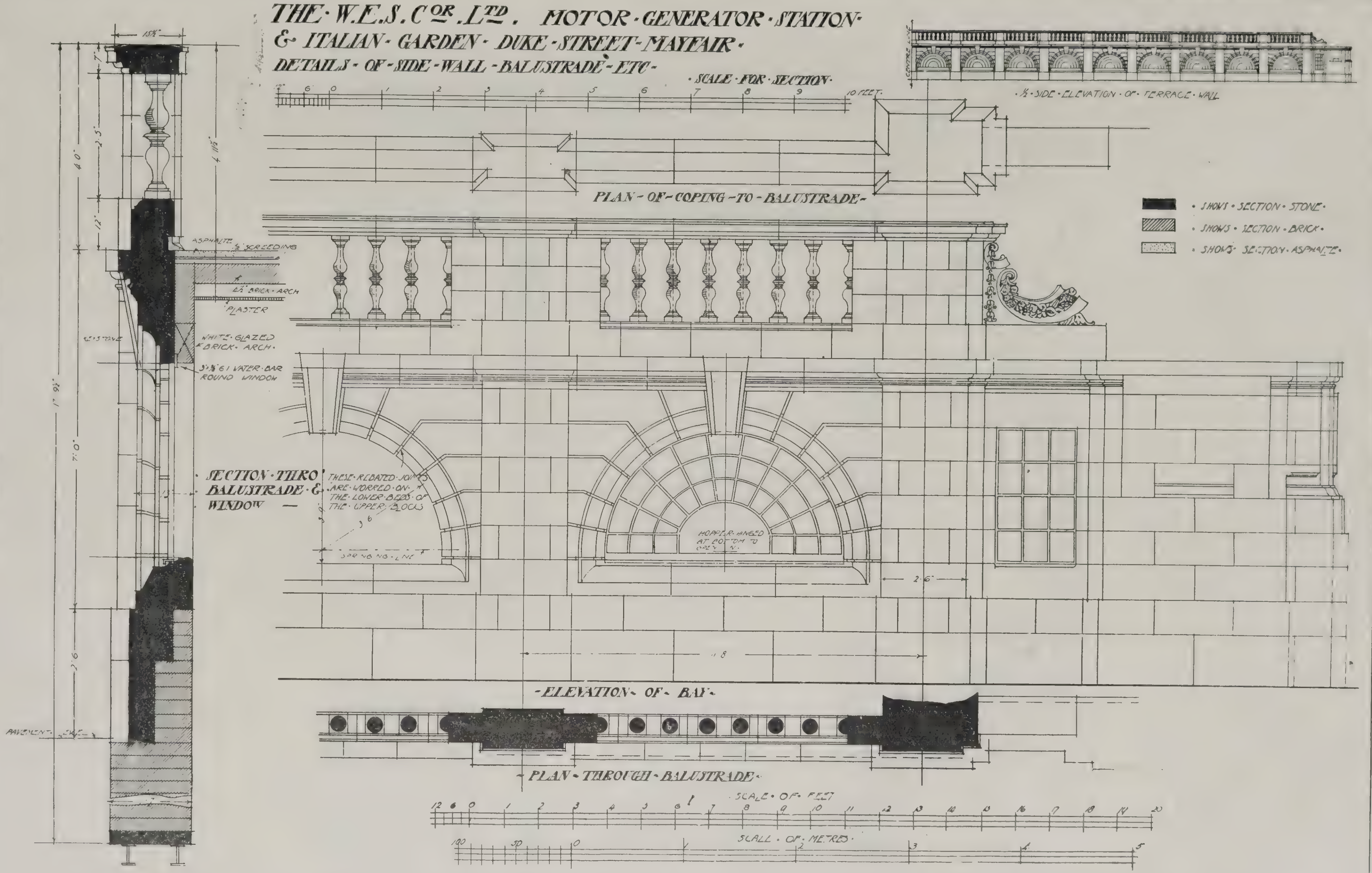
The President's prize, along with the Society's silver medal, for the best measured drawings, goes to Mr. J. H. Farrar (Leeds), whose subject is Holy Trinity Church, Boar Lane, Leeds; and Mr. P. H. Audsley (Dewsbury) receives the consolation prize. Mr. F. L. Kruckenberg (Ilkley) wins the first prize for design, the second being awarded to Mr. W. Voelkel (Castleford). The sketching prize is taken by Mr. E. H. Gibson (Harrogate), and the construction prize for the best design of a clock tower constructed in timber is won by Mr. P. H. Audsley (Dewsbury).

The Sketching Club awards are—For the best set of sketches, Mr. J. H. Farrar; for the best set of studies of ancient buildings, Mr. J. T. Pilling (Leeds).



DETAIL OF WALL AND BALUSTRADE TO MOTOR-GENERATOR STATION, DUKE STREET, MAYFAIR, LONDON

C. STANLEY PEACH, F.R.I.B.A., ARCHITECT.



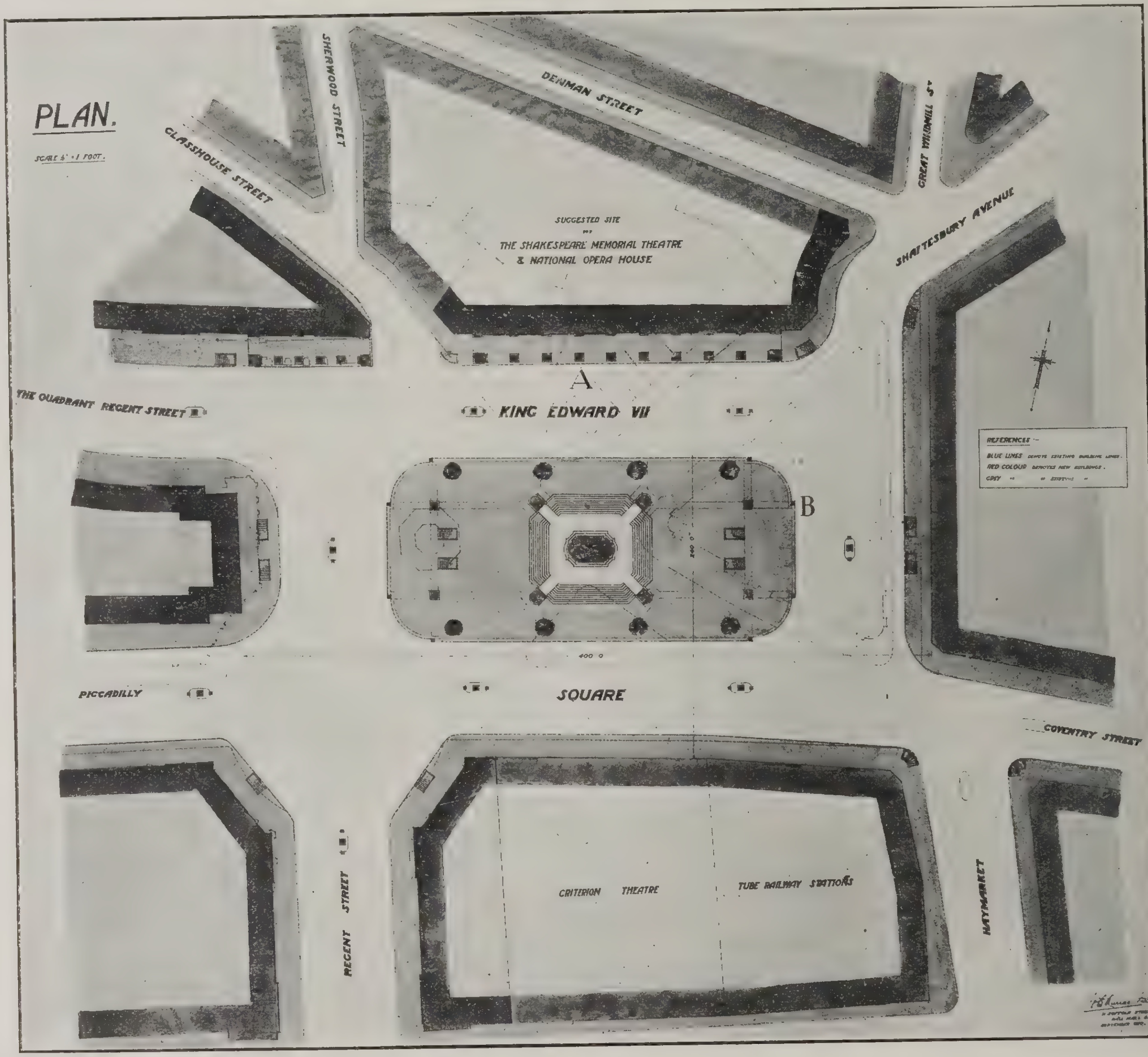
THE · W.E.S. C^OR. L^TD. MOTOR · GENERATOR · STATION · & ITALIAN · GARDEN · DUKE · STREET · MAYFAIR · DETAILS · OF · SIDE · WALL · BALUSTRADE · ETC ·

· SCALE · FOR · SECTION ·
12" 6 0 1 2 3 4 5 6 7 8 9 10 FEET ·
· ½ · SIDE · ELEVATION · OF · TERRACE · WALL
CENTRE LINE
PLAN · OF · COPING · TO · BALUSTRADE ·
· SHOWS · SECTION · STONE ·
· SHOWS · SECTION · BRICK ·
· SHOWS · SECTION · ASPHALTE ·
15¾"
7"
2' 5"
4' 0"
4' 11½"
12"
ASPHALTE ½" SCREEDING
4½" BRICK · ARCH
PLASTER
WHITE · GLAZED BRICK · ARCH ·
3" × ⅜" G I WATER · BAR ROUND WINDOW
17' 9½"
7' 0"
2' 6"
PAVEMENT
· SECTION · THRO' BALUSTRADE · & WINDOW —
THESE · REBATED · JOINTS ARE · WORKED · ON · THE · LOWER · BEDS · OF THE · UPPER · BLOCKS
3' 6"
SPRINGING · LINE
HOPPER · HINGED AT BOTTOM TO OPEN IN
2' 6"
11' 8"
· ELEVATION · OF · BAY ·
· PLAN · THROUGH · BALUSTRADE ·
· SCALE · OF · FEET
12 6 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
SCALE · OF · METRES ·
100 50 0 1 2 3 4 5

The site was formerly covered with buildings, and when it was cleared the ground landlord (the Duke of Westminster) stipulated that a public garden should be devised. This result has been achieved by sinking the station and carrying up the walls for about 9 ft. above street-level, thus making provision for the lighting of the station through semicircular clerestory windows; the whole space being roofed over and treated as an Italian garden. The wall and balustrade are in Portland stone.

THE REMODELLING OF PICCADILLY CIRCUS.

We publish in this issue the scheme for the remodelling of Piccadilly Circus which has been prepared by Mr. John Murray, F.R.I.B.A., as a memorial to King Edward the Seventh. There does not appear to be any immediate prospect of its being given effect in entirety, but certain portions will certainly be carried out in the near future. The extensive blocks of Crown buildings which stand at the six corners of Lower Regent Street, Piccadilly, Regent Street Quadrant, and Glasshouse Street are about to be rebuilt, and the new building frontages, which are now approved and the details practically settled, will be set back, the old building lines being improved and the streets considerably widened. Thus to complete the large open space of 400 feet by 240 feet only the two blocks of buildings on the north and east sides, marked respectively A and B on the plan, which are not Crown property, would remain to be dealt with.



The existing building frontages are shown by dotted lines.

SCHEME FOR THE REMODELLING OF PICCADILLY CIRCUS BY JOHN MURRAY, F.R.I.B.A.

Under Mr. Murray's scheme the projecting front of the Café Monico and adjoining buildings (A) would be cut off and the east end of this block of buildings extended as shown on the plan; while the London Pavilion triangular block of buildings (B) would be removed. The Shaftesbury Memorial Fountain, it is suggested, should be removed and re-erected in one of the parks, where the water could be turned fully on and where it would fulfil its original intention of a fountain.

The line perspective shows a general view of the square looking north-west, and includes Mr. Murray's suggested design for the re-fronting of the Café Monico block suitable for shops and business premises, should the site continue to be used for this purpose in the future; while the perspective view, in tone, reproduced as the centre plate in this issue, shows Mr. Murray's design as approved for the west side of the square and includes Mr. Norman Shaw's, as approved, for Regent Street Quadrant.

The authorities concerned with any scheme affecting this portion of London are the Crown, the London County Council, and the Westminster City Council. We understand that there have been some conferences with regard to the matter, and that when the lease of the corner occupied by Messrs. Swan and Edgar falls in—in about ten years' time—the new building will be as designed by Mr. Murray. For the north side Mr. Norman Shaw is already engaged on a new building for the County Fire Office.

Piccadilly Circus, as it exists, is discreditable to London, being a shapeless area surrounded by buildings devoid of civic character. If Mr. Murray's scheme could be carried out a vast improvement would be effected and we should have a memorial to King Edward in a form far more satisfactory than any monument of the customary type, serving no practical purpose, and being of interest mainly to sightseers in the metropolis.

Mr. J. M. M. Munro, F.R.S.E., consulting engineer, 108, Douglas Street, Blythswood Square, Glasgow, announces that, having severed his connection with Messrs. Anderson and Munro, he will now devote himself entirely to consulting work.

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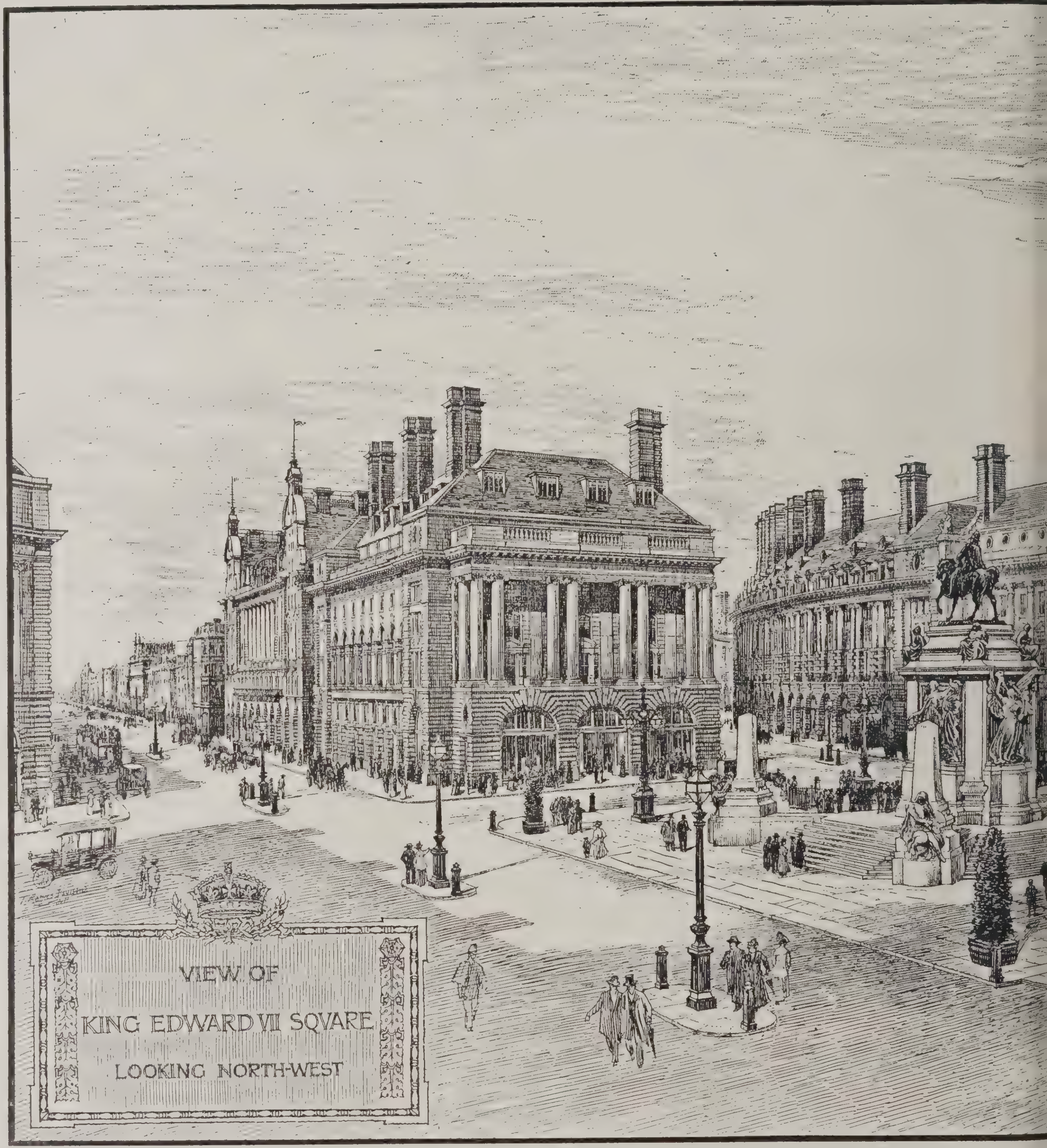
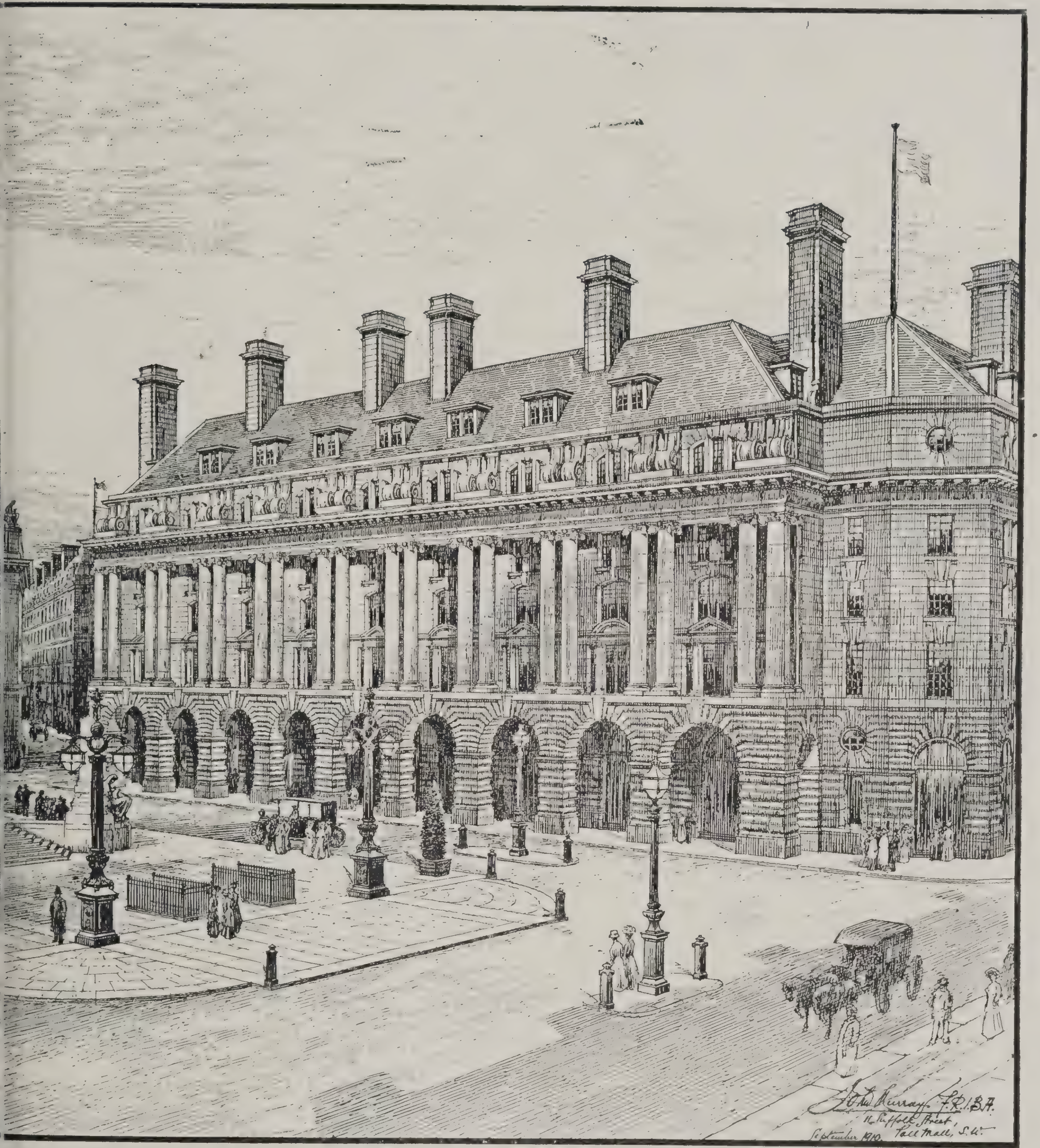


SCHEME FOR THE REMODELLING OF PICCADILLY CIRCUS AS A M


John Murray, F.R.I.B.A.
11, Suffolk Street,
Pall Mall, S.W.
September 1910.

TO KING EDWARD THE SEVENTH. BY JOHN MURRAY, F.R.I.B.A.

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THAT FINE DRAUGHTSMANSHIP CONDUCES TO FINE ARCHITECTURE.

BY GERALD C. HORSLEY, F.R.I.B.A.

In this paper, which was read by Mr. Gerald C. Horsley, F.R.I.B.A., before the Architectural Association on November 14, the author defends fine draughtsmanship as a means of regarding all visible objects with a higher and more just appreciation of their qualities, and therefore as an important aid to excellence in architecture.

"IT is foolish and insolent to imagine that the art which we ourselves practise is greater than any other, but it is wise to take care that in our hands it is as noble as we can make it."

Noble Means to a Noble End.

I quote these lines from the "Stones of Venice," as they express something of the feeling I possess concerning the relation of fine draughtsmanship to fine architecture. That is to say, that as my business, as it is your business, is with the art of architecture, and, in Ruskin's words, "it is wise to take care that in our hands it is as noble as we can make it," we must agree that everything which contributes to the making of architecture should be of the very best. We must, I think, admit that drawing plays a large part nowadays in the producing of architecture, and that it is essential, if the architecture is to be good, that the drawing should be good also.

In short, if our architecture is to be noble, the means employed must be noble also, and one of the means undoubtedly is draughtsmanship.

We have, then, to regard draughtsmanship as a means to a noble end. Draughtsmanship will not by itself produce fine architecture, but if rightly applied it will contribute to its production. If architecture is the "Mistress Art"—and I am far from denying it—then "fine draughtsmanship" is one of her handmaidens, one of many who combine in duties which make possible the perfection of the Mistress Art herself.

The importance, indeed, of draughtsmanship may be realised when we remember that we are obliged nowadays in the practice of our art to make a very much larger number of drawings than was expected of the architect in past ages.

The Architect as Master Builder.

I can conceive it possible that someone here to-night will condemn this undoubted fact as a tyranny which we have no right to accept, and that he may implore this Association to use its influence to turn architects from the drawing board, and to drive them—as a friend once put it—"to the scaffold." But with what object? We shall agree that the architect should spend the requisite time in acquiring a working knowledge of the handicrafts in building. As a student he cannot for this purpose do better than spend some part of his time in a builder's yard, or as a clerk of works on a "job," but it is not necessary for him to spend his time when in practice in usurping the proper functions of the bricklayer, or the mason, or the builder's clerk in buying cement in the cheapest market. His real business is to be the master builder, and his chief office in that high calling is to be a man of ideas. As Mr. John Belcher has pointed out, we can liken the functions of an architect to those exercised by the composer of music for the orchestra; the composer who combines and weaves into his composition the sound of many instruments, a man who in order to bring about the best result in his work has taken pains to become acquainted with the capabilities and the working of each instrument of the orchestra.

If, then, the architect is the master builder, the man of ideas, those ideas must be worked into terms of building, not on the scaffold, but at the drawing board. This implies that close apprenticeship to board and T-square which we all know, and to which we are faithful all our lives.

A Necessity of our Time.

Draughtsmanship, therefore, rightly used, is a necessity of our time, and in the best interests of our art it should be as good as we can make it.

There are two reasons which especially warrant me in making this statement. The first, and the most important, is that skill in drawing, once it is really attained, becomes a living mental force to the artist, an added force to his mental equipment. You will perhaps realise how true this is when I say that a man who is a fine draughtsman will regard all objects within his view with a higher and a more just appreciation of their qualities than a man who is an indifferent draughtsman. The importance of any added mental force to the architect must be great when we remember that the processes of designing are mental, that the architect creates his design out of his knowledge and imaginings. He sees the plan of the house or the church, the scheme and "lay out" for the public building, spread out before him in his mind, each part thought out and mentally corrected before ever it is laid out in material form on paper.

If, in following out the latter process, he draws out the design crudely, clumsily, hardly, and unsympathetically, the spirit will have fled from the thought; the bones and body of the scheme may certainly be there, but the soul will not, and to the spectator the project will be unattractive.

Hand and Brain in Sympathy.

If, on the other hand, the architect had fulfilled his chief function of being a man of ideas, and has incorporated into his scheme just that touch of genius which may make him worthy of the title of architect, then if in drawing out his scheme the hand follows the brain in the transmission of the design to paper, and if the two work in sympathy, each touch of the pencil expressing as it were the very thought of the brain, then will the spectator rightly understand the end and aim of the artist.

Excellence in drawing, therefore, has an educative influence upon us, which, in our desire to train ourselves as capable artists, we cannot afford to neglect.

The Best Architects the Best Draughtsmen.

My second reason for the statement I have made can be more briefly put before you. It is nothing more nor less than that history and past experience show that the best architects have generally been admirable and first-rate draughtsmen. This is a statement which can be amply substantiated; a consideration of these architects and their work in drawing will give the proof.

Thus, very inadequately I fear, I have put before you a general statement of the relation of fine draughtsmanship to fine architecture. In conclusion, I would like to refer to some of the technical qualities which the words "fine draughtsmanship" comprehend. I think we should give the words a wide interpretation. It is of the essence of good draughtsmanship to express character, and character in a drawing will out in different ways. We cannot drive draughtsmanship into too narrow a road, and say, "This is draughtsmanship and no other." Yet a high standard we must have. Among others, we must apply the following tests:—(1) Is real skill shown in the drawing? (2) Is there beauty in the line? (3) Is the character of the building or the design clearly and ably expressed? If we have passed through some of the severities of the mill ourselves, we should be able to answer these questions.

The Nervous Line.

Permit me to quote once more Mr. Ruskin to you in this connection. I make no apology, because, besides being an interesting draughtsman himself, he made a study of the whole question. He said, speaking of an artist, "it is in the perfection and precision of the instantaneous line that the claim to immortality is laid." The "perfection and precision of the instantaneous line"—does not that mean the sure and certain touch, the nervous line pregnant with character and restrained force? Again he says on the subject of the line—the work of the hand impelled by the brain—"the first merit of manipulation is that delicate and ceaseless expression of refined truth which is carried out to the last touch and shadow of a touch, and which makes every hair's breadth of importance and every gradation full of meaning. It is not, properly speaking, execution, but it is the only source of difference between the execution of a commonplace and that of a perfect artist."

This question of manipulation is thus of the utmost importance, and rests at the root of the matter. Our small-scale and detail drawings, to be alive with meaning and intention, must be perfectly expressed by the "perfection and precision of the instantaneous line," clean, firm, and sharp. Our full-size details must be drawn with even greater subtlety of expression than the small-scale drawings, the greatest care being necessary to express the spirit of the design in the contour of the mouldings. Let us remember that our working drawings are not only items of direction to the workmen under us; they are more than that; they should convey to their minds the very spirit and heart of our design. In the same way the sketches we make for our clients, to show the grouping of our designs, should not be mere diagrams; they should be drawn with intelligence and care, to create an interest in our purpose and an understanding of our aim.

In a masterly manipulation or execution we shall find truth, simplicity, and the mystery of inspiration. These qualities must all be present together in our completed drawings, particularly in our measured drawings and sketches, and in the drawings we should all make from the life.

Drawing from the Life.

Experience proves that if we do not measure and do not sketch, we bid fair to be very poor architects. In this Association, with its splendid tradition and practice in sketching and measuring, it is not necessary to dilate upon the importance of either. We all know that the best way to study a building is to draw it, and that not till then shall we discover matters of detail which otherwise we should not have seen. As to the necessity for an architect to draw from the life, let me tell you what Sir William Richmond has said on this matter: "The artist who can delineate the beauty of the human form, who is scientifically conversant with its structure as a machine, is possessed of a power limitless as art itself. He can design a picture, make a statue, or build a cathedral. This is a startling assertion, but it has been proved over and over again to be a true one. The artist who is not possessed of this power is minus, I was going to say, everything."

We must at least agree with Sir William that the power of design in many an artist has been fostered, or created, if you will, by study in the life class. In no other school is it possible to learn more valuable lessons in the principles of proportion, or in developing the knowledge and appreciation of the close kinship which exists between the art of the architect and the art of the sculptor. The relationship between the qualities of fine sculpture and those of fine architecture is a subject apart, but so far as the study of this subject tends to the production of fine architecture, drawing from the life will worthily assist towards comprehending it.

The Reactionary School.

A few years ago, in trying no doubt to carry out some recommendations given in the first syllabus of the Board of Architectural Education, an attempt was made in some of our schools to decry the claims of fine draughtsmanship. Drawings, we were told at that time, were to be regarded almost wholly as diagrams, and by no means as instruments of pleasure, radiant with the beauty of draughtsmanship in its expression of the spirit of the design. Fortunately it was a movement which has not spread very far, but so far as it has gone I consider it mistaken, and that it has done harm, for it has led a proportion of our students to adopt a style of draughtsmanship which is hurried, scrappy, and unfinished, and consequently without either character or charm. The situation which was thus created is really an impossible one, and we are curiously reminded of the result of some old Puritan fulmination against any joy in work or life. It is wholly at variance with the teaching of the best artists of all time, who have one and all been at least consistent in insisting that an artist should take pleasure in his work, producing it "under the instinct and passion of an inner commanding spirit."

French Example.

We may be grateful to our French friends for some change of view in this matter, for since the exhibition in London of the splendid drawings of Selinante by Mons. Hulot we have heard less of this unfortunate attitude towards fine draughtsmanship, an attitude probably born of an unnecessary fear lest the student should give too much attention to the technique of his drawing, and neglect more important qualities in his design. If we carry out conscientiously the true association of brain and hand, we shall avoid, I think, the danger of allowing our facility in drawing—if we are so fortunate as to have any —to run away with us. Every accomplishment has its accompanying dangers and temptations, and to counteract these we must bring into play such sanity as we possess throughout the whole of our careers.

[The subject chosen by Mr. Horsley is no doubt strongly controversial as regards at least some of its points, and we hope to be able to report a more than usually animated discussion.—Ed.]

PICTURE EXHIBITIONS.

Society of Painters in Water Colours.

As is often the case, the winter exhibition of the society is strongest in landscape, the branch of art for which watercolour is so peculiarly suited. Mr. E. R. Hughes, the finest figure-painter the society possesses, only sends some studies of heads; Miss Fortescue-Brickdale does not exhibit; and Mr. Anning Bell's large drawings, important in subject, are more successful as pieces of effect than as figure designs; the subject from the "Midsummer Night's Dream"—the mermaid and the "fair vestal throned in the west," has a wonderful effect of atmosphere, and "The Divers" is a grand piece of rich colour, but in neither case are the figures adequate to the subject; still less so in the scene from "The Tempest." Mr. Crockett plays variations, so to speak, on one very pretty figure who is evidently the model for all his contributions, but he has never equalled his first picture of two or three years ago. Mrs. Laura Knight's large study of a girl in a sun-hat is very clever, but rather a sketch than a picture.

The finest work in the exhibition is undoubtedly Mr. Colin B. Phillip's view on the coast of Ayrshire, with Ailsa Crag in the distance; a solemn evening scene with a stretch of dull calm sea and a wet shore glowing with sunset reflections, which is a real piece of poetry in landscape painting. There is nothing else equal to this, but various ideals in landscape painting are finely represented; Mr. Eyre Walker's landscapes standing for realism without losing sentiment; Sir Ernest Waterlow's for composition without much sentiment ("A Suffolk Common" is in rather a broader style than usual with him); and Mr. North's for the school which treats landscape not so much as the representation of a scene as its impression on the mind of the artist. In the same category may come Mr. Albert Goodwin's views of cities, which represent the possible poetry of a city rather than the mere material facts.

We should have mentioned among figure pictures Mr. Cadogan Cowper's carefully finished small-scale repetition of his wall-painting in the House of Lords corridor, which has already been described in our columns. Architectural subjects are rather numerous in the exhibition; Mr. Rooke has a large and conscientiously treated view of the west front of Cremona Cathedral, and another of the interior of St. Bartholomew, Smithfield; and Mr. Reginald Barrett contributes some of his fine representations of Oriental and Venetian architectural detail; "The Bronze Candlestick, St. Mark's," is a remarkable piece of minute detail. There are many more good things than we have space to mention.

Russian Exhibition at the Dore Gallery.

We fear the large collection of Russian pictures at the Doré Gallery will not do much to convert people to Russian art. There is a great deal of strong, harsh, crude realism in the figure pictures; realism totally devoid of beauty or decorative effect, and what is in art something like what Maxim Gorky's novels are in literature. The object of many of these paintings seems to be not art, but the reading of a moral lesson, as in Verhotouroff's rather dramatic scene entitled "Lock-out," which is really a sort of advertisement of the Rights of Labour, effective as such; only that is hardly what painting is meant for. There are a few good landscapes, but nothing remarkable. Kravtchenko's picture of "The north-east tower, Pekin," is a good architectural painting. Makovsky seems to be their best man, and the series of photogravures from his works in the corridor show a great deal of cleverness in the depicting of character, and rather suggest the idea that Russian painting is seen at its best in black-and-white reproductions.

Messrs. Agnew's Gallery.

Messrs. Agnew's annual exhibition on behalf of the Artists' Benevolent Institutions is, as usual, a small but remarkable collection, this time chiefly portraits—Reynolds, Romney, Lawrence being represented; Romney quite at his best in the noble full-length of "Lady Rouse-Boughton"; but one of the finest portraits, in colour and artistic character, is a half-length of a lady by Hoppner, a painter who sometimes surprises one by something quite above his usual level. "La Ronde Champêtre," which is called Lancret's masterpiece, is there, but only looks like Watteau without inspiration; the very curious Gothic church in the background is worth attention, if it really represents anything that the painter saw. Oddly enough, close to this is an early picture with figures and trees, by Turner, which is an obvious attempt of Turner's to imitate Watteau, as in another early work he attempted to imitate Titian. His large "Pas de Calais" is a fine painting of sea, but what boats! One wonders whether Turner ever really looked at a boat to see what it was like.

The Carfax Gallery.

We have so often had to feel dissatisfied with the Carfax Gallery collections of eccentricities that it is a satisfaction to mention an exhibition of admirable water-colours of architectural subjects by Mr. Maresco Pearce, views of old corners in Italian and French cities. They combine faithful impressions of architecture with a broad and free water-colour style, and establish their author's reputation as a new painter of architectural subjects.

Messrs. Maclean's Gallery.

At this gallery is a collection of pictures, some of them of considerable importance, representing scenes and figures in Indian life, by Mr. R. D. Mackenzie, a painter who has resided a good many years in India. His picture of the State entry into Delhi on the occasion of the Coronation of the late King is of interest as including probably the largest painting ever made of the Jumma Musjid, the domes and minarets of which form the background to the procession. There is also a good smaller painting of the Taj Mahal, rising white above dark masses of trees.

PLASTER WORK IN THE PICCADILLY ARCADE.

Messrs. Ben Henry Johnson and Sons, of Liverpool and London, write to us pointing out that they carried out the whole of the plain and decorative plasterwork in the Piccadilly Arcade, which was illustrated in a recent issue of "The Architects' and Builders' Journal," and that the modelling was done in their own workshops under the direction of the architect, Mr. G. Thrale Jell. The same firm are carrying out the plaster work for the new Liver Building in Liverpool, and they have recently secured the contract for the plain and decorative plaster work for the new Adelphi Hotel, for Mr. R. Frank Atkinson.

COMPETITIONS.

Kingstown (co. Dublin) Library.

In the announcement of the awards in this competition, the name of the author of the second premiated design should have been given as Mr. George Walker, A.R.I.B.A., 37, Moorfields, Liverpool.

Hackney Libraries.

The President of the R.I.B.A., at the request of the Hackney Libraries Committee, nominated six architects who were asked to advise and report on a scheme for three branch libraries; the sum available for the work being £15,850. Two architects declined the invitation, and of the other four three were selected by the committee, namely, Mr. E. Cooper, F.R.I.B.A., Gray's Inn Square; Mr. Alfred Cox, F.R.I.B.A., Adelphi; and Mr. H. T. Hare, F.R.I.B.A., Bloomsbury. The fee offered was fifteen guineas each.

LIST OF COMPETITIONS OPEN.

Nov. 29. Bangor (County Down). Sea-Water Baths.—Particulars in our issue for October 12.

Dec. 1. Manchester. Laying Out of the Blackley Estate.—Particulars in our issue for October 12.

Dec. 5. Rhosneigr, Anglesey.—Plans and specifications are invited for water and sewerage schemes for the village of Rhosneigr. Particulars from Owen J. Hughes, Clerk to the Valley R.D.C., Bryncuhelyn, Llanerchymedd, Anglesey.

Dec. 14. Douglas (Isle of Man).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

Dec. 31. Bournemouth. Rebuilding of Mr. J. E. Beale's Premises. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A., in our issue of November 2nd.

Feb 1, 1911. Dublin. New Pavilion, Royal Hospital for Incurables at Donnybrook.—Particulars in our issue for October 12.

March 15, 1911. Theatre at San Salvador.—Particulars in our issue for October 26.

No Date. Tredegar (Mon.). Model Village.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

COMING EVENTS.

Thursday, November 17.

University College, London.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: The Homes of Queen Elizabeth's Courtiers—Exteriors. 6 p.m.

Monday, November 21.

Liverpool Architectural Society.—Lionel B. Budden, M.A., on "The Work of Alexander Thompson." 6 p.m.

Tuesday, November 22.

Institute of Sanitary Engineers.—Nandy Hoskins, M.S.E., M.R.San.I., on Hydraulics and Hydrostatics. 7 p.m.

Thursday, November 24.

University College, London.—J. A. Gotch, F.R.I.B.A., on "English Domestic Work: The Homes of Queen Elizabeth's Courtiers—Interiors." 6 p.m.

Friday, November 25.

Glasgow Technical College Architectural Craftsmen's Society.—John R. Hacking on "Belgium." 8 p.m.

Monday, November 28.

Architectural Association.—Andrew Oliver, A.R.I.B.A., "Notes on Some French Churches." 7.30 p.m.

Monday, December 5.

Royal Institute of British Architects.—Reginald Blomfield, A.R.A., on "Pierre Lescot and Jean Goujon." 8 p.m.

Liverpool Architectural Society.—Albert H. Hodge on "Architectural Sculpture." 6 p.m.

CONGRESS OF BELGIAN BUILDING CONTRACTORS.

The second Congress of the National Federation of Building and Public Works Contractors of Belgium, which was held in Brussels in June last, has just issued its report. Eighteen Associations of contractors and merchants connected with building and public works were represented. Mr. Franz Van Ophene presided as President of the Belgian National Federation. The following subjects occupied the attention of the Congress:—

Collective Labour Contracts.

The general opinion of the meeting was that although a collective contract was in itself a desirable thing, it was impracticable, because it was impossible for the operatives to guarantee its fulfilment. The nearest thing attainable was a collective agreement, such as exists at Antwerp and Brussels, and similar to those usual in England. It was decided to recommend the Associations to initiate the formation of Boards of Conciliation composed of masters and men, with the view to preventing conflicts as far as possible.

Letting of Contracts.

Under this general heading the following subjects were considered:—(a) Plans and documents, which ought to be furnished complete to those who tender; (b) responsibility of those who furnish such documents for their accuracy; (c) that the date for beginning the works should be fixed at the same time that the contract is let; (d) how payments should be made; (e) the letting of contracts to selected lists of contractors.

As regards (a), the congress resolved that competitions which require the competitors to submit their own schemes, and so act the part of both engineers and contractors, should be done away with save in exceptional circumstances; that for competitions involving reinforced concrete construction, the project only should be subject to this form of competition, the actual tenders to be based on the details supplied with the project adopted. Item (b) was remitted for further consideration. As to (c) it appears that it is not customary for Administrations to fix the date for the commencement of the works at the time of the letting of the contract, and frequently long delays occur before the works proceed, to the great detriment of the successful contractor. The meeting resolved that the date for beginning should be fixed at latest at the time the contract is adjudged to the successful tenderer. As regards (d), it appears there is grave complaint of the unreasonable delays in obtaining payment for work completed in the case of works executed for communes, viz., parish or district councils, often no proper provision has been made for the requisite loans.

The meeting resolved that the administrations be requested to adopt a system of monthly payments on the basis of work completed and materials delivered.

(e) The Congress protested strongly against tenders for public works being restricted to selected lists of contractors, which it appears is too often the case, and resolved that this practice should be suppressed entirely.

Relations of Sole and Sub-contractors.

Complaint was made of the unfair treatment experienced by sub-contractors whose tenders having been used by a sole contractor as the basis of a successful tender, the sub-contractors were afterwards set aside in favour of some subsequent undercutting competitor. This is a complaint not unknown in England. The Congress resolved that the sole contractor who takes part in a competition should before sending in advise the sub-contractors, upon whose tenders he was basing his tender, that in the event of his offer being accepted, he would be prepared to accept such sub-contracts, subject always to confirmation by the Administration placing the contract. This appears to be a fair and reasonable conclusion, and if adopted in local associations of builders in this country would remove a well-grounded amount of irritation which is felt by sub-contractors who find themselves too frequently made a convenience of.

List of Schedule Prices by Associations.

Attention was called to the need there was for associations to establish lists of schedule prices similar to those which exist in France. These lists are intended to substitute those issued by certain administrations which are considered inadequate and not founded on practical experience.

Financial Guarantees Required Prior to Tendering.

It is customary to demand from competitors a guarantee of a monetary kind prior to being allowed to compete. The Congress resolved that such guarantees be done away with, but where this is not done that greater facilities should be afforded for making the necessary deposit, as at present it is necessary for the person making it to attend in person at the offices of the Administration, asking for the tenders, which is considered a hardship.

Repayment of Guarantees.

In all cases Administrations require a monetary deposit by way of guarantee for the execution of the contract. Difficulties are experienced in obtaining the release of this deposit when the works are complete, owing to the officials refusing to give a certificate of completion until the final accounts are rendered, adjusted, and accepted by both parties. Where disputes arise this delay is a powerful lever in forcing the contractor to yield on his contention. The resolution adopted suggested that the certificate of completion must be issued within 15 days of the date of completion, irrespective of whether the accounts are rendered, and that the guarantee deposit should thereupon be released and paid over to the contractor.

The Contractor to be Relieved of Responsibility for Architect's Errors.

This question was remitted for further consideration, the suggestion being that the contractor should be deemed simply the executive agent for carrying out the instructions of the architect, and that the latter should be responsible for his own errors.

A National Mutual Assurance for Compensation Risks.

This question led to a lengthy discussion, in the course of which it was stated that workmen in Belgium have to be compensated for accidents resulting from the work they do to the extent of 50 per cent. of the injury resulting. The rates per cent. of wages paid were stated to vary from 1.20 per cent. to 2.80 per cent. for bricklayers, 2.25 per cent. to 2.80 per cent. plasterers, 2.50 per cent. to 4.05 per cent. painters, 5.50 per cent. to 8.00 per cent. slaters, while general contractors on an all-round rate pay from 3.50 per cent. to 4.50 per cent. It will be noted that the rates appear high by comparison with those paid here. It was considered that there were great difficulties in the way of securing the requisite support for a national scheme, but that if it was possible at all it could only be on a mutual basis, and by localities, so that the cost of working could be kept low and voluntary effort be made use of in the management.

The question was remitted for further study.

Standard Specifications for Reinforced Concrete Construction.

The Congress desired to have adopted in Belgium standard specifications for this class of work, as has been done in France and Germany, and suggested that this was a matter in which the State might help by setting up such standards and requiring all administrations to adopt them.

Advance of General Expenses by Contractors.

It appears that contractors at the outset of a contract for public works have to pay in advance the honorariums and general expenses which have been incurred by the Administration in preparing the project. They object and say these should only be deducted at final settlement.

The question was remitted for further consideration.

Payment of Certificates.

It appears that contractors have so often to await the good pleasure of an Administration before they can obtain payments to which they are entitled that they are demanding that interest should be allowed at the commercial rate (apparently about 7½ to 8 per cent.) on such overdue sums, and a resolution to this effect was passed.

The question of builders' locked-up capital so recently dealt with in these columns, has become acute, it appears, in Belgium also.

Industrial Economy

A resolution was passed calling on the governing powers to inaugurate courses of instruction in industrial economy for workmen as being a step towards better relations between employers and workmen.

Negotiations are on foot for an *entente* between Belgian, German, and Dutch employers in case of lock-outs of this kind, but are not yet complete.

Admission of Foreign Contractors.

Complaint was made of the employment of foreign materials in public buildings in Belgium to the detriment of local products, and a long discussion ensued, resulting in the following resolution of the Congress:—"That the State, Provinces, and Communes give a preference to Belgian submissions over foreign submissions, when the difference between them does not exceed 4 per cent."

This concluded the labours of the Congress.

TRADE AND CRAFT.

Drainage Appliances.

Messrs. Burn Brothers, patentees and manufacturers of sanitary appliances, Rotunda Works, 3, Blackfriars Road, 6a, Stamford Street, London, S.E., and Edinburgh, forward their latest catalogue, in which are described and illustrated their improved cast iron gas-tight house-drainage fittings and sanitary appliances. Special accurate patterns have been prepared for the pipes and fittings, and the cores are specially treated with the object of securing a perfectly smooth inside surface. The inspection chambers are designed to afford the greatest facility of access for cleansing or inspection, and the various bends, etc., meet the requirements of almost any situation, although any special angle can be made to order. The pipes and fittings are made equal in strength to street mains; and as a precaution that has been found entirely effective against corrosion, they are coated, inside and out, at a high temperature, with Dr. Angus Smith's solution. The inspection chambers are formed in the pipe itself, securing immunity from the risk of defective brick manholes. The catalogue includes all requisite fittings and accessories, as well as the firm's patent controlled syphons, the "Horometer" timing syphon, a patent automatic sewage sprinkler, sewage ejectors, chain lift pumps, flushing valves, penstocks, etc. There are, besides, various patterns of boilers, and the firm's new pattern calorifiers. A good general index affords ready reference to an exceptionally useful catalogue.

Door and Window Fittings.

Messrs. Parker, Winder and Achurch, Ltd., hardware merchants, Broad Street, Birmingham, contractors to H.M. Government, the Natal Government, the L.C.C., and other corporations, have issued a fine catalogue illustrating the various types or patterns of door and window furniture and fittings of which they are patentees and manufacturers. These include a complete equipment of fittings for many varieties of service, plain and decorative, and of all the usual kinds of hardware associated with doors and windows, as well as with bookcases, etc. The "Securities" patent hotel mortice lock is specially adapted for "suited work" where security and privacy are essential Whereas in locks of this kind, the levers are usually alike, rendering the conversion into a master-key a simple matter of filing the wards, the differentiation in the system under notice is in the levers, so that an ordinary visitor's key cannot possibly be converted into a master-key. Many other mortice locks, of various patterns, are listed in the catalogue, as well as rim locks, front-door locks, stock locks, night latches, prison-cell locks, handles, finger-plates of various materials and patterns; bell pulls, electric switches; hinges of all kinds, panic bolts and latches, indicating devices; door springs and checks, fanlight and casement adjusters and openers; ventilator fittings, catches, stays, sash fittings, and sash lifts, fasteners, and pulleys, etc. Steel gates and railings for many purposes are also illustrated; and trolley tracks, elevators, cowls, staircases, weather vanes and finials add to the use and interest of a catalogue that architects will find decidedly valuable for reference.

LONDON MASTER BUILDERS' ASSOCIATION.

A Council meeting was held at Koh-i-Noor House, Kingsway, W.C., on Thursday last, November 10th, Mr. Leonard Horner (president) in the chair. Report was received from the committee on the L.C.C. suggested building regulations in connection with reinforced concrete construction. A long discussion took place on the land value duties, together with their effect upon the building industry, and the matter was referred to the committee for further consideration. The Organisation Committee's report was received, and new members were elected.

Final instructions with regard to the composition of the Diary and Handbook were given, and the book will be issued the first week in January, 1911.

The requisition made to the authority by the Council as regards measurement of slating and roof tiling has been agreed upon, and the new method of measurement will take place from January 1st, 1911.

The question of apprenticeship was again discussed, and the movement is receiving very favourable support.

Members were elected to fill certain offices on the National Federation of Building Trades Employers of Great Britain and Ireland.—THOS. COSTIGAN, Secretary.

FEDERATION NEWS.

Birmingham—Alteration of Working Rules.

The Executive Council of the Birmingham Building Trades Employees' Association have had under consideration the question of the revision of the working rules with the various sections of the operatives, and in accordance with the provisions of the rules, notices were duly served on the 31st October. It will be remembered that last March a new overtime rule was satisfactorily negotiated with the carpenters and joiners, the bricklayers and the labourers, which, with the view of preventing disputes, omitted the words "at the request of the employer." Experience had shown that this expression was open to various interpretetions, the operatives, on the one hand, contending that all overtime was in effect made at the request of the employer, whilst the employers contended that much of the overtime worked was done at the request of the operatives. In addition to the omission of these words, provision was made in the rules for the working of night shifts at the rate of time and a-quarter. Under the existing rule as well as under the rule previously in force, overtime was required to be paid after 5 p.m., and the effect of this has been seriously to limit the possible earnings of all classes of operatives, and particularly of the lowest grade, namely, the labourers. The experience of the past year proves conclusively that the early termination of the ordinary working day has not been satisfactory to the bulk of the operatives, because the only difficulties which have been met with have been cases where men at their own special request were allowed to work at ordinary rates until 5.30 or 6 p.m Profiting by this experience, the employers have given notice to alter the rule by providing that overtime shall not be paid until after 6 p.m. Incidentally, this will prevent existing difficulties, and will enable the operatives in an ordinary week's work to earn a higher average wage. In the case of labourers, for instance, the wages for a full week (without overtime, which in keen competitive jobs contractors can rarely afford), would be greater by 2s. 8½d., a not inconsiderable addition to the labourer's earnings. With other branches of the operatives, of course, the addition would be greater, so that the alteration would tend to the advantage of the worker.

The working rules with the operative masons and plasterers were not altered last year, and the effect of the employers' notice to these branches would be to bring the overtime rule with them into uniformity. In the case of the labourers, the employers' notice contains a proposal that the rule shall not apply to excavators. As the rules stand at present there is a provision in the wages rules that "these rates shall not apply to excavators," and the operatives last year contended that having regard to the fact that excavators were specially excluded from the wages rule, they were naturally intended to be included in all the other rules. The employers reasonably contended that this could not be so unless they (i.e., excavators) were specially included in other rules. Obviously, it would be dangerous if such a contention as that of the labourers were to be admitted, because it would involve the proposition that that which is not specially excluded from a rule is included in it. The natural explanation of the existing rules is that the words in the wages rule were specially inserted to prevent any misapprehension as to the wages of excavators.

Another rule with regard to which notice has been given to all branches of the operatives deals with what is known as "walking time." The present rule provides that if the distance of the work be within a radius of two and a half miles from Stephenson Place, the men shall walk in their own time, and that if between two and a-half miles and four miles, walking time shall be allowed at the rate of three miles per hour for the distance in excess of two and a-half miles. The following is an addendum: "This rule not to apply to men set on at the job." To illustrate the effect of the rule, it is only necessary to give one or two cases that may arise under its provisions The builders' yard is, say, four miles from a job. An operator resides within, say, fifty yards of the job. He is engaged at the builder's office. If the rule be interpreted literally, he need not start until one hour and twenty minutes later than an operative who was similarly engaged and who has, let us say, two miles to walk to the job. On the other hand, if the operative reside four miles distant, and is set on at the job, he must walk in his own time, so that his fellow worker, who lives within fifty yards of the job, and was set on at the builder's office, may actually remain in bed for, let us say, an hour after the other man, who has four miles to walk, has passed his house on his way to the job. The employers, in their notice, propose that this rule shall be deleted.

The last rule the employers have given notice to amend is that which states that "For the purpose of these rules any person or any partnership, or body of persons carying on the odinary trade of a builder, or taking contracts to execute the whole or any part of ordinary building work shall be deemed to be a master builder." It is proposed to alter this so as to bring within its scope any person or any partnership or body of persons "executing the whole or any part of ordinary building work," whether they carry on the ordinary trade of a builder or take contracts or not.—G. HENRY WRIGHT, Secretary.

Sunderland.

A general meeting of the Sunderland and District Building Trades Association was held in the Board Room, 14, Norfolk Street, Sunderland, on October 25th, Mr. J. Morice Wright, president, in the chair. The resolution passed at the last quarterly meeting of the Northern Counties Federation, recommending the deletion of the Sunderland dressed stone rule, and the substitution of the Tyne and Blyth District Federation rule, or some other similar rule in its place, was considered. The president and Mr. R. J. Huntley reported on the proceedings at the Federation meeting. Mr. Huntley said he thought that it should be made a National affair, and that the same rule should apply throughout the country. After considerable discussion, it was resolved that a ballot be taken among the members as to whether they are in favour of the deletion of the present dressed stone rule, and if so, what rule should be adopted in its place; and that a circular be forwarded to the members, setting out the Northern Counties Federation resolution, the Tyne and Blyth rule, and a rule containing the fair wages clause." The notice of motion of Mr. R. J. Huntley, as follows: "That consideration be given to the question of fixing a reasonable scale of charges for time work and material," was discussed, and on the proposition of the president, seconded by Mr. W. B. Cooper, it was resolved: "That a sub-committee, consisting of the president, Mr. F. W. Ranken, and Mr. R. J. Huntley, with power to add, be appointed to go into the matter, and draft a scale which shall be submitted to a general meeting for consideration." Consideration was given to the Mayor Elect's (Alderman Sanderson) invitation to join a conference to consider means to improve the business of the town by attracting orders from outside the town and inducing the inhabitants of the town to place their orders at home, and it was decided to accept the invitation and that the mayor elect be informed of the fact. It was resolved to hold a dinner. The president drew attention to the recent death by accident of Mr. John T. Clark, a member of the firm of Messrs. John Clark and Son, Ryhope, members of the association, and moved that a letter of condolence be forwarded to his family, which was agreed to.—W. H. HONE, solicitor, secretary.

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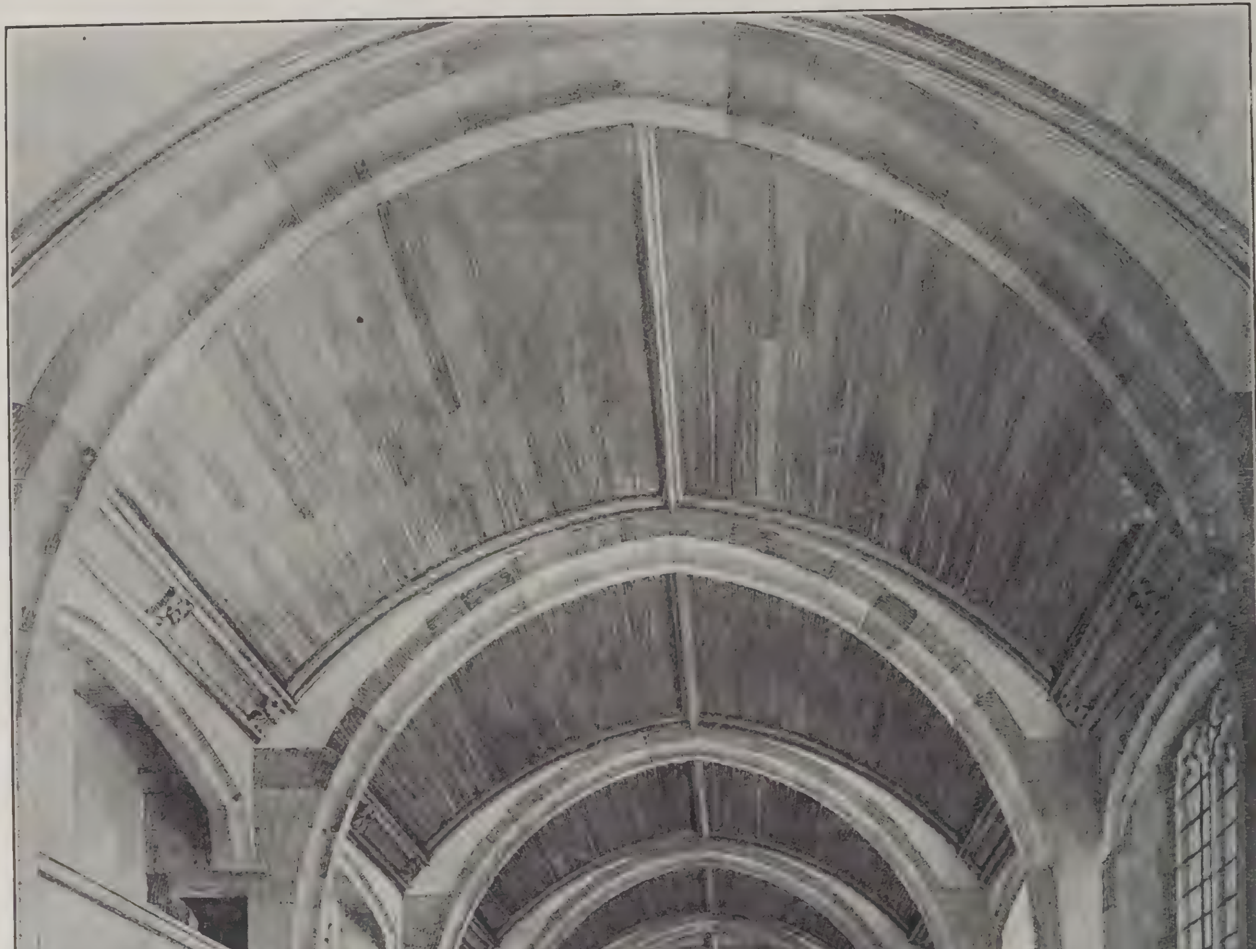
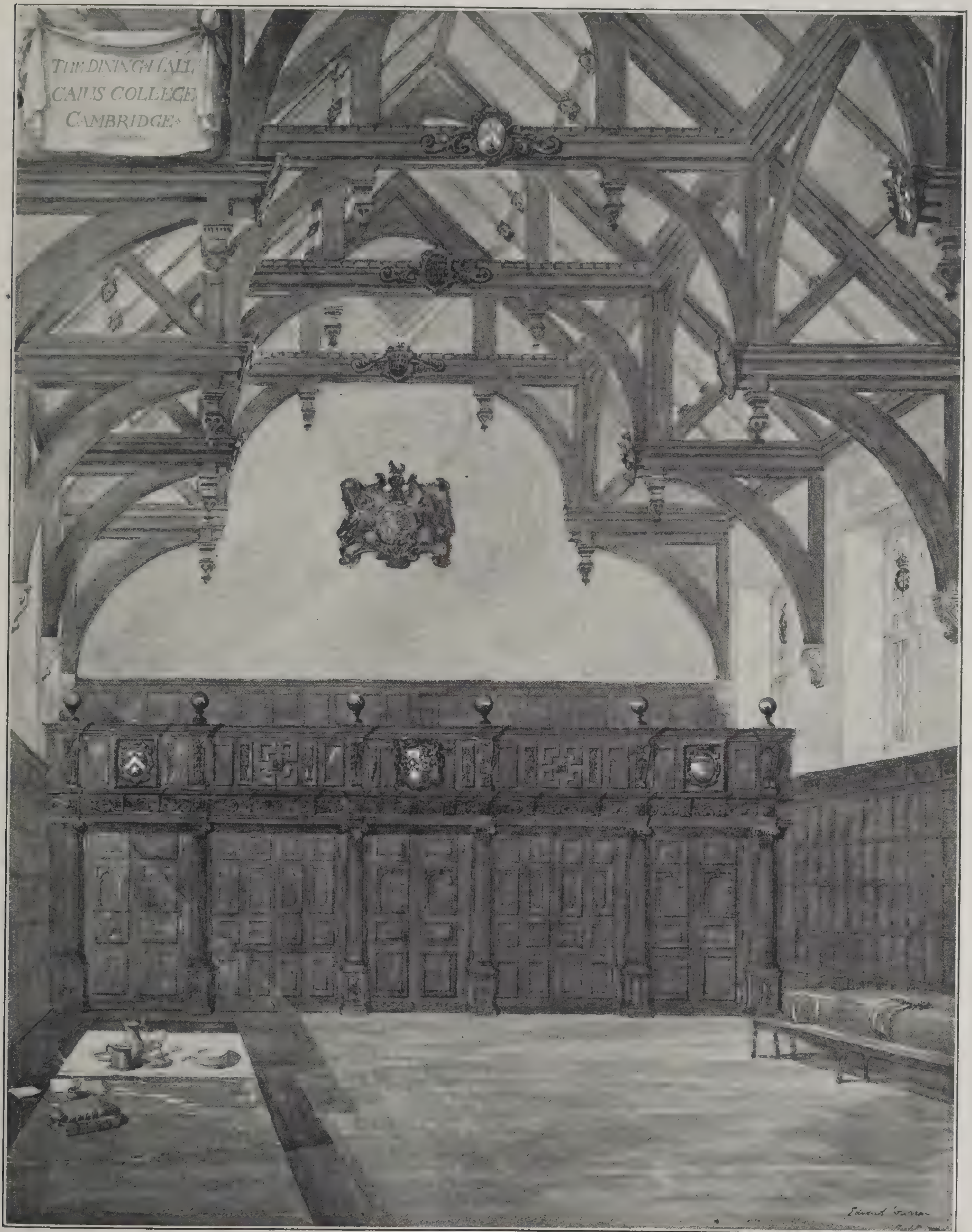
Supplement to The Architects' and Builders' Journal, Wednesday, *November 23rd, 1910.*


W.D.Caröe. Dec. 1909.

SCHOOL CHAPEL, NORTH EASTERN COUNTY SCHOOL, BARNARD CASTLE. W.D.CARÖE. ARCHT.


THE DINING HALL, CAIUS COLLEGE, CAMBRIDGE

ALTERATIONS TO THE DINING HALL, CAIUS COLLEGE, CAMBRIDGE.
EDWARD WARREN, F.S.A., F.R.I.B.A., ARCHITECT.

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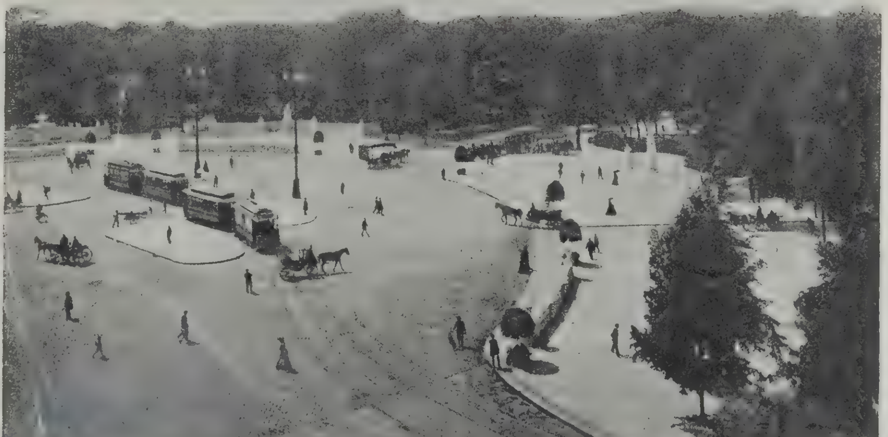
THE ARCHITECTS' & BUILDERS' JOURNAL

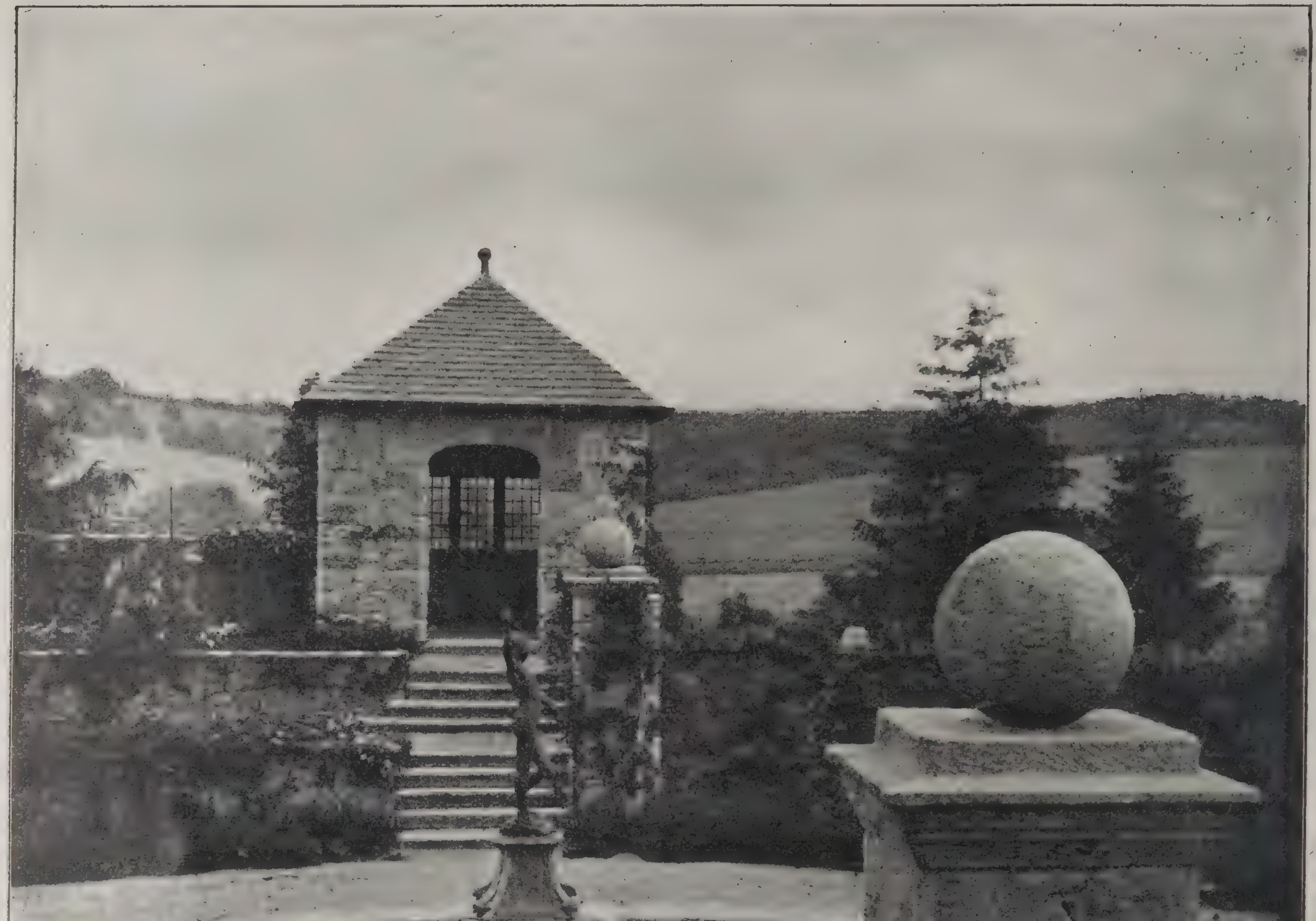
WEDNESDAY,
NOVEMBER 23rd, 1910.

Volume XXXII. No. 825.



Unter den Linden is closed at its western end by the gateway called the Brandenburger Thor. On the inner side of this is the Pariser Platz—a square measuring 400 ft. each way—while on the outer side is the fine semicircular space shown by the photograph above. The whole is a very effective example of modern town planning.

TOWN PLANNING IN BERLIN: SEMICIRCULAR SPACE TO THE WEST OF THE BRANDENBURGER THOR, WITH TIERGARTEN BEYOND.



This constitutes the special feature of the garden scheme. The fountain figure, in bronze, represents a boy spearing a fish. It was modelled by Mr. Derwent Wood, A.R.A. Further details of the garden are shown by the drawings reproduced on pages 540 and 541 of this issue.

POND AND FOUNTAIN IN A "WEST COUNTRY" GARDEN. THOMAS H. MAWSON, HON. A.R.I.B.A., GARDEN ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 23rd, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 825.

Note: The List of Contents will be found on Page V. of the front advertisements.

Drawing and Architecture.

THE theory that the less culture an architect has, the better and more sincere his architecture is likely to be, is flourished before us every now and then as a kind of reaction. Fergusson, who had a good many cranks in his head about architecture, made one memorable effort in this direction in his "History of Modern Architecture," in holding up for admiration a certain church at Mousta, in Malta, as built by a man who could neither write nor draw, and therefore, in his view, a building carried out in the same spirit as the productions of mediæval architecture. It would, he naïvely added, have been one of the most beautiful churches in Europe, "had the designers only got a learned architect to look over their design, and correct the details." He does not seem to have realised that by that remark he gave away his whole case.

It is to be regretted, though perhaps it is not surprising, that Mr. Gerald Horsley did not receive more support for his paper at the Architectural Association on the thesis "That Fine Draughtsmanship conduces to Fine Architecture." Not surprising, because this is a kind of declaration that always, in Lancelot Gobbo's phrase, "raises the waters" among the small class of architects who are pessimists in regard to all modern architecture (except their own). Modern architecture is something quite different from mediæval architecture, therefore it is wrong; and the difference must lie in this nefarious modern habit of drawing. Mediæval architects did not, apparently, draw; at all events, when they did, they drew very badly, as Villars de Honnecourt's sketch-book testifies; let us cease to draw architecture, or only draw it badly, and we shall be on the same level as the mediæval architects.

It is perfectly true, as far as we can ascertain, that mediæval architecture did not depend much upon drawing as we understand it; though, in order to set things out properly, there must have been more use of drawing than some people suppose. But times and conditions are changed. For the elaborate requirements of modern planning, elaborate plans, at all events, are an absolute necessity; no building can be properly arranged without them. That is one altered condition. Another altered condition, of the greatest importance, is that since the Renaissance architecture has ceased to be a national art, carried on almost automatically on certain recognised lines, it has become an individual art, practised according to individual taste and genius. People may regret that, but they cannot alter it. Even those who express the greatest regret for it, and profess to think that it has been the death of architecture, have their own individual way of designing, sometimes with almost too obvious a mannerism. Then there is the fact that we are now largely adopting, or returning to, forms founded on Classic architecture, and it is unquestionable that in this style of architecture detail has to be more carefully designed and executed than in buildings of a Gothic type, nor can it by any means be safely left to the inventiveness of the working craftsman. Another modern condition, which we frankly admit that we dislike, and consider very detrimental to architecture, is the prevalence of the contract system. It is this which is the cause of the comparatively timid and starved character of modern Classic compared with that of the days of Inigo Jones and Wren. The contract system necessitates exact drawing. But it does not follow that without it exact drawing may not be, if not a necessity, at least an advantage.

In these days architecture is *design,* not extempore building on an accepted system. The building is the expression of an idea, and the idea may be complete on paper even if not a stone of the building has been laid or ever will be laid. Some of the finest designs have never been carried out, but the design exists complete on paper, as in the case of Street's fine drawing for the Law Courts as he intended them, which is hanging now at Conduit Street. But for architectural drawing, that design would be a lost idea; and it is far finer than the building as existing. Had it been built, it would certainly have been no worse for having been on paper first. And the careful delineation of a design on paper gives the architect an opportunity of refining his design, of considering the proportion of different parts, and the relation of the detail to the whole, which he certainly could not have if he were only able to consider the details one by one as the building went on.

The educational influence of drawing, so ably insisted on by Mr. Horsley, we presume can hardly be denied even by the anti-drawing section. The study of figure-drawing, from the life, though it may seem at first sight only remotely connected with architecture, is the greatest education in form and design that anyone can have; a man who can draw the figure can draw anything. And taking drawing in more direct connection with architecture, it must be obvious to all who have tried it that the way we learn most about the design and structure of an ancient building is by drawing it. No mere study of illustrations by the eye has the same effect; in the course of drawing it a score of little but important points come out—force themselves upon the draughtsman's notice, which might have escaped notice otherwise.

And if drawing tends to assist observation, and therefore assists the education of the architect, conversely the love of and the talent for architecture makes itself evident in a predisposition to draw and a faculty for making fine drawings. The evidence of this, in modern times at all events, is far too striking and extensive to be ignored. Almost all our modern architects who have made a great name and a great success have been early known as fine draughtsmen. The early drawings by the architect of the Houses of Parliament are among the most beautiful work of the kind ever seen, and one of his first engagements was one to make drawings of Egyptian remains, as the artist accompanying a touring party. Street was a beautiful draughtsman; so was Waterhouse. Sir Aston Webb, who now commands so wide a field in the practice of architecture, was known in his younger days as one of our most beautiful draughtsmen. Nesfield and Mr. Norman Shaw first came into notice by their published drawings. Mr. Jackson and Professor Blomfield are both accomplished draughtsmen. The result of modern experience seems to show that it is the men who are the finest draughtsmen who subsequently take the prizes of the "profession or art" of architecture. It may be argued that *post hoc* is not *propter hoc*, but at all events facts seem to show that there is some intimate connection between success in drawing and success in architecture.

And, lastly, we would urge that architectural drawing, considered as the representation of architecture in drawings, is a beautiful form of art in itself, which is worth cultivating, not only for the pleasure it gives to those who look, but for the delight of him who draws. "What a beautiful thing is this perspective," said Paolo Uccello (who is supposed to have discovered the art), enraptured over his own work. Cannot many a young architect echo the sentiment, as he sees his conception of a building grow up under his skilful hands into apparent form and substance and effect? A man who does not enjoy making a good perspective will be unlikely to make a good building.

Decidedly, we are on the side of architects who draw; may they flourish!

The Late Mr. La Farge.

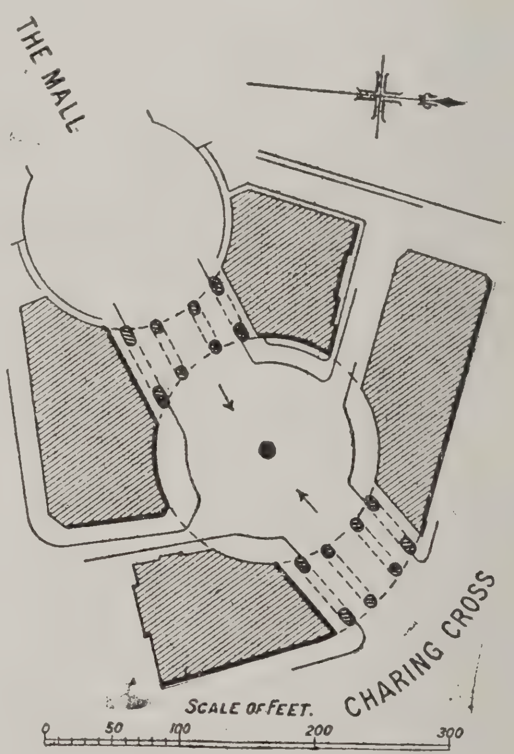
MR. JOHN LA FARGE, whose death we regret to see announced, was a very important figure in American art, and in some ways a remarkable artist; but American art is still rather a relative standard, though the Americans (naturally) do not seem to be aware of the fact. We read in the daily papers that the death of Mr. La Farge is the greatest loss which American art has sustained since the death of St. Gaudens, who has been spoken of as a great sculptor. He was a great American sculptor, no doubt, and he had ideas, but he had never achieved style in sculpture. Mr. La Farge, in a similar sense, was a great American painter, but an exhibition of his pictures some few years ago in London rendered it evident that he was a designer, not a painter; as paintings, his works were hard, toneless, and textureless, and were a great disappointment to those who had made the acquaintance of his designs previously only in black and white. As a designer of symbolic figures he had a great power; his design of the Evil One sowing tares, for instance, was a thing that remained in the memory; and his style of design was well suited for mural decoration, in which we believe he did a good deal; but his countrymen must not call him a painter, in the full and true sense of the word. Mr. La Farge also influenced the improvement of stained glass design in America very much, and in entirely the right direction. That was a branch of art that he thoroughly understood, and in which he has probably left a lasting and an important influence behind him.

Tolstoy's View of Art.

BY the death of Tolstoy a great heart and a great intellect are removed from the world; but it was an intellect not entirely sane in its views and its prejudices. Like some other thinkers and writers with strong feelings as to the paramount importance of duty (Carlyle was another of them), he confounded art with morality, or at all events thought that art was worthless or misdirected unless it subserved a moral lesson. This was a double mistake. An art of which moral influence is the admitted object is pretty sure to lose its power as art, and on that very account probably does not achieve its moral lesson. Art is for enjoyment, and the real morality of art consists in its administering to enjoyment of an elevated kind, and in being thorough and conscientious in itself. There is a certain immorality in careless, showy, slapdash art; it sets an example of cultivating notoriety rather than real achievement; while all art to which the most conscientious pains and effort have been given has a sort of moral influence, in setting a high standard of effort. That is the real morality of art. There is something for consideration, however, in Tolstoy's view that art had become too sophisticated, and that true art should be immediately comprehensible by the simplest minds. One must not push that too far; some degree of mental culture is necessary to understand the best that art has to give; but in regard to architecture, for instance, it is true that broad and simple effects tell more than that which is over-elaborated and far-fetched. It is best that art should be so far broad and simple as to appeal to mankind at large; but along with this there will generally be a higher message which is only appreciated by the few. The fine element in Tolstoy's view, mistaken as it was in some respects, consists in his absolute sincerity, and his desire that the same sincerity should appear in art. But one may be sincere without being dogmatic.

The Mall Improvement.

PROFESSOR PITE makes an important suggestion in the "Times," for the connection of the Mall with the Strand, accompanied by a sketch plan, which we reproduce. He points out that the demolition of three more houses on the south side of Trafalgar Square will not produce a satisfactory architectural effect; that it will become apparent that the axis of the archway is not that of the Strand, and the entry will be flanked by buildings of commonplace character, the side elevation of Drummond's Bank being one. He proposes, as indicated in his plan, to form a circular place, completing the line of Sir Aston Webb's building, with an arcaded opening to Charing Cross of similar character to that of the existing building. This would be an effective, though rather costly way of doing it; but the position only illustrates the mistake that was made in departing from Sir Aston Webb's original design, in which the want of axiality between the Mall and the Strand was fully provided for by the large fountain placed at the point of intersection of the two axes, so as to make a central object in the vista from both directions. That was in fact the best point in Sir Aston Webb's plan for the Victoria Memorial Road, and we have never understood why it was abrogated.



CHRONICLE AND COMMENT.

Re-planning Bradford.

The re-planning of Bradford is under discussion in the local newspapers, and it is gratifying to find that the architects are taking a chief share in it. One of them writes in the "Bradford Daily Telegraph" suggesting that a Kingsway commencing from Forster Square, and extending up Kirkgate to the top of Ivegate, would form a wide main artery. With a view to obtaining a more direct approach to the Great Northern and Lancashire and Yorkshire Stations, Bank Street can be extended through the George Hotel to Leeds Road, crossing Hall Ings, and then through the obsolete Court House, and thus bring the station into almost direct line with the shopping centre of the city. He remarks that while the extension of the railway across Forster Square will give opportunities for a great improvement in blocks of buildings and streets affected, nevertheless a railway viaduct at its best is not calculated to inspire shop building along the line of route. It can only be a one-sided street with the arches or supports taking up a portion of it. Experience of this form of street has already been acquired in other cities; one particular instance is Liverpool. The most casual observer could not be impressed with the effects of the raised railway near George's Pier Head and continuing along Waterloo Road, Regent Road, etc. The first thing that strikes one about these suggestions is the imitativeness—it would perhaps be unfair to call it poverty of invention—which leads to the repetition of names like Kingsway. As to the treatment of railway lines, this is everywhere one of the most difficult problems with which town-planners are confronted. The effect of the railways is disastrous on both sides; but surely the stations need not be so depressingly ugly.

The Problem of St. George's Hall.

The most illuminating contribution to the controversy which has arisen over the project to set up a memorial to King Edward in front of the south portico of St. George's Hall, Liverpool, is that by Mr. Lionel B. Budden, M.A., published in the current issue of "The Architectural Review." After a careful examination of the working drawings preserved in the Municipal Offices in Liverpool, Mr. Budden says it would appear that the question of providing means of access to the south portico had from the first proved one of Elmes's most serious difficulties. The earliest existing plan and elevation of this façade show the architect's first conception to have been the prototype to which Cockerell returned in arriving at his ultimate solution. The basement wall was broken simply by a central doorway. A tunnel-like passage led from this door to concealed steps ascending to the rear of the portico. The south entrance to the hall was therefore designed as a piece of isolated architecture, convenient access to which from the street below was practically unnecessary. For some reason Elmes was apparently forced to abandon this treatment of the base, and proceeded to work on other lines, but with no certain success. A number of undated alternative schemes have survived, and at the time of his death in 1847 nothing definite had been determined. It has been suggested that he intended the portico to be approached from the street by means of a continuous flight of steps. But no evidence of any sort can be discovered to support the theory, and the steep slope of the street itself renders the probability of such an idea ever having been entertained very remote. The earliest drawing of the present arrangement is dated 1860, though other drawings—notably one prepared in 1858—suggest that the idea was submitted in various modified forms between 1853 and 1860. In the absence of data to the contrary, it would seem, then, that seven years elapsed before Cockerell was able to prevail upon the committee to sanction the abolition of the approach. The heavy battered wall, 13ft. in advance of the old vertical face, was carried through, and an unbroken plateau constructed in front of the portico. This was in substance Elmes's original conception (the central door and concealed steps being omitted), and a finer solution of the problem could hardly be imagined. The massive solidity of the great basis, weakened by no incision, gives added breadth and force to the superstructure, and its well-calculated simplicity emphasises the rich magnificence of the portico. The superb colonnade is raised upon a vast pedestal, from which it may make a more splendid impact upon the imagination. To have proposed to destroy this achievement and deliberately revert to a crude form of the feature condemned by Cockerell half a century ago, indicates an extraordinary presumption. But the immediate environment of St. George's Hall has in recent years suffered much from the hands of sculptors, and at considerable public expense; so that the spirit of the recent project was not without precedent.

The Dining Hall at Gonville and Caius College, Cambridge.

(*See Centre Plate.*)

This hall was built in the middle of the nineteenth century from the designs of Mr. Salvin, in a manner remotely Jacobean, and in certain features, notably its roof, offering some suggestion of inspiration from the Hall of the Middle Temple. It was, however, provided with an immense allowance of window. The longitudinal axis of the hall is arranged approximately from north to south, the daïs and high table occupying the southern end, which is illumined by a large south window, as well as by the traditional daïs bay on the west side. The hall was further lit by large three-light round-headed windows, along its sides, one to each roof compartment. All these windows were not only wide, but very tall, and carried down to within a few feet of the floor. The roof principals, which are of the hammer-beam and collar type, are supported upon stone corbels. These, as Salvin left them, were very long, and had the effect of lowering the apparent height of the roof by bringing its supports too near the floor. They have been altered and shortened. The college had felt for some time that it was desirable to diminish the window space, which was found to be uncomfortably liberal, and, by raising their sills, and thus shortening the window, to provide space for a high wainscot of oak panelling, upon which the numerous portraits could be hung. It was also desired to conceal the carving tables and buttery approaches, by forming the usual collegiate servery "behind screens," and to provide a gallery over the screens. After a strictly limited competition in the spring of 1908, in which five architects took part, the award was made to the designs of Mr. Edward Warren, F.S.A., F.R.I.B.A., who has carried out the alterations. The windows have been altered, both in respect to the form of their heads and the height of their sills; oak panelling has been carried round the sides to a height of about 11ft., and behind the daïs to a height of about 14ft.; an oaken screen with entrances and serving doors, has been carried across the north end, beneath a gallery, whose overhanging front is supported upon disengaged fluted columns. Upon the gallery front, and upon the ends of the hammer beams, and the centres of the collars of the roof, shields, carved and emblazoned with the arms of College worthies and benefactors, have been placed. The plaster ceiling has been superseded by one of boards, subdivided by broad shallow ribs, with carved and gilded bows on their intersections. The oak is all English, of fine quality and slightly ammonia stained and waxed. The hall is situated above the college kitchen and its offices, and is approached from the ground level by means of twin staircases, one for occupants of the "high table" at the southern end, and one for undergraduates at the northern end. These staircases, which unite on a common landing near the vestibule of approach from Gonville Court, were extremely steep, the steps of stone, and the walls merely plastered. They were also, unlike the hall, inadequately lit. New stairs, of easier "going," in concrete with teak treads and risers, have been substituted for the old, and the walls have been clothed with oak panelling to a considerable height. New windows have been formed, and plain, shallow vaulted plaster ceilings, subdivided by transverse ribs, put up. Further alterations have been made in the College, the chief of which are the formation of a junior common room, long and low, with oak panelling, and chimney pieces of oak and stone, on the ground floor, the modification of the small fifteenth century dining hall, which had been cut up and partitioned off into living rooms, in the last century, as an additional College library, and the construction of bathrooms, lavatories, and heating chambers in a newly formed basement. Mr. William Sindall, of Cambridge, was the contractor for all the work; the wall carving was done by Mr. Mabey, of Vauxhall Bridge Road; metal hinges, etc., casements and glazing (including some heraldic glass), by Messrs. Wainwright and Waring, of Chiswick; bronze hand-rails for stairs, wrought iron roof ties for the library, and other metal work, by Messrs. F. Clubb and Son, of Sudbury and Hampstead; heraldic painting, gilding, etc., by Mr. Jackson, of Ealing; and plasterwork by Mr. Lawrence Turner, of Lamb's Conduit Street. Mr. H. Leaf, of Victoria Street, Westminster, carried out the extensive alterations to the electric lighting, and the provision of ventilating fan and motor, etc., and Messrs. Amburn, Marriott and Co., of Higham Ferrers, carried out the heating and hot water supply work.

Memorial to Mr. G. F. Watts.

A memorial to the late Mr. George Frederick Watts, O.M., R.A., is being constructed at Compton, Surrey, where he spent his last years. In the village cemetery, in which is a mortuary chapel erected some years ago from the designs of Mrs. Watts, a cloister of brick, 91ft. in length and 7ft. in width, is being built, and is expected to be completed in the course of the next few weeks. In it will be placed two simply framed tablets executed from the designs of Mr. Watts. One, "The Destiny," represents the beginning of life, and the other, "The Messenger," the end of life. In the centre will be a modelled recumbent figure of Mr. Watts, the work of Mr. Thomas Wren, of The Hostel, Compton, where modelling and pottery-making have been carried on for many years under the direction of Mrs. Watts. Mrs. Watts's aim in providing for other memorial tablets to be placed in the cloister is to prevent the cemetery from being disfigured, as she considers, by irregular upright tombstones. Cloisters for the reception of memorial tablets have been erected in America, but this is believed to be the first cloister constructed in a modern cemetery in England.

London's Memorial to King Edward.

A definite step has been taken towards erecting in London a suitable memorial of King Edward. A meeting of the General Committee of the Mansion House Fund determined on the erection of a statue at a cost of from £50,000 to £70,000 in some conspicuous place in the metropolis. The Executive Committee, to which the matter had been entrusted, brought up a report expressing the opinion that, whatever else the memorial to King Edward might consist of, there should, as proposed by Viscount Esher, first and foremost be a statue of his Majesty in some appropriate place in London, to be hereafter decided. Various suggestions as to the site of the statue, such as the centre of the Broad Walk in the Green Park, Piccadilly Circus, etc., have reached the committee, and will be duly considered. The General Committee agreed that such a statue, with its accessories, should be erected in the metropolis. It was roughly computed during the discussion, that the cost of such a work of art would be from £50,000 to £70,000. The Executive Committee then reduced the consideration of the suggestions to four of the most suitable and popular of them—viz.: (1) Viscount Esher's proposal for an historical museum in London on the lines of the Musée Carnavalet in Paris. (2) Lord Avebury's scheme for a central hall for the University of London. (3) Lord Eversley's suggestion for providing a monumental chapel or annexe to Westminster Abbey. (4) The acquisition of the Crystal Palace. In the result the Executive Committee decided to recommend to the General Committee schemes 1 and 2, with a view to their determining whether either should be adopted —in addition to the statue—as the form of the London memorial to the late King.

No. 9, Conduit Street.

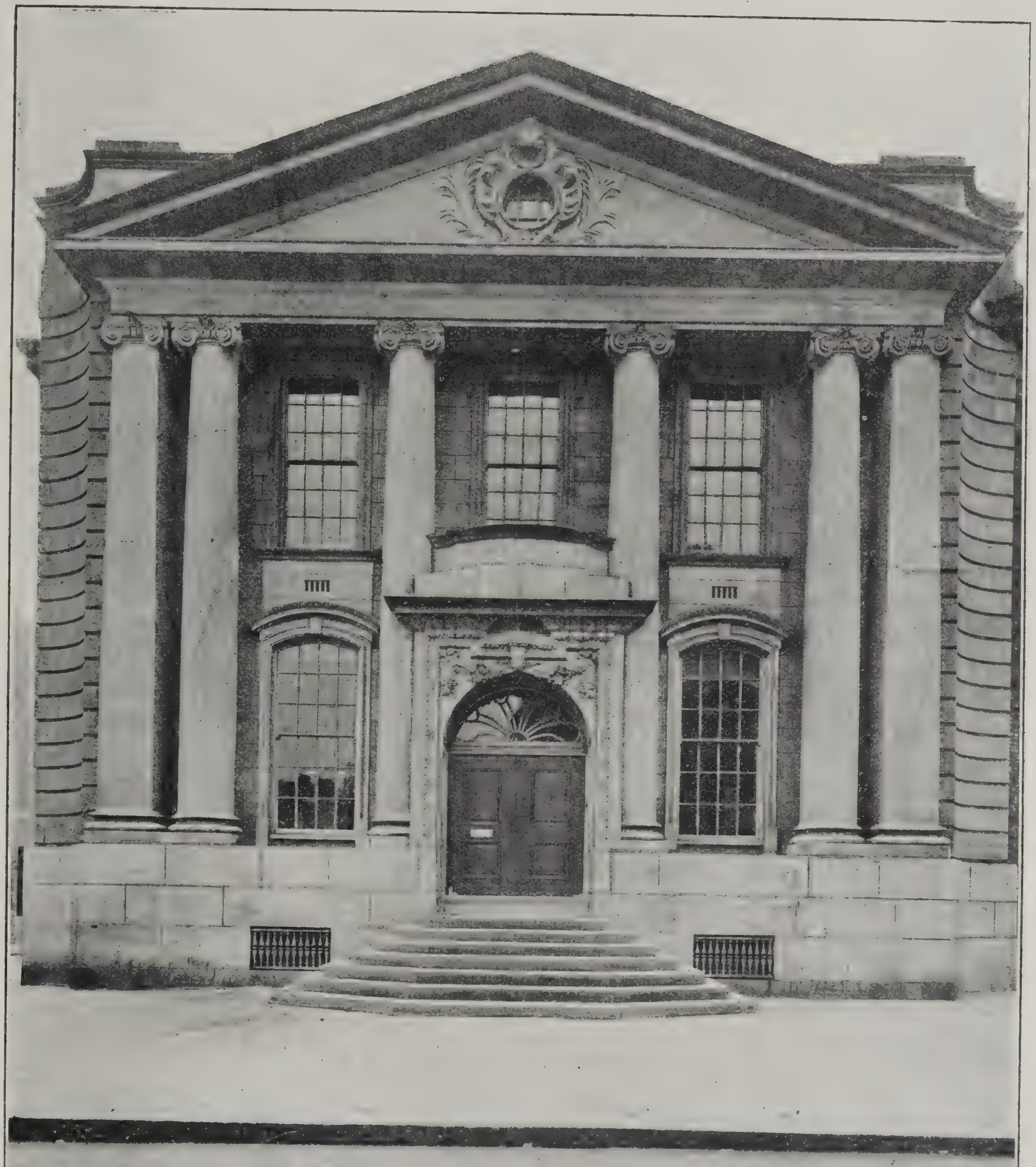
Pending the rebuilding of the façade of the Institute of Architects' house at 9, Conduit Street, which we hope to see carried out sooner or later, may we suggest that it is really time that the wretched Early Victorian cast-iron railing should be removed from before the front, and replaced by something more artistic. Inside the building everything in the vestibule and in the new rooms is now in perfectly good taste; and outside, where every one can see it, the architects' house is disfigured by one of the worst and most commonplace iron railings in London. If this were removed and replaced with a railing of good design, there would be nothing to complain of in the aspect of the façade, except that it is inadequate in character and material, for it is not in bad taste. Whenever the façade is rebuilt, it would be easy to temporarily remove the railing and replace it after the work was done.

The R.I.B.A. and the Society of Architects.

The following paragraph, taken from the current issue of the Journal of the Society of Architects, indicates a regrettable oversight on the part of the Royal Institute with regard to the recent Town Planning Conference:—"The R.I.B.A. did not hesitate to ask the Society to distribute the Conference literature to its members, but they did not extend the courtesy of an official invitation for the Society to be represented. Four years ago the R.I.B.A. gladly accepted a contribution of £100 from the Society toward the expenses of the Architectural Congress, and from time to time the Institute place themselves in the invidious position of seeking and accepting favours and assistance from a Society which apparently is not in their opinion entitled to the courtesies extended to other similar corporate bodies."

The Corporation and St. Paul's Bridge.

Mr. W. H. Thomas, Chairman of the Bridge House Estates Committee of the City of London Corporation, replying at the meeting of the Court of Common Council, last week, to questions, said that the London County Council's letter of July last, which had caused the trouble between them and the Corporation, had since been tacitly withdrawn at a recent conference between them and representatives of the Council. Those representatives expressed the Council's willingness to join in the Corporation's scheme, and the City welcomed their co-operation, but on reasonable terms and conditions. He understood the City's scheme was still condemned by the Royal Institute of British Architects, whose idea was to open up the view of St. Paul's Cathedral. The Committee considered that suggestion impracticable both for traffic reasons and having regard to the enormously increased cost which would be involved. The Corporation were not disposed to build a new bridge simply to get a finer view of St. Paul's Cathedral. The Committee would procure the best architectural advice which was available before sanctioning any design for the new bridge. The threat of the Royal Institute of British Architects to oppose the City's Bill in Parliament had no terrors for the Committee. At all events, the Corporation and not the Institute were the custodians of the trust money from which the bridge would be built. Here, again, we get that touch of "temper" which is so deplorable an element in public affairs, and a recrudescence of that narrow parochial view which has ruined so many promising schemes.



The additions to Chelsea Town Hall, which have been carried out from designs by Mr. Leonard Stokes, P.R.I B.A., form the new front to King's Road, and provide new municipal offices for the town clerk, borough accountant, and other officials. The entrance shown above leads through a corridor to the Old Town Hall at the rear, which was built from designs by the late Mr. J. M. Brydon. The façade is carried out in Portland stone and Cornish granite, with brick filling.

CHELSEA TOWN HALL EXTENSION: DETAIL OF ENTRANCE. LEONARD STOKES, P.R.I.B.A., ARCHITECT.

CORRESPONDENCE.

[The Editor declines the responsibility for the statements made or opinions expressed by correspondents.]

Joyce Green Hospital, Dartford.

SIR,—In your obituary notice, November 10th, you attribute the design and carrying out of the Joyce Green Hospital at Dartford to the late John Treadwell, F.S.I., in association with his surviving partner. May I correct this error by stating that my late firm, A. and C. Harston, were entrusted with that work, one of considerable magnitude, by the Metropolitan Asylums Board.

ARTHUR HARSTON.

The Minimum Cost of Cottages.

SIR,—Mr. Strachey's cottages do not appear to have been cubed up—a strange omission. I have endeavoured to cube them up, and they work out at about 4d. per cubic foot. If this is so, they are not cheaper than other cottages, and the saving is gained by reducing the size of the cottages—a simple method. Even then they might have been much more comfortable if they had been designed differently, by an architect. I fear they would not appear so successful in a competition, judged with other plans by a competent assessor.

A REGULAR READER.

"The Difficulties of Preserving Buildings."

SIR,—In your issue of September 28 last you published, under the above heading, a sketch of an ancient building at Limpsfield, Surrey, together with a letter from Mr. Arthur Keen bearing upon the subject.

The Committee of this Society addressed a letter to the Postmaster-General begging that the decision to demolish the building might be reconsidered, as it had been assured by those competent to judge that the building could be altered so as to provide the accommodation required, without detracting from its value to any appreciable extent.

The Committee also ventured to point out that if this ancient building is demolished, the most picturesque part of Limpsfield village will be destroyed.

I am desired by the Committee to forward to you a copy of the reply which it has received from the Postmaster-General, in the hope that you may be able to spare space to publish it in your valuable columns.

THACKERAY TURNER, Secretary,
Society for the Protection of Ancient Buildings.

[Copy.]
General Post Office, London.
5th November, 1910.

SIR,—In reply to your letter of the 7th ultimo, relative to a building at Limpsfield which has been purchased by the Sub-Postmaster as a site for a new Post Office, I am directed by the Postmaster-General to state that the suggestion that the building should be altered with a view to providing the accommodation required has been carefully considered; but this is found to be impracticable. Not only is the building faulty in itself, but it is also insanitary, and, owing to the saturated state of the sub-soil, a menace to the health of adjoining occupiers.

The building itself, though it forms part of an interesting group, has no particular historical interest.

It is understood that the Sub-Postmaster, as the result of enquiries which extended over some time, was unable to find any other available site suitable for the purpose in view; and, in all the circumstances, the Postmaster-General regrets that he does not see his way to interfere further in the matter. I am, Sir, your obedient Servant,

(Signed) E. CRABB.

Arbitration Award Between Leicester Plumbers and Heating and Domestic Engineers.

SIR,—I am instructed by my Committee to inform you that although our National Federation have recommended the above award to the various local associations, this Federation have been unable to approve the same.

I am also requested to ask that you will call attention to this fact in an early issue of your journal.

JOHN TOMLISON, Secretary.
Lancashire, Cheshire, and North Wales Building Trades Employers' Federation.

COMPETITIONS.

Coventry Municipal Buildings and Town Hall.

The conditions of this competition, which is open to all architects, have now been issued, and state that while the municipal buildings are not to cost more than £50,000, the cost of the town hall is left to the discretion of competitors. The winner is to carry out the design, and will receive £150 in addition to his commission. The authors of the designs placed first and third will receive £175 each. Mr. E. Guy Dawber is the assessor.

Deptford Library.

The assessor to be appointed in connection with the limited competition for a central library building for Deptford is to receive a fee of fifty guineas.

Town Hall, Airdrie.

The awards in this competition are as follows:—1, James Thomson and Sons, who are appointed architects of the new building; 2, George Arthur and Son; 3, A. D. Aitken. The successful design is in Renaissance style, with large hall for 1,300, and small hall for 350.

Swansea Cottage Exhibition.

The assessors in this competition (Mr. H. Bedford Tyler, of Bournville, Mr. Geoffrey Lucas, F.R.I.B.A., of London, Mr. George Bell, A.M.I.C.E., of Swansea, and Mr. W. Miller, of Swansea) have issued their award as follows:—

Class A (maximum cost £202).—Gold medal: Exhibits 10, 11, and 12. Cost, including builder's profits, and architect's fees, £195 6s. 8d. Architect: E. C. P. Monson, F.R.I.B.A., London. Builders: Messrs. Spencer, Santo and Co, Ltd., London.

Class B (maximum cost £231).—Gold medals: Exhibit 16. Exhibits 5 and 6. Bracketed equal.

Exhibit 16: Cost, including builders' profits, and architects' fees, £231. Architects: Messrs. Pepler and Allen, Swansea and London. Builders: Messrs. Spencer, Santo and Co., Ltd., London.

Exhibits 5 and 6: Cost, including builders' profits and architect's fees, £231. Architect: Charles T. Ruthen, Swansea. Builders: Messrs. Lloyd Bros., Swansea.

Class C (maximum cost, £260).—Gold medal: Exhibits 18 and 19. Cost, including builders' profits and architect's fees, £259 17s. 6d. Architect: Charles T. Ruthen, Swansea. Builders: Messrs. Lloyd Bros., Swansea.

Silver medal: Exhibits 2 and 3. Cost, including builders' profits and architect's fees, £259 17s. 6d. Architect: Charles T. Ruthen, Swansea. Builders: Messrs. Lloyd Bros., Swansea.

Bronze medal: Exhibit 14. Cost, including builders' profits and architects' fees, £260. Architects: Messrs. Pepler and Allen, Swansea and London. Builders: Messrs. Dawson and Jones, Forest Fach, Sheffield and Huddersfield.

Class D (maximum cost £350).—Gold medal: Exhibits 8 and 9. Cost, including builders' profits and architect's fees, £336. Architect: P. Morley Horder, F.R.I.B.A., London. Builders: Messrs. Spencer, Santo and Co., Ltd., London.

The above awards are made on the understanding that the exhibitors are prepared to build 12 or more cottages on the Town Hall Estate at the same price if called upon to do so by the Swansea Town Council within a reasonable time.

LIST OF COMPETITIONS OPEN.

NOV. 29. BANGOR (COUNTY DOWN). SEA-WATER BATHS.—Particulars in our issue for October 12.

DEC. 1. MANCHESTER. LAYING OUT OF THE BLACKLEY ESTATE.—Particulars in our issue for October 12.

DEC. 5. RHOSNEIGR, ANGLESEY.—Plans and specifications are invited for water and sewerage schemes for the village of Rhosneigr. Particulars from Owen J. Hughes, Clerk to the Valley R.D.C., Bryncuhelyn, Llanerchymedd, Anglesey.

DEC. 14. DOUGLAS (ISLE OF MAN).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

DEC. 31. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A., in our issue of November 2nd.

FEB 1, 1911. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

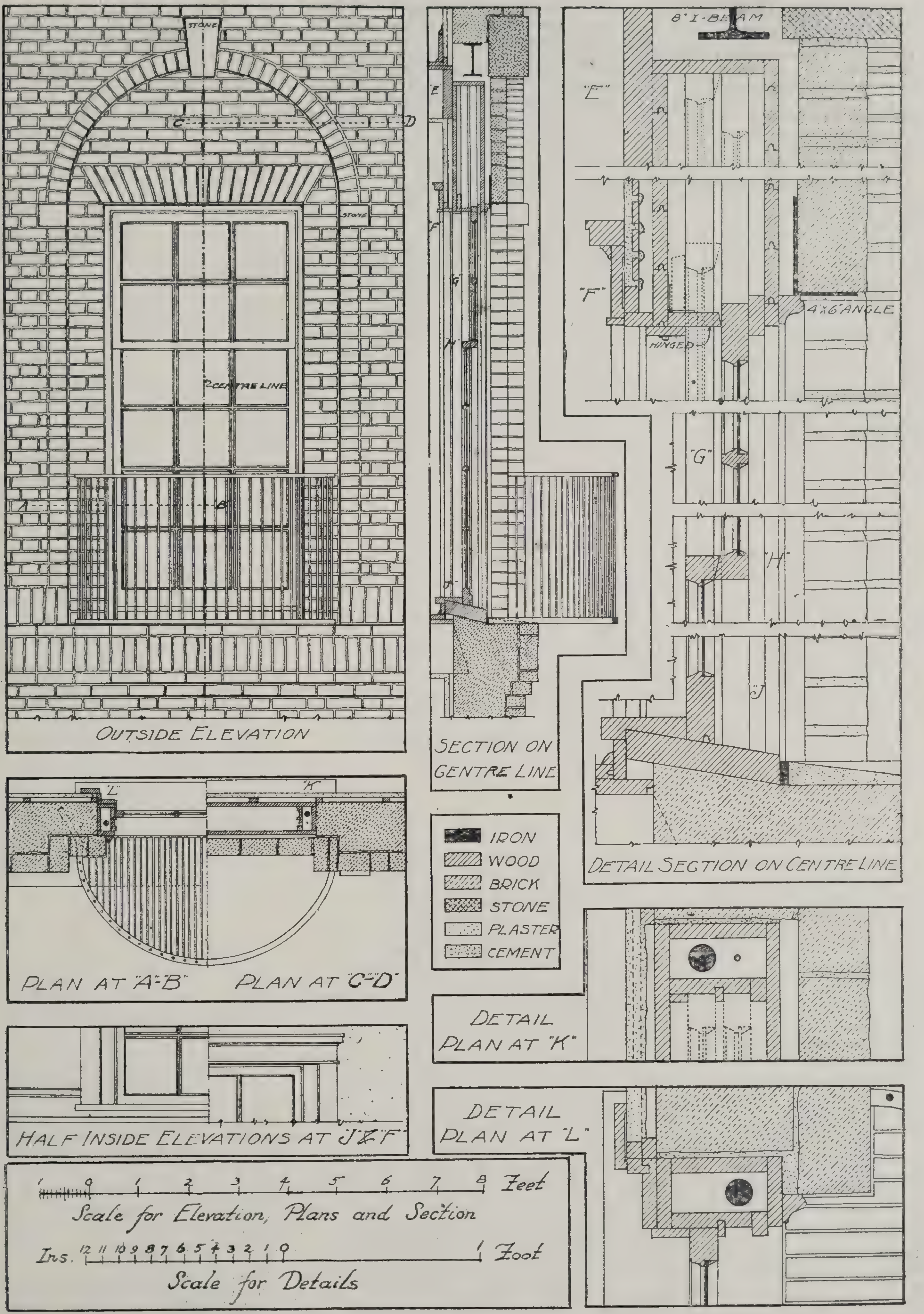
MARCH 11, 1911.—MUNICIPAL OFFICES, COVENTRY.—This competition is open to all architects, and the assessor is Mr. E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry.

MARCH 15, 1911. THEATRE AT SAN SALVADOR.—Particulars in our issue for October 26.

NO DATE. TREDEGAR (MON.). MODEL VILLAGE.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

FORM 4 AND THE BUILDING TRADE.

To a plaintiff in the Clerkenwell County Court on Wednesday last, Judge Edge said: "This is about the worst time of year that you could ask for an order against a master builder. Not only is it the worst time of year, but we hear that building work has stopped by reason of Form 4. There is a complaint all over the country that it has been a great blow to the building trade. I have men coming here on judgment summons days and telling me that they are in the building trade, that they are out of work, and cannot pay. I hear it again and again."



AN AMERICAN "SLIPHEAD" WINDOW IN A BRICK WALL.

(See next page.)

THE DESIGN OF WOODEN CASEMENT WINDOWS.

BY C. PITWOOD CARTER, A.R.I.B.A.

Most architects will agree that casement windows are more suitable for small houses than sash windows, being more artistic in appearance, and free from the tendency to rattle. They have, however, two drawbacks, the first being that unless properly designed they are not watertight; and the second, and by far the commoner, they tend to sag and bind at the sill.

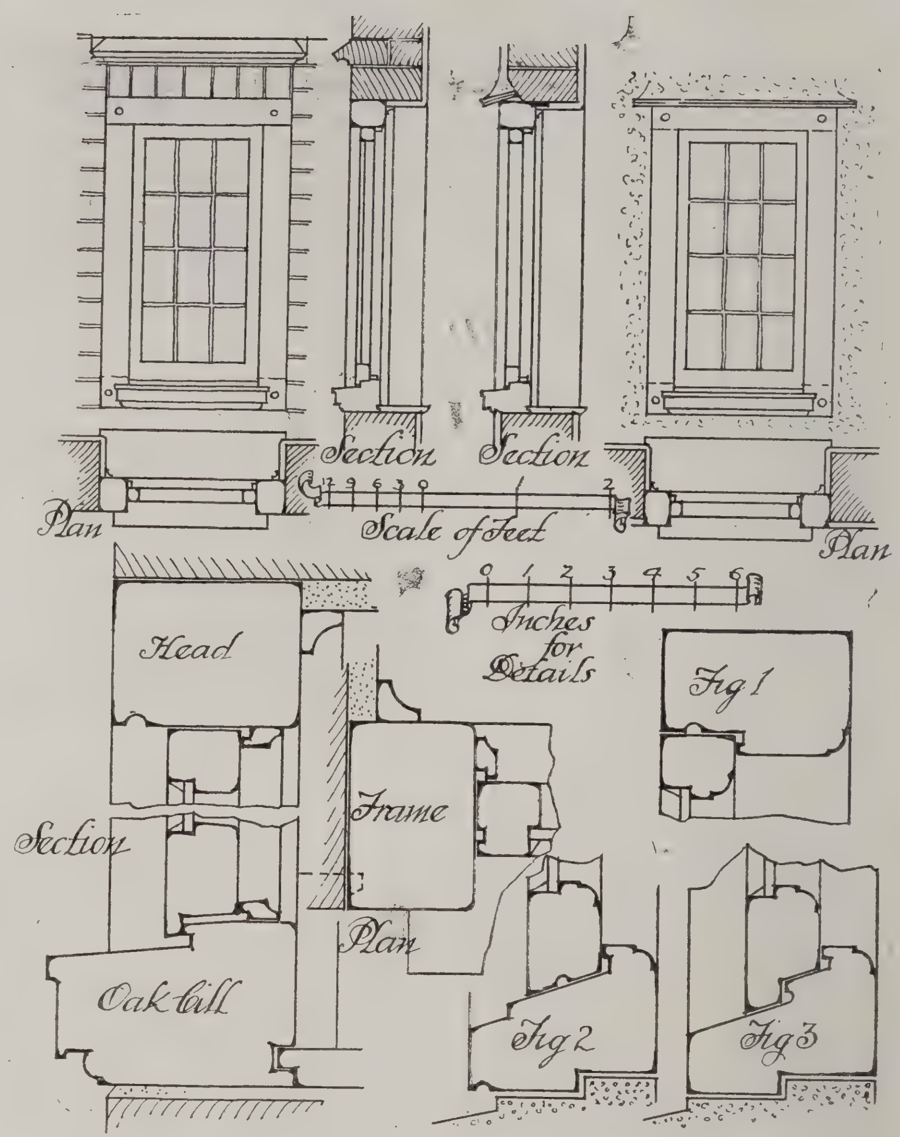
Recently I have had reasons for carefully looking into the detailing of casements, and have been struck with the fact that very many casements, even when well detailed from a weather point of view, have not had much thought spent on them from the "binding" point of view.

Generally speaking, low casements look far better than tall ones, and about 1ft. 9in. is near the limit for centre to centre of mullions, which should be about 4½in. by 3in.; but if two ½in. rebates are worked off, this only leaves 2in. on the face, which is not enough; rebates, however, need not be worked in the solid.

Turning to actual details, we may take it as a rule that a simple section on right lines, and well made, will be far more effective than an elaborate section, and this applies equally to iron casements.

One frequently sees the frames, and especially the sills, of casements so cut away that they are considerably weakened.

Fig. 1 shows a type often seen, with the face of the casement flush with the frame—perhaps it would be more correct to say that the faces are meant to be flush, for they are not in that relation very long. It will be seen that it is next to impossible to make this section watertight at the head. On a windy day, water runs down the wall above, and is blown into the joint between the casement and frame, and, when once in, it is too late to deal with it effectively.



Figs. 2 and 3 are very common types of sills, and if the joint is fairly good they are weatherproof, though they are very much weakened by cutting away; but the least sag in the casement causes them to bind, and even if they do not sag, the first renewal coat of paint has this effect. Result: Joiner is called in, and he "eases" the casement by planing off the paint on the bottom of the sill, leaving the wood exposed to the weather.

The conclusions I have come to, after many experiments, are that the type of details shown by the plan and section are by far the best. The casement should be set in a reveal to allow a deep throating on the head, and a rebated bead planted on the frame to obviate the necessity of cutting away and weakening the frame. This bead should be bevelled to the casement at the sill, and a hole should be bored through as a condensation outlet. The sill of the casement should be formed with an outer lip bevelled to the front to throw off water. The sill of the frame being throated to meet it, a very slight slope on the sill under the casement is all that is necessary, and the underside of the casement sill should be kept well clear, thus forming an air-lock, which is one of the most effective safeguards for keeping out wet.

A 6in. by 4in. sill on these lines will give room for a bold throated moulding on the front, and, if oak is used, no other sill will be necessary. If the frame is set in a reveal in the wall, some other sill will certainly be needed, in which case the wood sill of the frame should be throated, as in Fig. 2, and not kept flush, as in Fig. 3, because the joint between the two always opens. A groove should be worked on the casement stiles as shown, and if the casements are fairly well made, they will be found quite watertight in all but the most exposed situations.

Returning the plaster round the inside reveals with a very small rounded angle in cement is a suitable finish for the interior, and the window board need not in this case be wider than the sill.

If the frame is used in a stucco-faced wall, the faces should be kept flush, and a rebate worked for the stucco as indicated on the plan by dotted lines.

AN AMERICAN "SLIPHEAD" WINDOW.

The illustration on the preceding page shows an American "sliphead" window, the name by which they are known in the South, where they are largely used. It is of Colonial type, set in a brick wall with a small iron balcony before it. The drawings being complete in themselves, no description is needed, but attention is directed to the hinged head, which is lifted by the sash when raised, and which falls again into position by its own weight when the sash is lowered.

CONSTRUCTION OF BELFAST ROOF TRUSSES.

BY J. W. OVEREND.

The form of truss commonly known as the Belfast type is being adopted throughout the country for various purposes, including temporary and permanent structures of all kinds, such as motor garages, mineral water works, galvanising sheds, etc. Being constructed of wood, they combine lightness with strength, also cheapness of construction. As a general rule, they are built up of red deal, although pitch pine is sometimes used for the sandwiched tie beams. The photograph shows a Belfast form of roof construction that is at present being erected for Messrs. W. F. Butterfield, of Shipley, Yorks., who are manufacturers of galvanised tanks, etc., and to whom the writer is indebted to use the photographs, and other particulars in connection with same. The building is for a new galvanising shop, and covers an area of 300ft. by 35ft. The clear span for the trusses is 32ft. The number of trusses used in the construction is 29, and a ½ truss is used at one end to serve a purpose in the building. The trusses are placed 10ft. centres apart. The sandwich tie beam is made up of two 9in. by 1½in. pieces of timber bolted together at suitable places; the struts or lacings are 3in. by 1in., while the curved rafters are made up of 4 pieces 2in. by 2in., sandwiched together in couples. The tie beams at one end rest on the wall of an adjoining building, being similar to the extension with the same form of roof, while at the other end they are carried on an 11in. by 4in. horizontal wood plate or lintel, which is halved together at various places throughout its length. The plate is supported by brick piers 14in. square, as shown in the photograph No. 1. The 14in. piers have their base on a sandstone template, or corbel stone, which is likewise supported by brick piers 2ft. square, which rise from the base. It will be noticed from the photograph, which gives a general view of underside of the trusses when fixed in position, that the stone template carries a steel rail for a traveller to run the length of the whole building. The trusses were made on the building site, being set out and built up on floor boards, forming a board laid on battens, on which were fixed pieces of wood to draw the pieces of wood to their curvilinear form by means of cramps. (See view No. 3.) The lacing pieces which form the herring-bone strutting in the trusses, are carried forward in order to make pockets for the purlins to rest in. In the centre of the roof is a long lantern light running the entire length of the building, this being formed by bolting posts to the trusses, being strengthened at the base by horizontal pieces from truss to truss. The lantern light is intended to be glazed on the system of Messrs. Mellows, of Sheffield. For the covering of the curved portion of the roof, 1in. tongued and grooved boards are used, these being double nailed to the purlins.

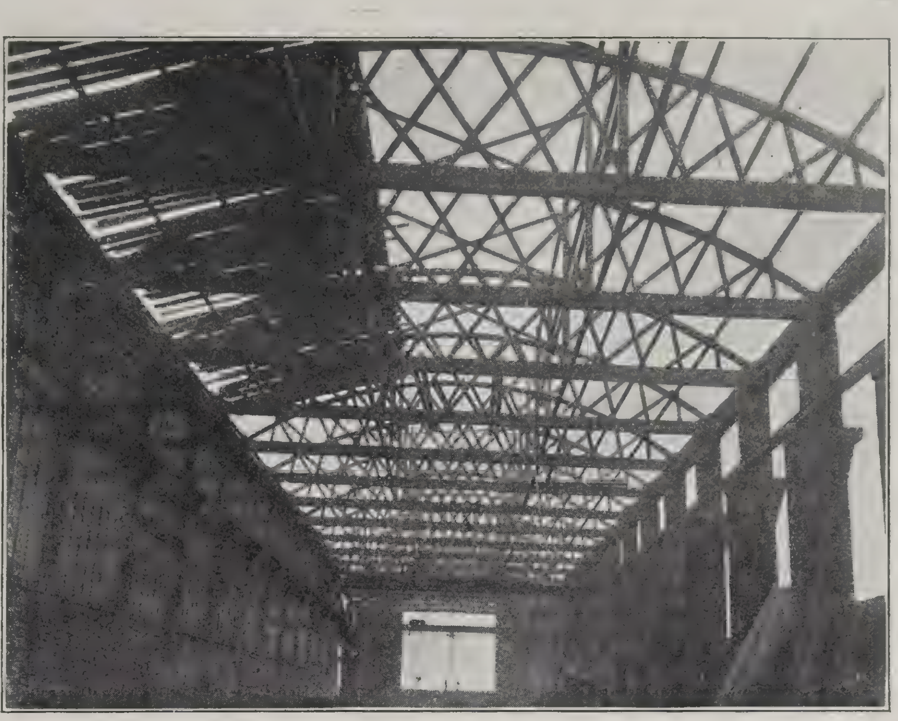


Fig. 1.

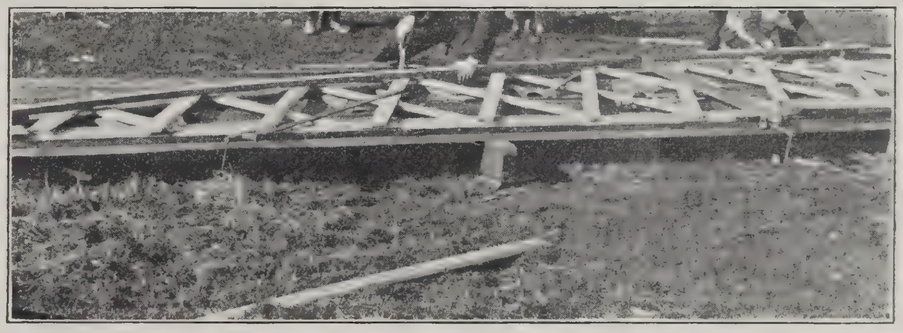


Fig. 2.

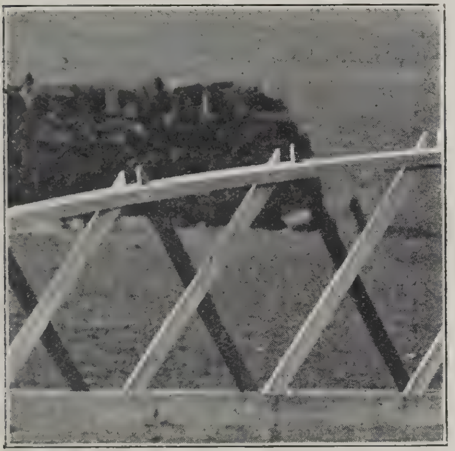


Fig. 4.

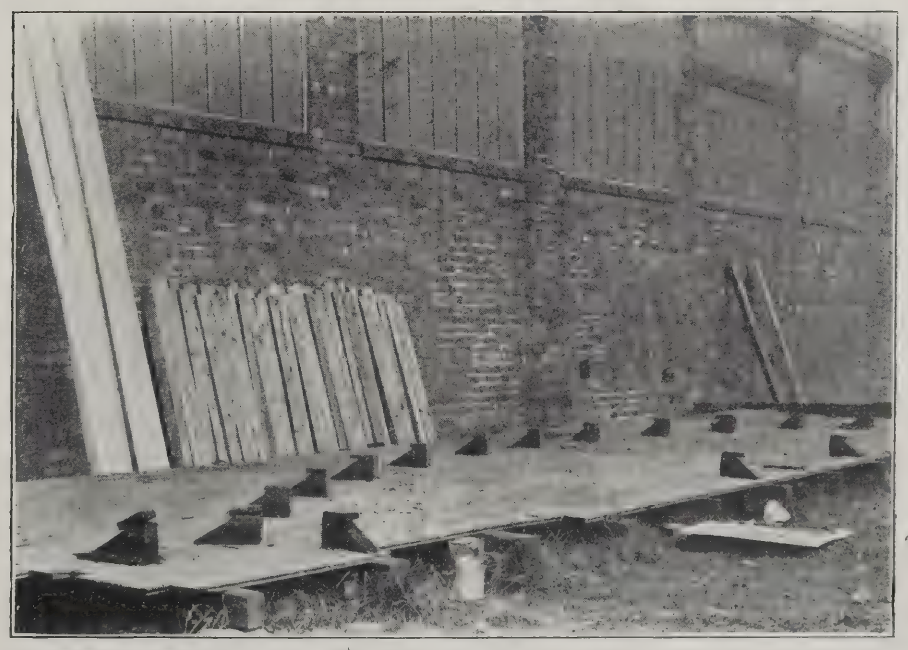


Fig. 3.

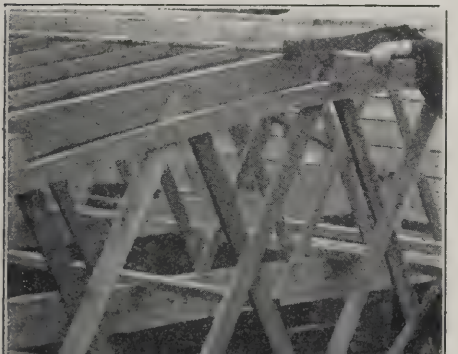


Fig. 5.

THE CONSTRUCTION OF BELFAST ROOF TRUSSES: VIEWS SHOWING SPANS IN POSITION AND IN COURSE OF ERECTION.

ENGLISH VERNACULAR DOMESTIC WORK.

III.—THE COMING OF THE ITALIAN INFLUENCE.

BY J. ALFRED GOTCH, F.R.I.B.A.

In the third of his series of lectures at University College, London, Mr. Gotch traced the gradual introduction of Italian influence into English work, and the manner in which England first "felt the touch" of the Renaissance.

ARCHITECTURE is not exempt from the universal law of change. No sooner has a given set of forms become established and been carried towards perfection than they are supplanted by a fresh set, which in their turn linger just long enough to impress their character on the period, and then give way to others. No sooner is one form grasped than it melts into something which may be equally rich, but is more or less new and strange.

The Dawn of English Architecture.

In England, this process of evolution continued uninterruptedly for four or five centuries—from the time when first we may be said to have possessed a national architecture down to the end of the fifteenth century. Each new growth sprang from something that was already there. We have watched this growth in the two former lectures. We have seen how the stern outlines and detail of the Norman barons gradually softened, how the round arch gave way to the pointed, and how the pointed arch became flattened from the acute to the obtuse.

The Last Phase of English Gothic.

The last phase of English Gothic architecture, before it became tinged with foreign detail, is of great interest, and presents many fine examples. Many of the Tudor houses, like Kirkby Muxloe and Compton Wynyates, were built of brick, with most of the wrought work in stone. The windows were still small, though fairly numerous. Their arches, as well as those of the doorways, were flat-pointed. The chimneys assumed an amazing richness, whether in stone or in brick. Tudor chimneys are, indeed, one of the most remarkable productions of English craftsmen.

Preparing for the Renaissance.

Chimneys (of which illustrations were shown on the screen—Gothic from Preston Plucknett, and Tudor from East Barsham) had in some instances twisted stalks, which were also adopted in stone finials, used either on gables or at intervals along a parapet. Tudor finials from "Gothic Architecture" (Batsford) were seen supporting vigorous heraldic beasts. The same kind of twisted pilaster is, or was, visible at Clifton Maubank, Dorset, part of which was removed to Montacute. The treatment seemed like a preparation for the Renaissance. This kind of detail is characteristic of Henry VII.'s time. With the accession of Henry VIII., the conditions which governed architectural evolution underwent an alteration. There came an outside influence to affect our English developments, and certain forms and features crept in which had their origin not in the severe grey atmosphere of England, but in the luxurious and sunny air of Italy. In other words, English architecture felt the touch of the Renaissance.

How Foreign Forms Crept In.

It is to the effects of this new influence that the lecturer desired to draw attention, as well as to the manner in which those foreign forms were received. We know that in course of time they established themselves firmly, and, invaders as they were, they ousted the natives of the land from their ancient fastnesses. But in the beginning their foothold was somewhat precarious. They effected a lodgment here and there, not all over the country—in this feature and in that, not over the whole structure. But fashion was in their favour, and gradually, but with increasing celerity, they spread hither and thither, to the exclusion of the ancient forms. The struggle went on through the whole of the sixteenth century, and well into the seventeenth.

Elizabethan Architecture.

At length, under the leadership of Inigo Jones, the invaders finally triumphed. But during the progress of the strife most pregnant effects resulted; and Elizabethan architecture, although it has been branded with many hard names, is one of the most interesting phases of the art which England can show; and although it is taunted with being of doubtful descent, yet, like Faulconbridge, it may boast of more vigour than if it had been truly bred.

Although Gothic was in a manner derived from Classic, yet, by the end of the fifteenth century, all conscious connection had long ceased, and the workers on Gothic buildings had no notion that there was any other way than their own of dealing with a building and of embellishing it with ornament. The Gothic style had become quite independent of the Classic, and was in many respects its antithesis. All its features were far more ductile.

Renaissance Based on Classic Methods.

Italy had always been the home of Classic architecture, and Gothic forms had hardly penetrated into the peninsula. Therefore, when in Italy the Great Awakening came, the great architects of the day naturally founded their splendid conceptions on Classic models. There were, of course, novel ways of treating the old features, and particularly was this the case with the ornamentation. Into it all the delicate fancy, the exquisite drawing, and the perfect execution which distinguish the work of the Renaissance in Italy were thrown. Its variety was considerable, its adaptability to different positions, and with differently shaped spaces, was extraordinary. Unlike the main lines of the revived Classic, this ornament was as ductile and as mobile as anything which Gothic design could show. It is important to bear this in mind, because in this pliability was found the common ground between the two styles.

England's Tardy Awakening.

Many of the masterpieces of the Renaissance in Italy were well advanced in years before English work could show the slightest trace of Italian influence. The influence of the Renaissance had dominated Italian work long before it found its way across France to our shores. It was our Henry VIII. who bridged the channel for its passage. His rival, Francis of France, having procured Italian artists to adorn his palaces, Henry could do no less. At first but few Italians of anything like the first rank responded to his invitation. The greatest of them was Torrigiano, who came over to fashion a tomb for Henry VII.

This was the means by which the foreign forms made their way to England. A great deal of Italian-looking work was done by English workmen, who do not always get the credit for it.

Italian Forms Adopted.

The lecturer then showed views illustrating how Italian forms crept into English design. These included a door in Genoa, whose pilasters had base, shaft, and cap, and in which the architrave, carved frieze, and cornice formed a frame for the round-headed door. Deene porch, and a wood door from Compton Wynyates, showed similar treatment. Certosa di Pavia details were then compared with those in a screen at King's College Chapel, Cambridge, and with choir stalls from Christchurch, Hants. Tombs from Santo Croce, Florence, in which the carved figures seem to be in motion, were followed by a tomb from Lowick Church (1420), in which the angels were "statuesque, motionless, elderly. Italian influence set the angels in motion, and introduced young angels—amorini." The amorini on the bench-ends from Christ Church were in motion. The detail of some ornamentation from Christ Church was seen to be very similar to the details of some Italian examples—vases, heads, ribbons, human figure branching into foliage.

Some Examples of the New Fashion.

Showing slides of Hampton Court, the lecturer recalled that it was in May, 1516, that Wolsey received the King and Queen in his new house. The entrance was all Gothic, with perhaps a slight touch of Italian in the arms over the gateway, and the roundels are actually Italian, by Giovanni da Maiano.

Ceilings from Mantua were compared with a ceiling from Wolsey's closet. The roof of the hall (1534-5) was Gothic in conception and in much of its detail, but, although Englishmen did the work, some of the ornament was of Italian character.

Another fine palace built by Henry VIII. was Nonsuch, near Cheam, on which he employed the most skilled workmen—nearly all foreigners—that he could procure. Other slides shown were: Entrance of Montacute; roof of porch, Cowdray (1537-43), the linen panelling from the Vyne (previous to 1530), from Magdalen College, Oxford (1541), and from Haddon Hall.

Layer Marney, Essex (1520-5) had the old traditional form of entrance, but showed Italian detail. Sutton Place, near Guildford (1573-5) was also shown, as well as Lacock Abbey, Dingley, and the north doorway from Apethorpe.

These examples, the lecturer said, would serve to show how fitful the next fashion was in its appearances. Its occurrence was confined to the southern and eastern portions of England. North of Oxford, and west of Cambridge, but little of it was to be seen.

The Opening of the Mall into Charing Cross.

At last week's meeting of the London County Council, it was agreed that in view of the improved traffic facilities which the new road through St. James's Park would give to London, the Council should proceed with the consideration of the necessary steps for opening up the access to Charing Cross; the Improvements Committee to bring up a report as early as possible on the whole subject, with the necessary recommendations.

MR. SIDNEY KITSON ON ARCHITECTURAL TOPICS.

In his presidential address at the opening general meeting of the Leeds and Yorkshire Architectural Society, on November 10th, Mr. Sidney D. Kitson, M.A., F.R.I.B.A., touched with a light but firm hand several of the most interesting architectural topics of the day. Below is given the greater part of his address, the few passages omitted being mainly of local interest.

I CAN imagine, even if I have not actually heard, the reply of a young architect on being asked to join our Society: "What good is the Society to me?" The commonplace truth that union is strength has been acted upon by all trades and professions, with the result that every trade is in a position to-day to assert its rights and to resist abuses to which, without that union, it would be a prey. Our Society is federated with the Royal Institute of British Architects, and thus forms a branch of the official guardian of the architect's interests in this country. The long controversy which has been waged round the question of Registration seems now to be dying down in the very general recognition of the fact that the legal registration of architects will be to the benefit of the profession, and also of the art which we practise. By loyal membership of our local Society the hands of the Institute are strengthened, and the time that must necessarily elapse before the goal is reached will be appreciably shortened.

Corporate unity will never supply the place of individual character and energy; but individual capacity cannot attain its full development in a position of isolation. Our Society affords opportunities for architects to know one another better. We can discuss our several difficulties, aspirations, and beliefs, and thus create a saner and healthier atmosphere than is to be obtained in an attitude of aloofness. Our lectures give us the opportunity—not always sufficiently appreciated—of hearing the opinions of experts upon the manifold aspects of our art. The Council watches carefully over the interests of all members, and endeavours to advance the position and prestige of the profession in the province which it serves. Such are some of the reasons why every young architect within our area should join the Society. Instead of his question, "What good is the Society to me?" he will ask himself, "What good am I to the Society?" and he will proceed to answer that question by unselfish personal service to the Society, thereby advancing the interests of the art he professes, and incidentally making himself a more useful member of the community.

Leeds and the Town Planning Act.

The Council of the Society has formed during the past year a Town-Planning Act Consultative Committee, with Mr. H. Ascough Chapman as its secretary. It is hoped that this committee will prove of value in the discussions of schemes which may from time to time be brought forward under this Act. The controversy which raged round the Act whilst it was still a Bill has now vanished, and friends and opponents alike are agreed in the endeavours to make the Act workable and efficacious. The best argument in favour of the Town-Planning Act which exists is our West Riding towns themselves, which, from industrial villages, "without form, and void," have been allowed to expand anyhow without thought of the future, or at any rate without the statutory power to make that thought operative.

A hundred and fifty years ago, the author of perhaps the finest poem of the eighteenth century, the "Elegy written in a Country Church Yard," wrote to a friend that, after a long and enthusiastic day spent at Kirkstall Abbey, "he lay that night in Leeds, a smoky, ugly, busy town." Gray's description still holds good. Leeds is still a smoky, and, therefore, an ugly town; and, so long as our buildings take upon themselves, within a year after erection, a permanent coating of dismal black, it is almost unreasonable that the public should be expected to pay for good architecture.

"Not Aggressively Polite."

An eminent London architect was written to some years ago by our then honorary secretary, the late Frank Bedford, to ask if he would lecture before our Society upon some architectural subject. His reply was in the negative, and he added, "What you require in Leeds is not architecture, but a hose-pipe." It must be admitted that his reply, without being aggressively polite, contained some germs of truth, and I firmly believe that our posterity a hundred years hence will shudder at our barbarity in enduring the atmosphere which we now endure, just as now we shudder at the barbarity of our ancestors who endured, or even enjoyed, cock-fighting, bull-baiting, and public executions. Putting on one side the loss of self-respect, and the general lowering of vitality which our atmosphere creates, we architects are specially interested in the mitigation of the smoke evil, for while it exists, buildings are spoilt, and colour is non-existent. That "grand, elemental passion of mankind for noble building" is rendered languid and inoperative. What is the remedy for the present state of affairs, and how long will it take that remedy to work its cure? Some people will tell you it can be cured by legislation, and the late Chairman of the West Riding County Council once advanced the delightful suggestion that all offending manufacturers should be obliged by law to reside for six months of the year next door to their works—and on the leeward side. But legislation has a habit of not curing the evils which it was framed to cure. The best remedy would seem to lie in the growing use of electric power; and those who are fostering this extension of electric power are doing a real service to the community. It is on its universal application to industry that many far-seeing men base their hopes for better atmospheric conditions in our manufacturing towns. The growth of a healthy public opinion is also doing something already. It is not necessary to abuse people or to irritate the average man by preaching at him in order to make him see that the West Riding of Yorkshire would be a more cheerful place to live in if the smoke nuisance were removed. For, happily, the arguments of the old "muck means money" school are not now regarded as being either humorous or even approximately true. There are too many examples in our midst of debilitated and joyless humanity, of stunted vegetation and disfigured buildings, to allow of the matter being treated in any but the most serious spirit. Under better atmospheric conditions, it would be a joy to people to live, instead of, as is too often the case at present, merely existing, or seizing the pardonable opportunity whenever it offers itself, to fly from the smoke and build elsewhere the houses of their choice.

The Art of Laying Out Cities.

There are many ways in which members of our Society can train themselves to think of the best means by which our City can develop itself on methodical, orderly, and coherent lines. The study of plans, contours, traffic, and tram routes; the tendency of the population to migrate towards certain localities; the suitability of certain districts for factories and works, are of the thousand and one items of local knowledge which go towards the making of a thorough understanding of the problems involved. Then, with the training of an architect at your back, you are in a better position than a member of any other profession to evolve orderly and dignified suggestions for your city's improvement.

There can be no better exercise for the architectural student than essays of this kind, no better employment for the leisure of the older architect. I wish the Corporation could be persuaded to inaugurate, say, two competitions—one for the best design for improving the central area of Leeds, the other for the lay-out and correlation of the suburbs. It would be money well spent, and the prize designs would form a basis upon which future improvements could be carried out.

The Royal Institute wisely seized upon a time when the imagination of the whole of Europe is alive to the matter of Town Planning to hold their International Congress, and the success of that Congress is now a matter of history. Moreover, the Royal Academy made the unexampled concession of opening its doors to an exhibition of plans, drawings, and models, illustrative of the art of Laying-out Cities.

A Larger Vision and a Wider Field.

All this is to the good. It demands of architects a wider vision, a larger field of achievement. But it is as well to remember that detail must not be forgotten in the newer outlook. The almost passionate study of detail during the Gothic Revival led to the renewed interest in craftsmanship, and to the due appreciation of the importance of material and texture in building, which is becoming more in evidence every day. We owe a great debt of gratitude to the Gothic revival, and the lessons learnt from it must not be forgotten if we are to take our place as leaders in the larger schemes of corporate planning and co-operative development which are in the air to-day.

The Popularisation of Architecture.

Half a century ago the Gothic revival was the motive force in architecture, the intimate study of detail was urged upon the student, and his highest duty. Ruskin had published in 1851 his "Stones of Venice," dealing with the capitals, the columns, the panels—not the buildings of Venice, much less the grouping of one building with another. The public mind has, however, been prepared by this study of detail to appreciate the wider aspect of the essential qualities of architecture, such as breadth, refinement, and scale. It has begun to see that an ornamented building is not always necessarily a "handsome" building, or an ornamented one always necessarily an ugly one. The public mind has also come to see that the right grouping of buildings is of elemental importance. The great strides made by photography in recent years in the adequate portrayal of buildings, and the well-shown and beautifully illustrated examples of old houses published in the architectural Press, have also had a great influence on public taste. The more human and rational theory of the development of historic styles in building has also done much towards the popularisation of the study of architecture. In the old days, when different styles were divided up into separate compartments like specimens in a museum, architecture was regarded as a kind of occult science to be avoided by the average person, who would have been glad to have known more about the house in which he lived or the church in which he worshipped, had that knowledge been made reasonably simple for him. Now that the principle of evolution has been applied to the history of architecture the tangle has unravelled itself, and the story is as simple as it is fascinating to the lay mind.

The public are therefore in a better position than formerly to appreciate good building, and to demand it from architects. Let us see to it that the supply is more than equal to the demand.

Last summer Mr. John Burns, in addressing some local authority, made use of the following words: "The more money you spend upon architects, the less you will have to spend upon the governors of gaols." I can imagine no truer or more weighty words, no words more in harmony with the sentiments of the members of our Society. I would like to see them written up in letters of gold in every council chamber in the West Riding.

I do not know how much money is being spent at the present time upon governors of gaols, but certainly not very much is being spent locally on architects. If the building trade has lifted itself slightly from the abyss into which it sank some years ago, there are many influences still at work to retard its upward progress. But I believe these influences are only temporary, and I have confidence that matters will right themselves in time.

Three Great Crises.

The building industry has been passing through a crisis in this country such as can only be compared with the three great waves of depression which have happened in our history, and they were all consequent upon political action. The first occurred in Henry VIII.'s reign, after the dissolution of the monasteries, and the consequent uncertainty of tenure in property. The second was caused by the Civil Wars in the middle of the seventeenth century, and the third was in the earlier years of the nineteenth century, as a result of the exhaustion which followed the wars with France, and of the political agitation which accompanied the Reform Bill. Yet in every case there followed a period of security when the building trade flourished, and political agitation was dormant. After the dissolution of the monasteries came, the age of Elizabeth with its splendid building achievements. After the Civil War came the age of Sir Christopher Wren. The latter part of the nineteenth century was a time of almost feverish building activity. The recent depression has undoubtedly been caused by the exhaustion of the country consequent upon the South African War, and by far-reaching and unsettling Acts of Parliament concerning property to which we have within the last few years been witnesses, but the effects of which no man can so far foresee.

Statutory Registration.

There is a matter of great importance for the furtherance of which I would urge you all, on behalf of the Royal Institute, to use your best endeavours with any of your friends to whom the case may be applicable. The admission of members of the newly created section of Licentiates at the Institute only remains open until March next. The Institute is making a businesslike and strenuous effort to include all bona-fide practitioners and assistants of experience within its ranks. It is to the interest of this Society, whose members are practically solid for statutory registration, to assist the Institute in every way it can in this matter. For, with its hands strengthened by the inclusion of these new members, the Institute can go forward with a coherent authority at its back to demand legal recognition for architects. Unless this demand is practically unanimous it is not likely that Parliament will accede to it.

A Higher Standard of Design.

Finally, I should like to offer, with very great diffidence, a few words of advice to our younger men and students. There exist at present amongst the younger members of our Society a seriousness of purpose and a standard of design which is worthy of all praise. I believe that in the future these qualities will bear good fruit for the benefit of the City. Whilst the energies of the nineteenth century were devoted to purely utilitarian progress, to sanitation, to water supply, to quick transit, and such like, now something more is demanded; some sense of dignity, orderliness, and civic beauty. It is to the architects that people will look to supply these qualities. Your equipment, therefore, must be comprehensive, and your training thorough.

Refuse to be influenced by every passing architectural fashion. It takes a lifetime thoroughly to master any one style of architecture; and since our modern architecture, like all the building of the past, must be based upon tradition, study, and absorb the spirit of the work of the past. Choose out some particular phase of it, and make yourself a master of that phase; so that when you are designing a building the setting will come as readily to your pencil as your native language comes to your lips when there is occasion for speech.

The buildings designed by men out of the fulness of their knowledge are the buildings which give the highest pleasure, and which will live by reason of their unconscious originality.

The Snare of Cheapness.

One warning; let me give you from practical experience a warning especially necessary to those who have to work for a public who love cheapness for its own sake. Don't try and make your buildings too cheap. As a great architect of the last century used to say, "People soon forget the expense of building, but bad work is always with them, and cheap work is nearly always bad."

MR. BURNS AND THE LIVERPOOL SCHOOL OF ARCHITECTURE.

When visiting Liverpool recently, to lay the foundation-stone of the new block of model dwellings which the Housing Committee is erecting in the Bevington Street area, at an estimated cost of £102,000, Mr. John Burns, President of the Local Government Board, took occasion to attend a reception held in his honour at Liberty Buildings, by the Department of Civic Design in the School of Architecture. Here he delivered an address on town planning. He said he did not know who was the architect of Liberty Buildings—formerly the Bluecoat Hospital of Liverpool—but he was sure he had fallen under the influence of Wren, and had visited Hampton Court. Having expressed a high sense of the influence exercised by beautiful buildings on a community, and ascribed much of the soundness and justice of English law to the fact that its students had been trained in the classic schools of Eton, Harrow, and Winchester, and amid the fine collegiate architecture of Oxford and Cambridge, he went on to warn town planners against being content with beautiful buildings and wide thoroughfares. He pointed out that the comparatively low mortality of England and Wales was due to the fact that the average number of persons in a house ranged between 5 and 7, while in the more outwardly lovely cities of Paris and Vienna the number of persons per house ranged from 30 to 60, or even 70. He strongly advised municipal authorities to secure ample spaces at the backs of houses, and laid stress on the desirability of securing a high standard of domestic architecture in conjunction with more of the geniality of social life, which was characteristic of many Continental towns. The Town Planning Act was a rampart, behind whose protection social reformers could safely, as well as beneficently, assail the pockets of the ratepayers. He was delighted that the University of Liverpool was associated with the Act, and expressed the indebtedness of the School to Mr. W. H. Lever, at the same time congratulating Professor Reilly and Professor Adshead on the environment of themselves and their pupils.

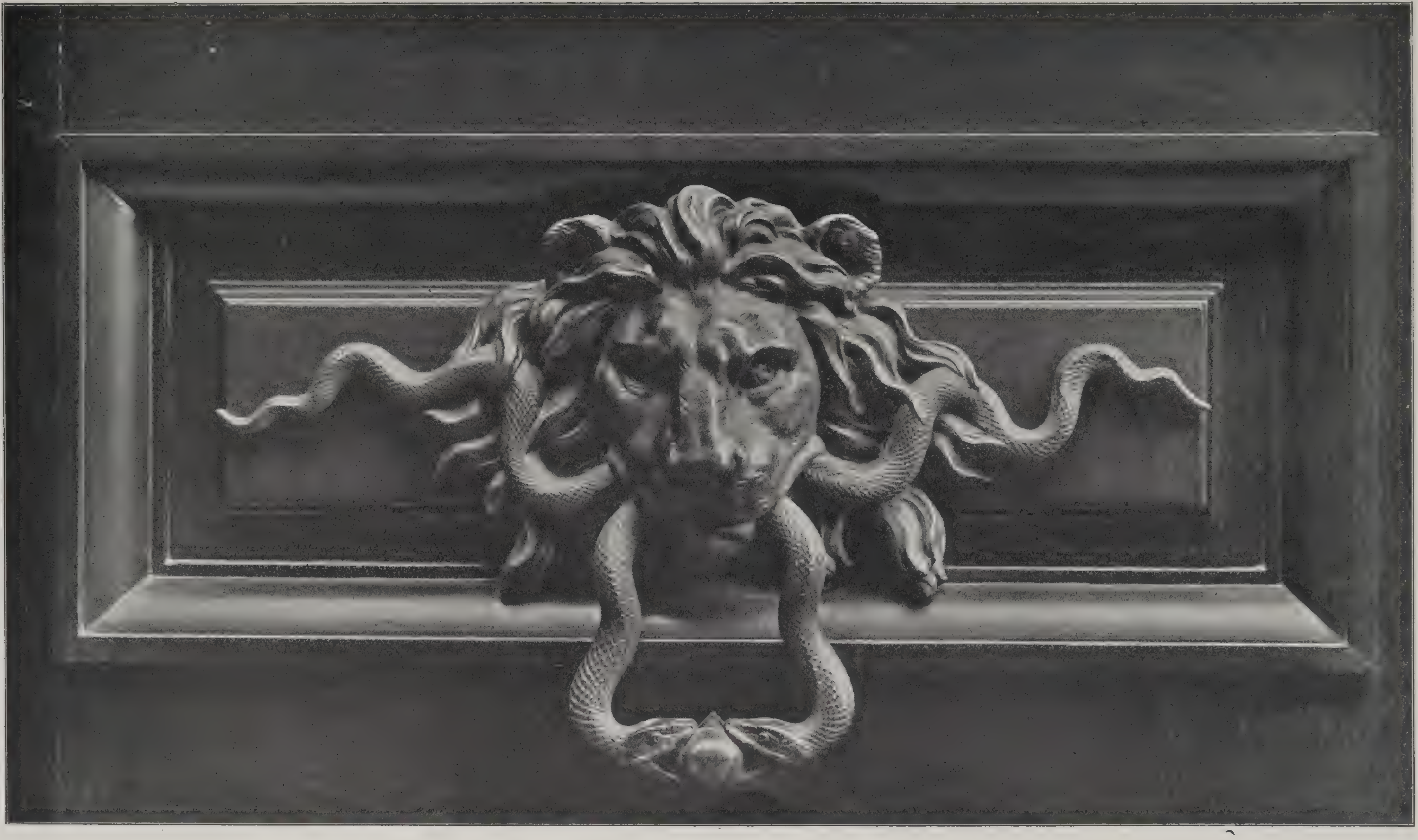
The Students' "Address."

A vote of thanks having been passed, the students of architecture and civic design entered in procession, and presented to Mr. Burns a huge document entitled an "address," embellished with cartoons, and trailing a "seal" about a foot in diameter. This set forth certain curious virtues, such as the capacity to understand "Form IV.," humorously ascribed to Mr. Burns, and with mock gravity deplored his "uncontrollable aptitude for work." It also congratulated him on the achievement of having been photographed between Lord Lansdowne and Mr. F. E. Smith.

Mr. Burns accepted the address with the compliment that it was one of the few practical jokes he had ever seen carried out artistically. He jocularly warned the students against excess of modesty in the young. "Modesty was only meant for those who had no beauty," and he saw before him a group of good-looking students (here his immediate audience bowed low and wept), whose future he hoped would be brilliantly successful.

The Captain: Right turn, gentlemen, single file, march.

Mr. Burns (adroitly correcting the command): No; "Form Four," quick march.



BRONZE KNOCKER, RUE DU FAUBOURG ST. HONORÉ, PARIS.

Lions' heads have been more commonly adapted for door knockers than perhaps anything else, but as a rule they are lacking in proportion and in vigour. This knocker, however, has no such faults, being a very fine example of its kind. It is a replica of those on the old Hôtel des Monnaies (Eighteenth century). The outside dimensions of the panel are 2 ft. 10 ins. by 1 ft. 2 ins.

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SOCIETY OF ARCHITECTS.

PRESIDENT'S ADDRESS.

Mr. George E. Bond, J.P., delivered his presidential address on November 17, touching on several topics of current interest. Having expressed his appreciation of the honour conferred upon him by electing him President for the third consecutive year, Mr. Bond congratulated the members upon the continued success of the Society. The record of the past year shows a steady rate of progress, for forty-three members, two hon. members, and forty-five students have been elected since the last annual meeting, and but for the extreme care exercised by the Practice Committee in examining into the credentials and professional qualifications of candidates, the list of ordinary members would have been increased by a much larger percentage. The additions of the names of Sir Edward Brabrook, President of the Society of Antiquaries, and of Sir William Van Hulsteyn, M.L.A., of Johannesburg, to list of hon. members, would be a source of gratification to all members.

Reference was made to the loss sustained by the Society in the death of a Past-President, Mr. Robert Walker, of Cork, and by that of Mr. Mallett, a Past Member of the Council, and one of the Examiners. He also referred to the retirement from office of Mr. Ellis Marsland, hon. secretary, who with Mr. Mallett was a founder of the Society.

It was a source of gratification, said Mr. Bond, that after twenty-six years they were able to meet in a self-contained home of their own: one conveniently situated for those who arrive either by railway, tube, or 'bus, and one providing every accommodation necessary to meet present needs and to provide for further extension to meet all reasonable requirements in the future.

"A new situation has arisen with regard to Registration, and, although it may appear incredible, it has been seriously suggested that in the name of unity, the Society ought to cease its existence as a distinct organisation, and this at a time when its position is stronger than at any previous moment in its history, when it is increasing its membership more rapidly than ever before, and when it has added enormously to its responsibilities by the acquisition of new premises; and that after twenty-six years of strenuous propagandist work in favour of registration we should hand over the fruits of our labours to a body which has always opposed our efforts, and which, I submit, quite unjustifiably claims the right to dominate the interests of the profession generally."

"And what," Mr. Bond asked, "is to be our reward? It is suggested that we shall forfeit our present position as corporate members of an important, influential, and constantly growing Society, sink our individual self-respect, and voluntarily degrade ourselves by entering the ranks of another body, through the only door which its unwisdom has left open, that is to say as members of an inferior grade, paying a smaller subscription than its other members, and in the management of which body we shall have neither voice nor vote. We are invited to do this solely in order that the profession may appear to speak with a unanimous voice in asking Parliament to pass a half-hearted Registration Bill, a Bill which in my opinion will add to rather than decrease the difficulties of our practice; for upon all questions of professional etiquette, and recommendations and advice with regard to professional practice and every other point except Registration, the Society has always supported the Royal Institute to the utmost of its power, and will continue to do so, proving that unity of action can be attained without fusion."

The greatest obstruction in the way of progress, he said, is the selfish individualism of the successful architect. It has required a quarter of a century of propagandist work even partially to break it down, and as each man naturally desires to reach the highest possible level of success, it inevitably follows that within their special spheres every man is his brother practitioner's competitor. What is one man's gain is considered a loss by the other; there is apparently no community of interests, and their local relationships have, at best, been but a condition of armed neutrality. To the working of the individualistic spirit may be attributed the fact that practically one-third of the practitioners in the United Kingdom are not attached to any professional organisation, and, further, we may safely assume that of those who are members of one body or another not more than thirty per cent. are actuated by any sincere desire to promote the interests of their respective associations. They neither trouble themselves to vote for the election of Officers or Council, nor in some instances do they loyally fall in with recommendations of the Council to abstain from competing under unfair conditions, but they pay their annual subscriptions solely for the purpose of being able to affix some proportion of the alphabet to their names, and to increase their apparent importance in the eyes of an indiscriminating public.

MR. G. E. BOND, J.P.

President of the Society of Architects.

It was very necessary to teach architects that such conditions are deplorable, and that under them the general well-being of the profession is being steadily undermined; that abuses of all kinds are growing practically unchecked, that competition drawings are invited and freely submitted subject to unfair conditions, and that two-thirds of the less important works throughout the country are being carried out by other than recognised architects, to the detriment of both architects and clients, all because members of the profession have not seen fit to combine for the protection of their general interests.

"Everything, therefore, which tends to unite members of our profession by the bonds of social intercourse, common aims and sympathy, must necessarily be of immense value in promoting the ultimate benefit of architects and of architecture. The policy of the Society of Architects is founded on this basis."

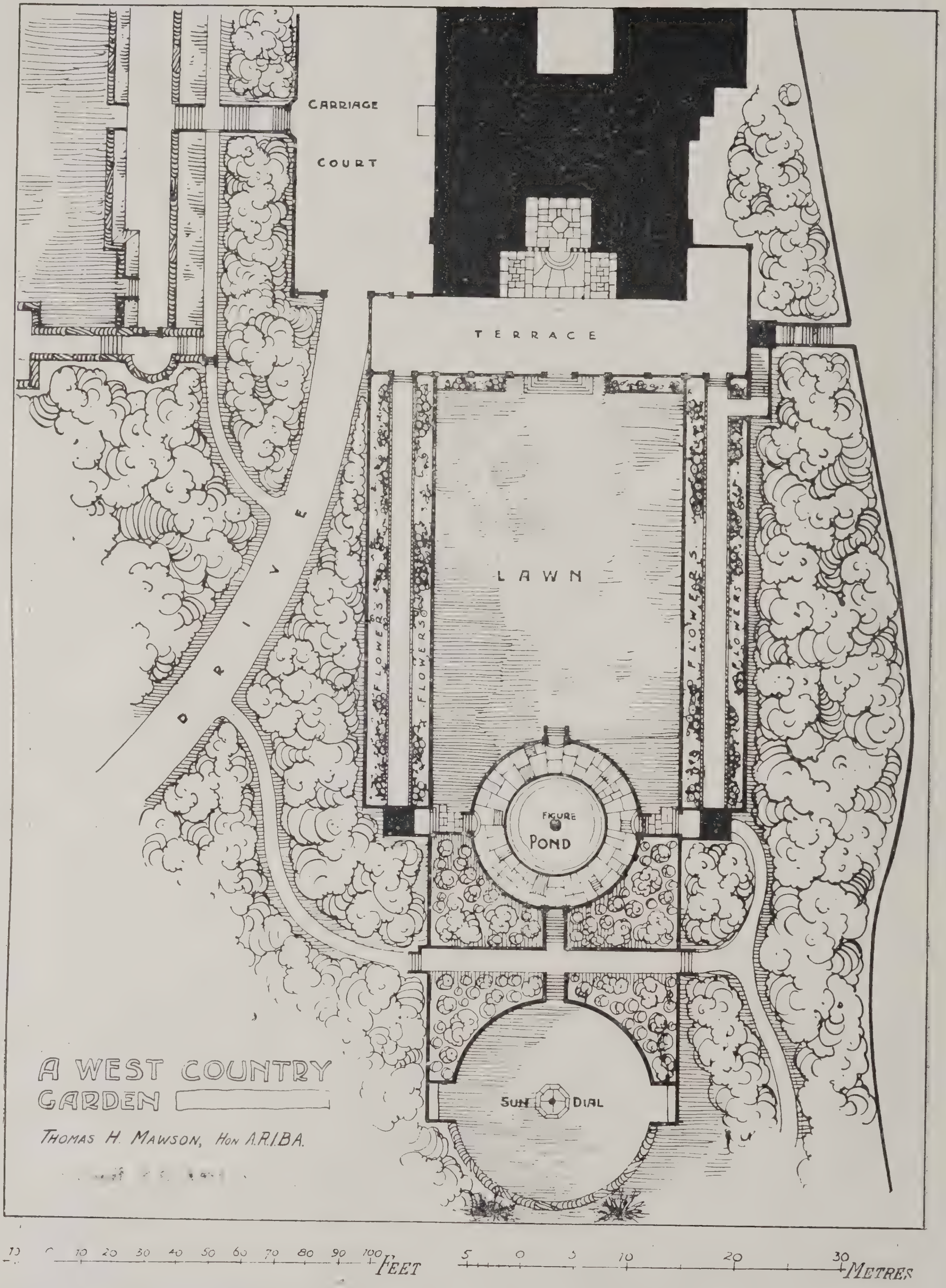
Having reviewed at considerable length the proposals of the Registration Bill, which Mr. Bond characterised as being "utterly futile" from his Society's point of view, he said that a Bill, no matter by whom it may be promoted, has not the slightest chance of success in Parliament if opposed by any considerable section of the profession, and he believed that the vast majority of architects, both within and without the Institute's ranks, are in agreement as to the necessity for universal compulsory Registration. He ventured, therefore, once more to invite the leaders in the profession to reconsider the situation.

The new premises of the Society of Architects, at 28, Bedford Square, W.C., were opened on Wednesday, November 16, the occasion being marked by a conversazione. Among the guests were: Mr. Leonard Stokes, President R.I.B.A.; Mr. George Hubbard; Mr. A. W. S. Cross; Mr. Ian MacAlister, Secretary, R.I.B.A.; Col. Leslie; Alderman Davies; Mr. G. A. T. Middleton; Mr. E. J. Partridge; Mr. A. E. Pridmore; Mr. E. J. Ladgrove, and Mr. Percy B. Tubbs. During the course of the evening an excellent musical programme was rendered.

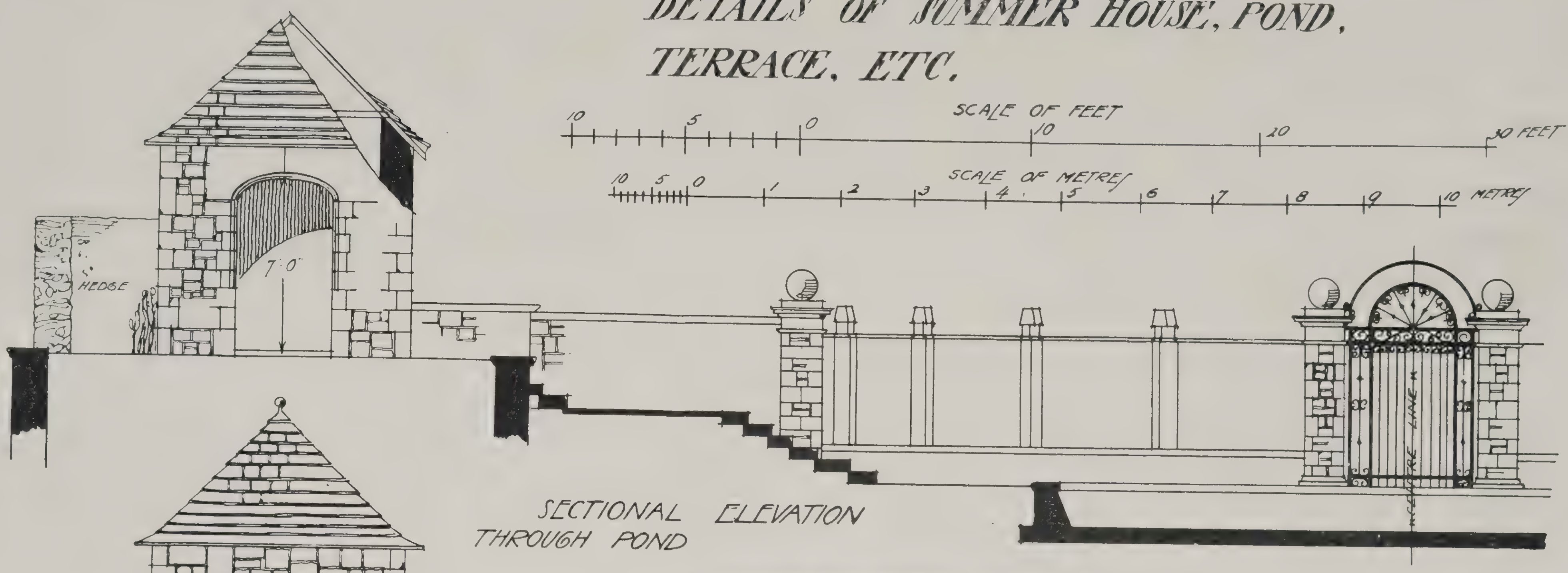
The Society's new home necessitated various structural alterations being made, these having been carried out by Messrs. Dove Bros., Limited, at a contract price of £1,975, under the direction of Mr. Fitzroy Doll, F.R.I.B.A. The house is of the "Adam" period, and provides in the basement a library and housekeeper's apartments, in addition to the usual offices. On the ground floor, and to the right of the entrance hall, are the offices of the secretary and staff, that of the former containing a fine old marble mantelpiece. To the rear is the committee room, and provision for future extension, the proposal being to erect a lecture hall. The first floor, which may be reached by the main or the secondary staircase, comprises two large rooms divided by a sliding partition, that in the front being the members' common room, and that to the rear the council chamber. The front room contains a typical "Adam" ceiling, which has been largely reproduced in the council chamber.

The Cosmati Mosaic and Marble Workers.

An additional sessional paper of the Royal Institute of British Architects will be read by the Chevalier Professor C. Formilli at the meeting to be held at 9, Conduit Street, W., on Monday next, November 28, the subject being the Cosmati mosaic and marble workers who were called from Rome to Westminster Abbey to build and decorate the Shrine of Edward the Confessor, the tomb of Henry III., and other tombs, and to make the mosaic pavement before the altar, and in the sanctuary. There will be on view the same day in the galleries of the Royal Institute an exhibition of full-size coloured reproductions of the above works, executed under the direction of Professor Formilli, by order of the Italian Government for the forthcoming International Exhibition of Art to be held in Rome in 1911.



The site of this garden is in the midst of a grey granite tract, to accord with which all the built and exposed stonework, as well as the paving, is in irregular cleft "spider-web" blocks, pointed in cement. The work was carried out by local men and executed according to local traditions.


DETAILS OF SUMMER HOUSE, POND, TERRACE, ETC.
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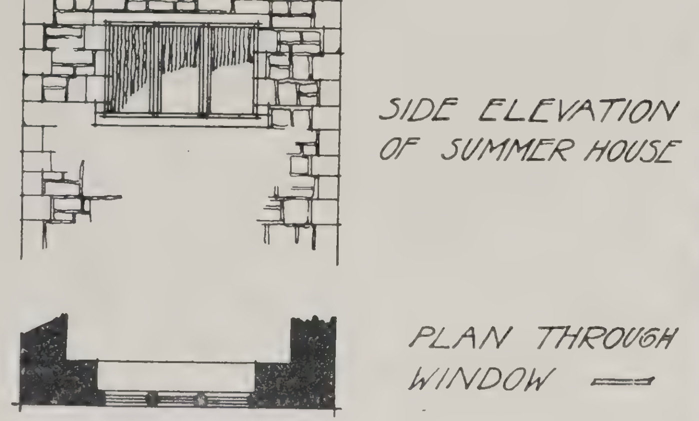
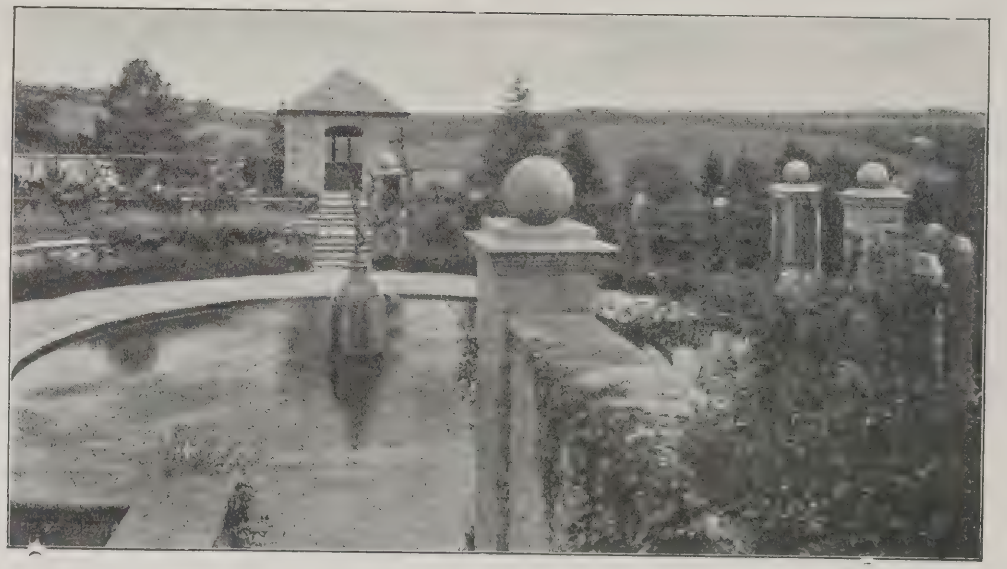




A "WEST COUNTRY" GARDEN. THOMAS H. MAWSON, HON. A.R.I.B.A., GARDEN ARCHITECT.

ARCHITECTURAL DRAUGHTSMANSHIP.

Mr. Gerald C. Horsley's proposition "That Fine Draughtsmanship Conduces to Fine Architecture," put before the meeting of the Architectural Association on November 14th, and printed in last week's issue, gave rise, as was generally anticipated, to a most interesting discussion, of which the substance is given below, the papers contributed by Mr. Ernest Newton and Mr. Halsey Ricardo being printed almost in extenso.

Mr. Halsey Ricardo Opposes.

MR. HALSEY RICARDO said: When my friend Mr. Horsley approached me on this subject, and in a winningly suggestive way intimated that I might, for the sake of discord and discussion, adopt the position of *advocatus diaboli*, and do my worst to traverse his positions, I was beguiled into accepting the charge.

I suppose that by "fine" draughtsmanship he would be alluding to that kind of drawing that has a tendency to be an end in itself—a tendency to construct a picture, not a workman's tool. But whilst he glances with an indulgent eye at this painter's ideal, he protects himself with so many sensible and unimpeachable safeguards to his academic position that it is difficult to know how to make any successful assault upon his eminence. To begin with, at the bottom we are agreed, an architect has got to express himself, and mainly by drawings, and, therefore, he must know how to draw, and how to draw with facility. The divergence—if there is any—comes when we attempt to define how far such education in drawing should be carried. To draw with facility means a long apprenticeship in a severe school of accurate notation which enables you to use your pencil and your pen as the final tentacle of your brain, with the swiftness of thought. The pencil is but the extension of your fingers, which are but the prolongation of your arm, which is the channel through which the nerve movement courses from the brain, and the action of the pencil should be as automatic, in a sense, as the bat in the hand of the cricketer, or the gun in the hand of the sportsman. Because, mind you, it's the placing of the cricket ball, or the mortal wounding of the animal, that is the real end. It doesn't matter if the bat handle is sprung, or the blow came from the extreme end of it, so long as the ball goes where you mean to place it outside the boundary—so it doesn't matter whether you are using ball cartridge or powder and shot, or whether your powder is smokeless or cloudy—the hitting your mark is the real thing, and hitting it decisively. Consequently, I demur to the quotation from Ruskin about "the instantaneous line"—as not being apposite: his definition that "it is in the perfection and precision of the instantaneous line . . . that delicate and ceaseless expression of refined truth which is carried out to the last touch and shadow of a touch, and which makes every hair's breadth of importance, and every gradation full of meaning" applies to the case where the line is the end in itself. With the architect the building is the end, and his drawing is but one of the many tools requisite to achieve that end. "His real business," Mr. Horsley says, "is to be master builder, and his chief function in that high office is to be a man of ideas." Quite incontestable. But not, I think, what follows, "those ideas must be worked into terms of building, not on the scaffold, but at the drawing board." It depends a good deal on the construction we put upon the word "worked." Of course, a great deal of contriving and explanatory work must be done at the drawing board, but the ideas (as Mr. Horsley has rightly said) are a brain concept, "thought out and mentally corrected before ever it is laid out in material form on paper." And the value of these ideas depends on the more or less perfect response they make to the conditions of life they have to answer, and to the qualities and limitations of the materials that have to be used. And for this, the mind does not require draughtsmanship—but observation and memory. You think of the forms you are going to use, and you afterwards draw them out in order to convey to someone else what is in your mind; and, also, since the matter is too complex, and the external conditions too many to be carried accurately in the mind, there is a need for setting them out on paper, and studying the different values of these conditions, and so finally reaching that delicate equilibrium that one calls a design. But all this while you are thinking in three dimensions, and the pencil is merely registering your thoughts as they take shape. Directly the pencil begins to suggest or dictate the shape, it is usurpation, and disastrous usurpation, since the pencil's function is to be recorder only—not inspirer. As soon as the eye—and the mind behind it—begins to dwell on the decorative or artistic appearance of the lines put on paper, it is beginning to drift off into side issues. Down this mistaken road stand the examples of picturesque buildings—and that sterile accumulation of "paper" architecture—that architecture that is corroded with considerations that appear only on paper—not in real life.

I am not, of course, condoning slovenly or inaccurate draughtsmanship—it cannot be too careful and too exact, and I am ready to allow some slight idiosyncrasies in the practice of it, like as I am always touched by the beautiful sounding and considerate embellishment of the joiner's plane. One should be able to take a pride in one's drawing, having turned out a thoroughly workmanlike affair—but it is not to be a picture. So again—in sketching a diagram—to explain some piece of planning or construction to the workman, one wants practical facility to show the essentials of the problem, and to put the ingredients of it in the clearest way. The art of choosing the point of view, and displaying just those parts, and just those connections, which the builder really wants to know, is not an easy one, and the answer to his difficulties must be seen first, before ever it can be drawn; and one sees it, as the artizan sees it, with tool and material in one's mind's hand, and one goes through the process of solving the problem in the way that one wishes him to follow, and the drawing should put this before him unmistakably clearly.

Such diagrams as we find used by Professor Willis, Viollet-le-Duc, and Choisy are admirable illustrations of what I mean. In this way, we may manage to convey to the workman's mind "the very spirit and heart of the design," and the more diagrams of this kind that we make, the better. They clear the air, force us to dwell on the muscular anatomy and bones of our buildings, and so give them that physical structure that causes the finished surface to look like a human being, sensitive and alive.

The joiner's plane, in a humble way, is a work of art; its shape is due to much practice, to much trial, to much affectionate handling, and the outcome is a beautiful tool. But its function is not to look well on the shelf, or graceful upon the plank; the accurately smooth board is its justification, and the easier and the swifter it does its work the more its praise, and the more its value to the joiner.

Sketches—besides constructing this facility of hand and teaching one what to represent as vital, and what to omit as merely accessory—are an unrivalled means of imprinting on one's memory such architectural composition as may have interested us—no photograph has the same power, nor the same personal selection: but I am inclined to advocate that soon after the sketch has been made it should be destroyed; its work is done; if it hasn't made the lasting impression that was expected, the reasons for its failure are sufficiently adequate. About measured drawings it is quite a different matter. These should be made, not for oneself only, although the analytical knowledge of construction obtained in making them is a splendid education, but as adding to the general stock of trustworthy records concerning things that can never be replaced and are surely getting destroyed.

The devotion necessary to sympathetically portray the subject chosen gets a kind of sanctification when you reflect that you are working also on behalf of all lovers of architecture, of art, and of history, that by your careful delineation you are constructing a simply invaluable record, accessible to all students, and it may be eventually the one trace left of all that you thought so charming. And with this aim before you, this ideal of portrayal, the hand will be always holding the pencil in check: it is easier to be suggestive than to be downright: to mark down mere matters of fact rather than what one might fancy may have been the intentions of the builders. The very limitations and imperfections (other than those resulting from the ravages of time, weather, and man's destructiveness), the unabashed contrivances, are all so much history, the key to which is in the stone themselves. Nay, history itself, without these monuments as exponents, can only be imperfectly read and understood.

Mr. Horsley affirms "that history and past experience show that the best architects have generally been admirable and first-rate draughtsmen." Well, statistics on this head are idle, and Mr. Horsley very prudently shelters himself behind an inserted "generally" in his pronouncement. We must consult our own experience, and our own retrospect of history. In England the architect is not discernible as such until the days of Inigo Jones, and there are no scraps of his handiwork to enable us to form an opinion as to his draughtsmanship. Such architectural studies as can be examined of Leonardo da Vinci, Michelangelo, and Sir Christopher Wren might have been drawn by anybody—me, in fact. The two former were, of course, unrivalled in their powers of draughtsmanship, but they didn't spend it conspicuously on their architectural drawings; it is noticeable, in Michelangelo's and Raphael's case, what a lot of shorthand (so to speak) they used; they couldn't spare the time to indicate more than the three divisions of the entablature, for example, or the mere bell and abacus of the cap, that was to be floridly composite when carved.

Coming to my own time, I may say that the two masters to whom I was successively apprenticed were neither of them "fine draughtsmen" in the usual sense of the word, though they had draughtsmanship enough to make their intentions perfectly intelligible; and the most individual and romantic architect of our time—Mr. Butterfield—was, to judge by his notebooks, no great hand as a draughtsman, and worked, so far as his working drawings were concerned, through other men's fingers. That one's drawings should give us pleasure in the working is no more than right—done con amore they will probably be more explanatory than those regarded as so much taskwork—and in these days of photographic reproductions, facsimiles, not copies, of the originals reach the workmen's hands. One likes to see a clean, tidy, straightforward drawing, free from affectation and easily legible, just as one likes to see the big jack plane in the carpenter's hands; but there may be many opinions as to how tidiness, legibility, and straightforwardness should show itself, and to some extent in these chaotic days each individual must be something of a law unto himself. We might, I think, with advantage extend some of the canons of conventional representation, and by building up a tradition on some accepted uniformity, as, for instance, in colouring, so make our drawings more universally and more quickly intelligible.

Mr. Ernest Newton Moderates.

Mr. Ernest Newton wrote: Though agreeing in the main with all that Mr. Horsley says as to the merit of clear, accurate draughtsmanship, I think that the great value of fine drawing is as training to the eye and the mind. To many students in their early days, architecture is rather a dry study of brick bond, and beams and girders—with occasional excursions into the higher regions of the "Orders." They have a vague feeling that some day they will know how to do everything, but they are altogether indefinite as to how this knowledge is to come—how and when they will have the power of selection, discrimination, and criticism. Careful and systematic drawing would be a sheet anchor to them. The growing sense of mastery of a difficult art would give them confidence, while at the same time developing powers of discrimination and criticism which would be invaluable later on. Careful sketching of old buildings would be a delight instead of a task, and the road to efficiency would be made shorter and infinitely pleasanter. Slovenly draughtsmanship generally goes with slovenly thinking. Of course there is always the danger that a good draughtsman will fall in love with his drawing, that he will forget that he is designing a building, and not making a picture, but one or two little lapses of this kind will be enough to cure him of this bad habit—*after the building has been constructed*—and with this danger guarded against it may, I think, be accepted as true that anyone making a beautiful drawing of a building he is designing will take so much pleasure in it that his mind will act in harmony with his hand.

There is no rule without its exception, and it is quite possible—indeed, we know it is the case—that the very efforts which an inexpert draughtsman has to make to put his ideas on paper lead him to concentrate so much on the *building* he has in his mind, that in spite of the handicap of weak draughtsmanship, his buildings will not be inferior to those of his more expert brethren.

The untrained draughtsman is like a one-armed golfer. We often hear of these one-armed men making wonderful scores, but that is no reason why we should cut off one of our own arms—most men can play better with two!

Again, an architect who is a well-trained draughtsman has an inexhaustible capital, and can go about the world with the quiet confidence of the man who in other walks of life counts, as his great asset, a large balance at his bank.

Other Views.

Mr. C. S. Spooner disagreed with Sir William Richmond that the artist who could delineate the human form could design a cathedral; and he instanced modern pictures in support of the contention. The thirteenth century men, he continued, although inferior draughtsmen, produced fine work in sculpture and in architecture. Could it be said that Butterfield and Bodley were fine draughtsmen? He thought not; but none could deny the fine quality of their architecture. Great facility in drawing, he thought, led to tricks and affectations. It was said that Burne Jones drew with difficulty to the end of his days, but he had always produced fine work.

Mr. C. F. A. Voysey said he, with Mr. Ricardo, came to bury Cæsar, not to praise him. Referring to Mr. Horsley's preference for something finer than a mere diagram as an additional stimulus to clients, Mr. Voysey said that as clients were usually of uncultured tastes, the less they understood drawings the better. The workman, not the client, was the individual to be considered, and to whom the greatest sympathy should be extended. Not having sketched or measured, he thought he might say that measuring and sketching produced dull architecture—the "shirtfront" style of architecture called Renaissance. Probably Sir William Richmond's remark with regard to the human form applied to the sculpture on the British Medical Building in the Strand, which it was quite distressing to pass.

Mr. Stanley Hamp was personally of the opinion that architects should be good draughtsmen, although not necessarily good painters. The architect should be able to express himself clearly. If architects were artists, they had to produce their work in an artistic way. Given the power of fine draughtsmanship, the architecture produced by a man would be much better than if he lacked that power of expression.

Mr. F. L. Dale drew an analogy between architecture and literature, and said it would be as reasonable to say that fine penmanship contributed to fine literature. If one desired to become a Robert Louis Stevenson, go to Pitman's and learn typewriting. He thought that the finest architecture of the past was produced with the minimum of drawings and no fine draughtsmanship.

Mr. A. G. R. Mackenzie said that the only thing necessary in architectural draughtsmanship was accuracy in showing shadows, etc., otherwise it was a snare and a deception.

Mr. A. Hall thought that the secret of drawing existed in whether one had anything to say or not. He had recently shown a plan to a distinguished architect, who said that it should be worked upon for three months with charcoal. The speaker proceeded to emphasise this "shaping" stage in the production of a drawing. He would like very much to know, he continued, the point where mere drawing ceased and fine draughtsmanship began.

Mr. Curtis Green observed that drawing was a means to an end. It was of inestimable value to the student as a stimulus to enthusiasm, and as a process in attaining full development. If they sent drawings not carefully done to the joiners' shop, they would inevitably react upon the man; but better work would result from beautifully executed drawings. Fine architecture was very difficult to define. Referring to one of Professor Lethaby's village churches, the speaker said a drawing could not possibly express the intentions of the designer. A friend had said, probably with a great deal of truth, that Gothic was unpopular because it was so difficult to draw.

Mr. J. D. Crace said that there were still in existence a number of Wren's drawings which would not pass muster in a present-day architectural competition. He believed that in no competition had better drawings been prepared than those for the new Admiralty buildings; but he would not care to put them in the scale with Wren's work. It should be borne in mind that the architect in acquiring draughtsmanship added considerably to his personal pleasure. The proposition which they had before them, however, could not hold water. Fine draughtsmanship was an excellent thing, but it did not necessarily contribute to fine architecture.

Mr. John Markham emphasised the point raised by Mr. Hall, and said that if the good draughtsmanship commenced to operate too soon, it set the standard of the architecture at an immature stage.

Mr. H. Cox thought that nobody was against good draughtsmanship. The term "the Mistress Art" was, he thought, however, indicative of domination. The architect should rather be regarded as a controller of craftsmen, as he undoubtedly was in mediæval times. The Renaissance movement had produced "facial" architecture chiefly because of the lack of co-operation between architect and craftsman: and harm had been done to the architect, who was largely displaced by the engineer. The introduction of reinforced concrete was a particular instance, and drew attention to the necessity for keeping pace with the times.

Mr. Theodore Fife said that when he looked at a drawing by one of the great masters, such as Bramante, he realised that it was only a means to an end, being simply a fine diagram. The proposition, he thought, should rather have been that fine draughtsmanship contributed to the appreciation of fine architecture. If they admitted "shirt-front" architecture, they must also admit the academic delineation. He would like to see fewer sketches and more completed thought.

Mr. Leonard Elkington said draughtsmanship should act as a sort of crucible where the gems of architectural thought might crystallise. It needed to be ready, apt, and correct. They were told not to cast pearls before swine; but they very often had to put sketches before assessors. Drawings, it should be remembered, had very probably to be translated by one not so well informed as the architect.

Mr. J. E. Nield thought the proposition should have been that quick draughtsmanship contributed to fine architecture. Being able to draw rapidly enabled one to depict the thought before it fled. Perhaps this was what Ruskin meant by the "instantaneous line."

Mr. D. A. Forster supported the view that drawings should be such as workmen could understand.

Mr. Arthur Keen did not agree with the desirability of rapid draughtsmanship in view of the danger of producing more rapidly on paper than in the mind. Michelangelo was a fine draughtsman, but he did not use his skill in architecture to any considerable extent. Philip Webb was a superb draughtsman, and he (Mr. Keen) did not think Webb could have designed and carried out work to the extent that he did without being a fine draughtsman.

Mr. Gerald Horsley said he would like to know who made the Admiralty drawings. It was impossible to be in the office of Mr. Shaw without feeling what a great part draughtsmanship played therein. Mr. Ricardo disbelieved that the finest architects had been fine artists. He thought he (Mr. Ricardo) was quite wrong, and in support of his contention referred to the fourteenth century drawings of Cologne Cathedral, mounted on vellum, which were lifelike and beautiful. Among the names of architects mentioned who were also fine draughtsmen were Michelangelo, San Gallo, Palladio, in Italy, and in England, Wren, Inigo Jones, George Dance, junior, Elmes, Cockerell, and in more recent times, Street, Nesfield, and Shaw.

The proposition, upon being put to the meeting, was lost, 28 voting in favour to 31 against.

LEGAL CASES.

Indemnity of Sub-contractors.

At Liverpool Assizes last week the case of *Gerrard v. Tanner* came before Mr. Justice Scrutton. This was an action for indemity under agreement brought by Messrs. J. Gerrard and Sons, a firm of building contractors, against Messrs. J. Tanner and Sons, sub-contractors of London and Manchester, the case arising out of additions which were made to the Liverpool Consumption Hospital in 1903, the contractors for which were Messrs. Gerrard and Sons, the defendants having been employed as sub-contractors by the plaintiffs to do the plastering and ceiling work. An agreement was entered into between the parties by the terms of which Messrs. Tanner and Sons undertook to indemnify Messrs. Gerrard against any claims that might be made against them either by common law or under the then Workmen's Compensation Act for damages in respect to any injuries sustained by Messrs. Tanner's workmen. There were no claims in connection with that work. No further business transactions were entered into between the parties until this year, when the defendants again undertook a sub-contract from Messrs. Gerrard in connection with work at the Holborn Town Hall. One of Messrs. Tanner's workmen was injured, and a claim was settled for £120. No fresh agreement of indemnity was entered into between the parties, and his Lordship was now asked to decide whether the old agreement still applied.—Mr. Sanderson, K.C., for defendants, strongly argued that the old agreement could not apply, inasmuch as since it was entered into a new Workmen's Compensation Act had come into force which very greatly increased the liabilities of employers towards their working men.—His Lordship held that the agreement meant what it said, and gave judgment for the plaintiffs, but held that as the defendants had raised the points involving questions of fact upon which evidence had been called, and on which the defendants had failed, plaintiffs must be paid the costs of the issues on fact. His Lordship afterwards expressed the opinion that the £120 for which the claim had been settled was a reasonable amount.

New Point in Workmen's Compensation.

A new point with regard to workmen's compensation came before His Honour Judge Mulligan, K.C., at the Norwich County Court last week in the case of Scarles Brothers and W. Royal Cooke. This was an application for the redemption of 13s. 9d. per week payable to the workman for personal injury. The point raised concerned paragraph 17 of the first schedule to the Act, which states that where any weekly payment has been continued for not less than six months the liability therefor may, on application by or on behalf of the employer, be redeemed by the payment of a lump sum of such amount (1) as, where the incapacity is permanent, would . . . purchase an annuity for the workman equal to 75 per cent. of the annual value of the weekly payment, or (2) as in any other case may be settled by arbitration under the Act. His Honour, as reported in the "Times," held, when the case was argued on October 18, that the facts brought it under part (2), and settled the lump sum at £250, and gave the workman costs on scale C. The Registrar raised the question whether the employer should be ordered to pay the £250 or have the option of paying that sum in discharge of the weekly payments. His Honour now said he could not find any stage in the proceedings under this paragraph at which the words "may be redeemed" were to be translated into "must be redeemed." There was no statutory obligation to redeem The order would be that upon payment by the employer of £250, and the costs within a month, the liability for the weekly payments should be redeemed, and cease. If the employer failed to make the payments within the time stipulated, his application should stand dismissed, with costs, to be paid to the workman.

NEW MUNICIPAL WORKS.

The Local Government Board has just held inquiries into proposed expenditure by public bodies as follows:—Water Supply.—Milford Haven Urban District Council, £2,500; Gower Rural District Council, £1,300.

Sewerage, drainage, and sewage disposal works and plant.—Barnoldswick Urban District Council, £1,308; Yeovil Rural District Council, £1,300; Bromsgrove Rural District Council, £4,250; Axminster Rural District Council, no amount stated; Trowbridge Urban District Council, £5,750; Handforth Urban District Council, £9,600; Cannock Rural District Council, £1,960.

Street improvements, etc.—Wood Green Urban District Council, £1,670; Croydon Borough Council, £17,548; Skipton Borough Council, £1,300; Roylsden Urban District Council, £1,469; Southgate Urban District Council, £18,025 (inquiry to be held on November 28).

Various.—Leigh-on-Sea Urban District Council, £6,919 for gas undertaking; Heckmondwike Urban District Council, £24,159 for electric lighting, and £2,107 for public baths.

NORTHERN ARCHITECTURAL ASSOCIATION.

Mr. H. C. Charlewood, F.R.I.B.A., in his presidential address to the Northern Architectural Association last week, devoted a large part of his remarks to the present position and future possibilities of Newcastle's buildings and streets.

Newcastle is still without a town hall worthy of a town of such importance, said the president, and the subject has ceased to be the burning question it was twenty years ago. The question, however, has lately come to the fore again, and it is to be hoped that something may be done as soon as trade prospects are brighter. "But if we cannot boast of a fine town hall in Newcastle, we have every reason to be proud of the buildings in our principal streets. Personally, I know of no other town in this country where one can find the same harmony of design, and I think it is very much to be desired that the spirit of Dobson, our first president, and his contemporaries should be carried on in our modern buildings."

Mr. Charlewood had some interesting remarks to make upon the vacant site in Westgate Road generally known as Cross House site. "It must, I think, be obvious to all," he said, "that the attenuated end which lies in front of the Assembly Rooms should be added to the public space, just where room is often needed at the many public functions that take place there; but this portion, which comprises about 250 square yards, is the very part which is to be built upon first, and before long I suppose we shall see a lofty building standing up by itself and blocking out the view of the Assembly Rooms to a considerable extent, a building of which we have no reason to be ashamed. And I should like to point out that the frontage of the new buildings facing Grainger Street will be some 19 feet nearer to it than that of the old Cross House, which was not built up to the boundary. It is some consolation to know that the designing of the new buildings is in good hands. I may say that the matter was brought before the council of our Association, and, acting upon their instructions, I wrote to the Town Clerk, calling his attention to the great improvement which could be effected by the setting back of the building line, so as to clear the Assembly Rooms altogether, and suggesting that the matter should be brought before the Town Planning Committee. The reply was that the land had been sold already, and I suppose there was no getting over the fact, but had the question been brought up some ten years ago, when Westgate Road was widened at this point, it would have added comparatively little to the great outlay then expended, and would have effected a permanent improvement at an important point in our city. Many people have gone so far as to wish to have the whole of the triangle thrown into the public space, and planted out with trees and adorned with sculpture; but much as I should like to see such a scheme carried out, I feel that the price to be paid for it would hardly justify the outlay."

Commenting on town-planning, the president said that depressing streets with rows and rows of suburban houses all in one ugly pattern and built right up to the flagged pavement, unrelieved by the slightest projection, would soon be things of the past. They would be replaced by houses arranged in interesting groups or in squares with a central garden or green. "It is refreshing to learn that the Newcastle Corporation will promote a comprehensive Bill next session providing, amongst other matters, for regulating the layout of garden streets, for regulating the height of buildings, and for regulating the erection of advertising hoardings, and the placing of advertisements on gable ends, including the restriction of advertising hoardings to the line of building in any street. If they succeed in getting their Bill passed, they will deserve the thanks of all who are interested in the beauty of our town. Nothing could be more hideous than the effect of gables covered with advertisements, and anything that will have the effect of keeping advertisement hoardings within bounds will be hailed with joy by the majority."

Mr. Charlewood welcomed the signs of improvement in the building trades, but regretted that owing to the exceedingly heavy taxation imposed by the party in power, enterprise had been to some extent paralysed, and those buildings which depend upon funds raised by public subscriptions would have to wait until those who were regarded as the wealthier classes had a little more to spare for the benefit of the community at large.

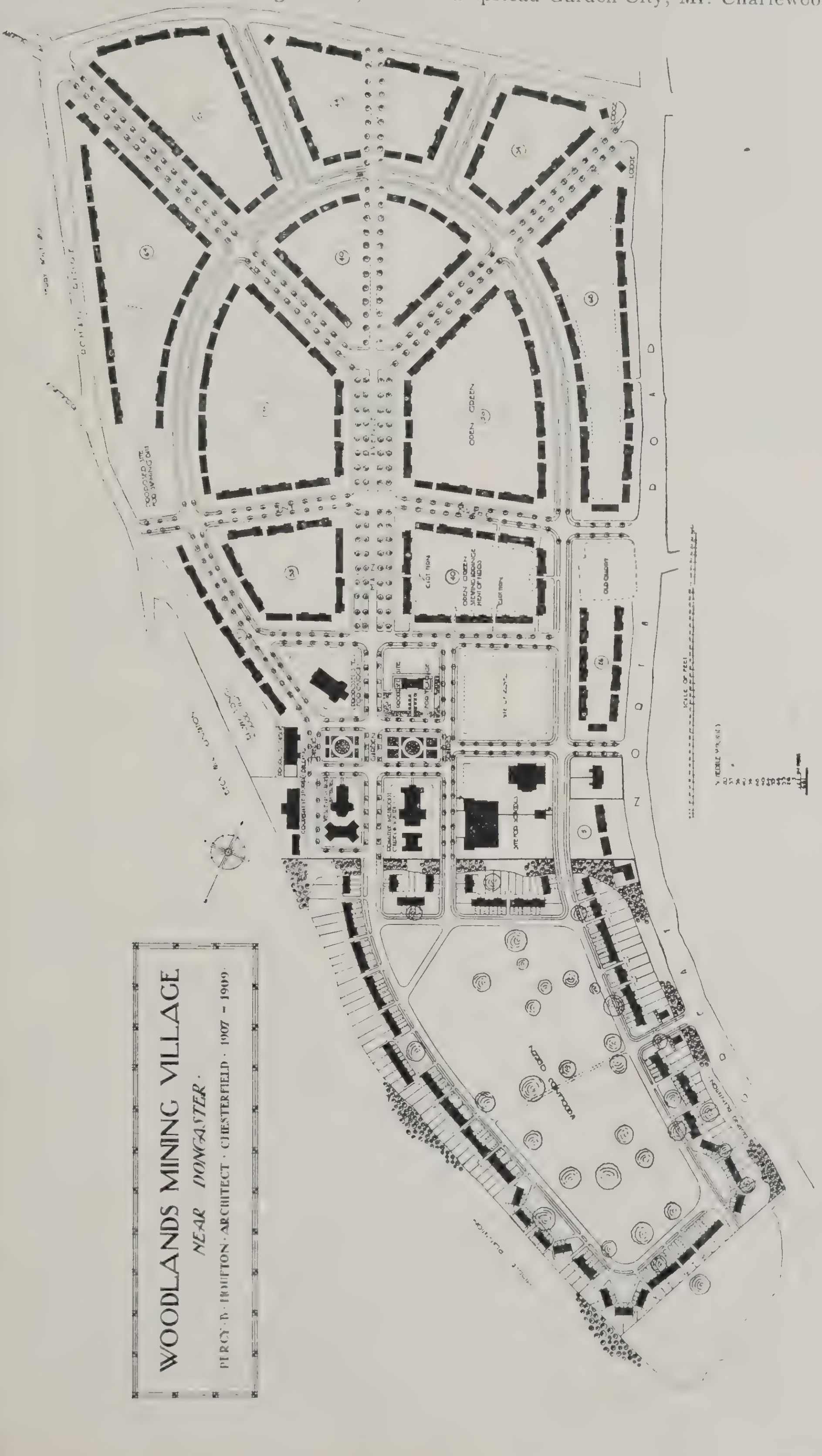
The influx of work into our leading shipyards, he added, must have its influence upon architecture and the building trades before long; and when one saw the number of dwelling-houses that had been built lately at Gosforth, Fenham, or Monkseaton, one felt that there was already a tendency in the right direction.

After giving an account of a visit to Hampstead Garden City, Mr. Charlewood asked if something of a similar kind, only on a smaller scale, could not be attempted in one of the Newcastle suburbs, at Benwell or Scotswood, on the slope overlooking the Tyne and Derwent Valleys. There was very little chance of a great success at Walker Gate, owing to the uninteresting nature of the site, and in the preliminary competitions most of the houses had to be erected for the lowest possible figure, regardless to a great extent of either stability or permanency. "I think that the public are beginning to learn that it is better to pay more for a house in the first instance than to have to pay it, all and more, later on, in repairs and stronger fittings."

Addressing, in conclusion, the students present, Mr. Charlewood reminded them of the importance of being properly educated before they started in practice. "There is no longer any room for the 'slacker.' It is difficult enough for the industrious to find employment, and the difficulties which lie in the path of the architectural draughtsmen are likely to be increased rather than diminished as time goes on."

During the evening a most interesting set of designs by John Dobson for buildings in streets adjoining the Quayside and near the High Level Bridge were exhibited. A fine set of drawings made by Mr. Jos. Hill (the Glover Student of the Association) during his tour in Somersetshire were also on view.

As representing the Association, Mr. Joseph Oswald, F.R.I.B.A., was elected Representative Governor of the Armstrong College.



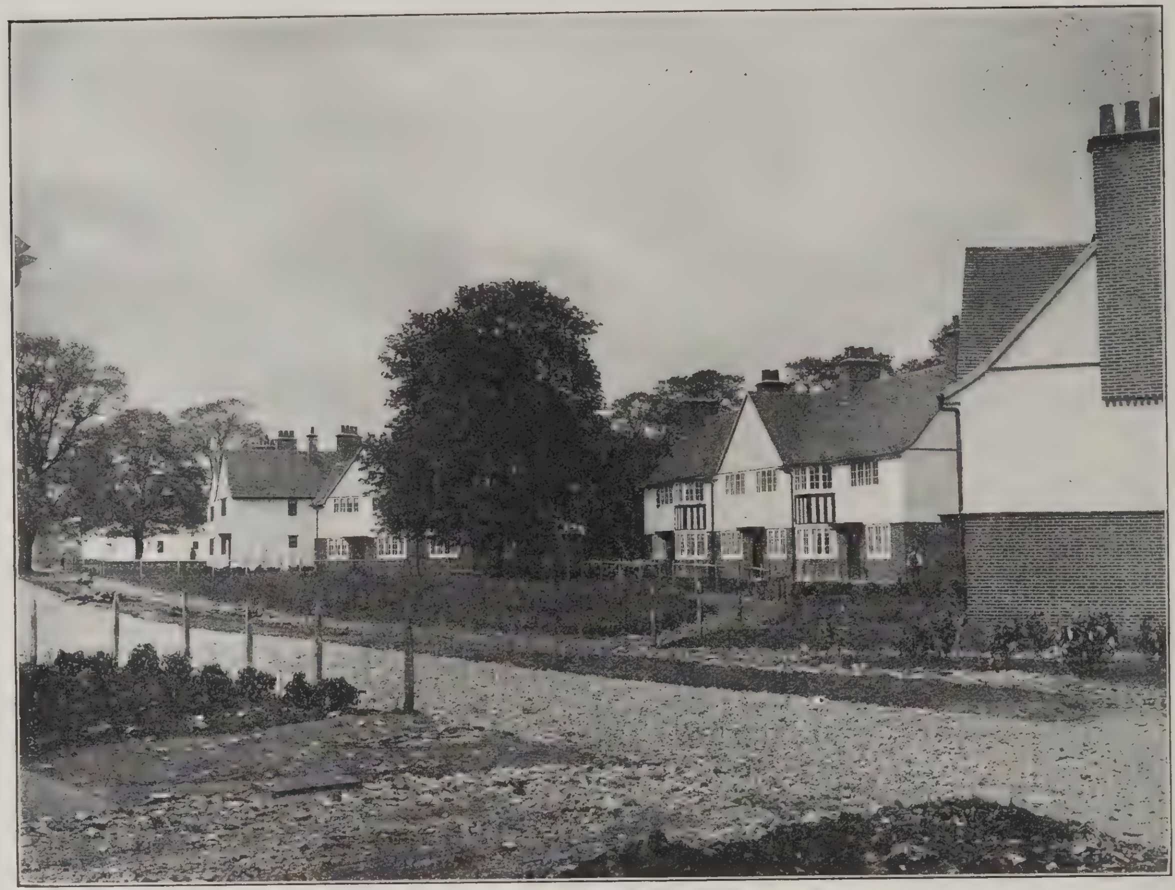
WOODLANDS MINING VILLAGE.

The creation of this village, laid out on modern lines, is due to the initiative of the Brodsworth Main Colliery Co., Ltd., and is the outcome of the development of a new portion of the South Yorkshire Coalfield. The Great North Road forms the eastern boundary of the village. This road is of a total width of 65ft., yet it was with difficulty, and some amount of coercion, that the local council were induced to approve plans for roads having a metalled width of 24ft., grass verges, and a double footpath, of a total width of 50ft., for the comparatively insignificant amount of wheeled traffic on the short roads of the new village.

The houses are of wide frontage, with an average breadth of 24ft. between the party walls. They are built in blocks of two, three, four, and five each, with spaces of about 10ft. between the blocks. In the park section (to the left of the plan reproduced on this page) they number five to the acre; elsewhere eight. The average leasehold rent is £1 per annum per house.

The best natural feature of the site was the existing park of twenty-four acres at the south-east end, with fine trees: surroundings which veil all appearance of newness. The houses in this part are built to face the roads, their backs overlooking large open spaces used as playgrounds. The increased width of the houses allows of improved interior arrangement in several respects. In the first place, it is possible to provide more variety in accommodation, and the types vary from a house with large living-room, scullery, and three bedrooms, to houses with parlour, kitchen, scullery, three bedrooms, and a fitted bathroom.

The architect for the scheme was Mr. Percy B. Houfton, of Chesterfield.



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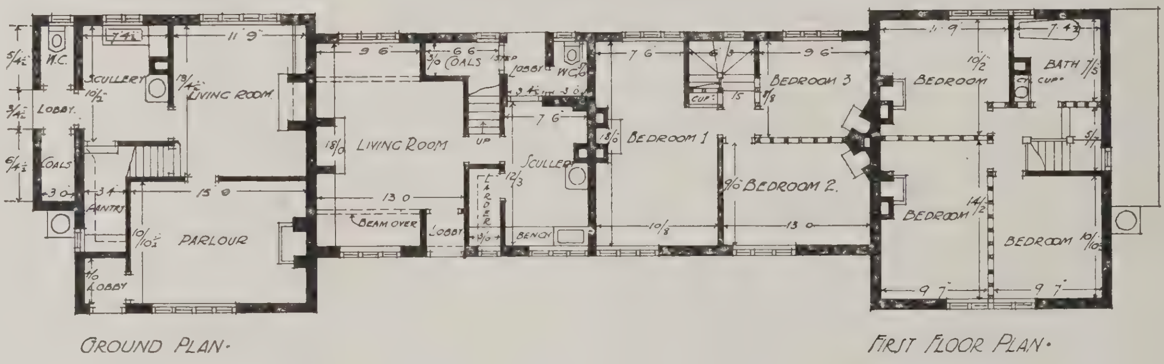

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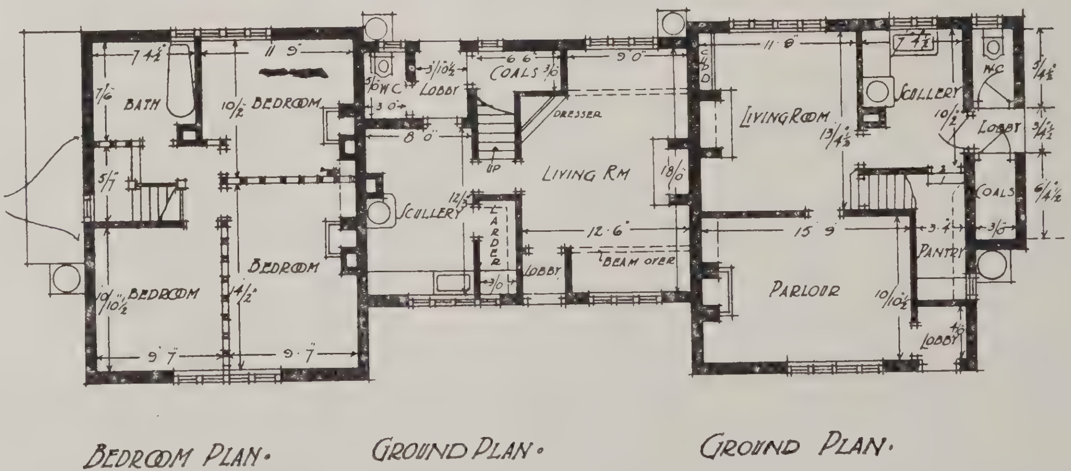

The photograph gives a fair indication of the general appearance of the village, and the two types of plans indicate the accommodation provided.

THE WOODLANDS MINING VILLAGE, NEAR DONCASTER. PERCY B. HOUFTON, ARCHITECT.

FIRE PREVENTION NOTES.

Cinematograph Theatres. A recent report of the Theatres and Music Halls Committee of the London County Council contains a useful indication of the council's requirements in such cases. The reference is to a proposed skating rink and cinematograph hall in Whitechapel, but most of the conditions imposed seem to be of general application. They are as follows: (i.) That the doors in the corridor leading to the dressing-room in the rink be made smoke proof; (ii.) that all doors off the promenades and exitways in the cinematograph hall and rink be hung to close automatically in the direction of exit; (iii.) that the entrance doors adjoining the cinematograph hall pay-box be hung in one leaf and arranged so as to open outwards; (iv.) that the stanchions in exitways on the floor of the rink and in the cinematograph hall be suitably defended; (v.) that the screens opposite the exitways be arranged to the satisfaction of the Council; (vi.) that the turnstiles at the entrances be arranged so as not to obstruct the exitway; (vii.) that the platform at the western end of the cinematograph hall be constructed of fire-resisting materials, and that the space thereunder be not adapted for storage purposes; (viii.) that the aperture in the front face of the cinematograph operating enclosure be reduced in size as much as practicable; (ix.) that the cinematograph operating chamber and rewinding room be efficiently ventilated direct to the outer air, that the doorway between these rooms be fitted with a self-closing fire-resisting door hung to open in the direction of the operating chamber, that a portion of the partition be glazed with clear fire-resisting glass, and that the Home Secretary's regulations be complied with; (x.) that if a motor generator be employed, an efficiently ventilated fire-resisting compartment be provided for the apparatus; (xi.) that the radiators, if any, be suitably recessed; (xii.) that the fire hydrant in the exit corridor to Gower's Walk be removed and be refixed in an approved position, and that the fire hydrants generally be provided with all necessary hose and fittings of the London Fire Brigade pattern; (xiii.) that the fittings in the skate-room and skate repair room be constructed of non-absorbent materials; (xiv.) that inflammable linings be not employed in the rink, and that any decorations required be made to adhere without cavities to the surface of the walls; (xv.) that the collapsible gates, with the exception of those in the entrance to the cinematograph hall, be not provided, and that if gates are necessary they be fitted with automatic bolts; (xvi.) that the lighting and ventilation of the dressing rooms be to the satisfaction of the Council; (xvii.) that the entrance to the water-closet on the first floor be suitably screened; (xviii.) that an exhaust fan be provided in connection with the air trunk in the roof over the cinematograph hall, and that adequate fresh-air inlets be provided; (xix.) that the urinal stalls be of the circular-backed pattern, and be provided with automatic flushing apparatus; (xx.) that the regulations of the Council as to lighting, heating, seating, notices, door fastenings, handrails, gas meter, recesses and projections, small fire appliances, and other matters of detail be complied with, and (xxi.) that the sanitary arrangements and the ventilation of the premises be to the satisfaction of the Council. These requirements have reference to a particular building, but they are nevertheless useful as a general indication of what is necessary to be done by way of reducing the fire-risks in a class of building that is just now becoming very common.

Fires in Old Country Houses. So many fires have occurred in old country houses the cause of which, in most cases, has not been ascertained, that the experience which a correspondent of the "Times" relates with respect to his own house is, we think, both interesting and instructive. A fire broke out about 8 p.m. in a chimney; luckily a mason and carpenter lived close by, and a hole was made in the chimney, when a beam of wood across a bend in the chimney was found in a blaze. This was sawn off, and the fire was subdued. Had this occurred in the night it is probable that the house would have been burnt down. Another chimney was found on fire in a room in which only logs of wood were burnt. On making a hole in the chimney, it was discovered that the flue went off at nearly right angles, leaving a large flat receptacle. This was full of soot and charcoal combined, forming a sort of clinker, which was in a blaze. Water had to be taken up to the roof in buckets and poured down the chimney-pot. Fortunately in this case also plenty of men were available. With the help of long poles, 21 scuttles full of *debris* were eventually taken out—the accumulation of very many years. The charcoal pointed out the danger of burning nothing but wood.

Woodwork Under the Hearth. In four rooms smoke was seen coming out by the hearthstone. On removing the stone, a wooden support was found in each case to be on fire. As regards the bends in the chimneys, they were comparatively safe in the days when boys were sent up to sweep them, as they could get into the recesses; but the rods of the present day cannot be got round some of the corners. As for the hearthstones, they also were comparatively safe when there were the old-fashioned grates with hobs, standing well above the floor; but where they had been replaced by grates placed a few inches above the floor the hearthstone gets red hot and in time sets on fire any wood beneath it. Access to the bends (seven in number) in the chimneys has now been provided by means of close-fitting iron doors, and the hearthstones, where necessary, have been properly set.

Prevention, or "Cureless Ruin." These revelations should have the effect of causing the proprietors of country-houses to have their buildings thoroughly overhauled under the supervision of a competent architect, who, in most cases, it may be imagined, would be able to detect, in all houses that cannot be called modern, and in some to which that description may be still applied, a surprising number of weak spots similar to those recounted above. In view of these disclosures, the hearths and flues will receive special attention; but the architect who is well versed in the peculiarities of construction of old houses will not confine his attention to the recklessly modernised ingle-nook; nor will he, if he is at all diplomatic, fail to convey, as tactfully as may be, the probably unwelcome argument that the expenses of giving effect to such precautions as seem desirable is as nothing compared with the irreparable loss that might easily be sustained through neglecting them. For this is not a case in which prevention is better than cure; as, in a fire of obscure origin, the venerable and priceless country-house is like to fall to "cureless ruin."

Problems for the Architect. With regard to the furnishing, fitting, and internal decoration of old country houses, one has a certain delicacy about recommending modern fire-prevention methods and materials. Certainly the flues and the hearths can be made safe without the least suspicion of incongruity; but the things that cannot be hidden, and yet could be made reasonably secure from attack by fire, will require a little more ingenuity of treatment in order to disguise the essentially modern character of nearly all the means of fire-prevention. Then, again, the architect who is called upon to advise as to means of escape, will often find himself confronted with a rather difficult problem. It is just here that his ingenuity will find abundant and perhaps congenial scope for exercise and development; and he will, of course, take care to inform himself of the available resources, and of the ways in which they have been similarly employed — if, indeed, there is not rather a dearth of really relevant examples. It is evident, however, that the occupants of country-houses are becoming increasingly aware of the dangers to which the treasures in their keeping, which, of course, they are anxious to transmit unharmed to posterity, are exposed when they are inadequately protected from the most remorselessly destructive of the "elements."

Fire-resisting Library Fittings. With regard to modern buildings, there is no need for hesitancy. It is, we hold, a primary duty of the architect to insist on the adoption of every possible means of minimising fire-risks, whether the building concerned be public or private. This course is, we are glad to note, being increasingly pursued. It is, for instance, becoming quite commonplace practice to specify metal fittings for libraries and similar places in which inflammable things like books or documents are stored or stacked in quantities. Even in such an establishment as Messrs. Caslon's new premises in Chiswell Street, where large quantities of metal type, packed in paper covers, are stored, the old wooden racks which were used in their eighteenth-century letter-foundry on the opposite side of the road have been superseded by iron racks, probably less with a view to preventing fire than with the object of economising space. It is the advantage of such fittings that they admirably serve both these very desirable purposes; and it seems safe to predict that within a very few years the wooden racks and fittings in libraries, warehouses, and similar buildings, will have become entirely obsolete. The superior immunity offered by metal-work, as well as the important consideration of space-saving, are too palpable to need emphasis; and the light and elegant designs that are now being produced, as well as the ingenious devices which make for convenience, are, together with the undeniable advantages in mere cleanliness, an almost irresistible inducement to their adoption.

L.C.C. DISTRICT SURVEYORS.

The Building Acts Committee, at the meeting of the London County Council on November 15, recommended the following appointments of District Surveyors:—Mr. Percy John Black, Battersea Central; Mr. Robert Henry Jewers Mayhew, Bromley St. Leonard; Mr. Baxter Greig, Deptford; Mr. George Tolley, Kensington, North, his resignation as district surveyor for Sydenham to be accepted as from 31st December, 1910; Mr. Richard Dominic Hansom, Kensington, South, his resignation as district surveyor for Catford to be accepted as from 31st December, 1910; Mr. Charles Archibald Daubney, Rotherhithe; Mr. Arthur George Morrice, Streatham, East; Mr. Henry Thomas Bromley, Wandsworth, East; Mr. Arthur Halcrow Verstage, Sydenham; Mr. Ernest Alexander Young, Catford.

In the same report the Committee stated that they had had under consideration the question of the powers and duties of district surveyors under the London Building Act, 1894, with regard to the Council's school buildings. Section 201 (5) of the Act provides that public buildings belonging to or occupied for public purposes by the City Corporation and the county councils of London and Middlesex shall be exempt from the provisions of Parts VI. (construction of buildings) and VII. (special and temporary buildings and wooden structures), and by section 5 (27) the expression "public building" is defined as meaning, *inter alia*, a school, college, or place of instruction (not being merely a dwelling-house so used). Part XIII. of the Act provides for notice to be given to the district surveyor of intention to carry out works, and for payment of fees to the district surveyor as set out in the third schedule of the Act. Counsel has advised that the Council's schools are public buildings used for public purposes within the meaning of section 201 (5), and as such are exempt from the provisions of Parts VI. and VII. of the Act, but the district surveyors are not prepared to accept that view or to agree to a reduced scale of fees such as the Council could be advised to pay. One of the metropolitan police magistrates has decided that the Council's school buildings are exempt from those parts of the Act, while another has taken the contrary view. Efforts have been made to have the question of exemption settled by the High Court, with the result that, while the Court gave no decision on this particular point, the Court pointed out that, even assuming that the Council's contention is right, such buildings would not be exempt from the provisions of Part XIII. It will be observed that the question is in a most unsatisfactory state of doubt, and the Committee have therefore come to the conclusion that the only really effective way of dealing with the matter is by legislation, which should remove the doubt, and also set at rest the questions as to the service of notice and payment of fees. If the district surveyors are in no way responsible for the supervision of the construction of the buildings, there seems no sufficient ground for giving them notice and paying fees, and, therefore, it is thought by the Committee that the legislation should also exempt the buildings from the provisions of Part XIII. of the Act of 1894, and consequentially also from the provisions of the London Building Acts (Amendment) Act, 1905, and the London County Council (General Powers) Act, 1909.

The Committee have also had under consideration the question of the fees payable to district surveyors in respect of additions to, or alterations, and other works in, completed buildings. The third schedule to the Act of 1894 provides that for the supervision of every such work the district surveyor shall be entitled to one-half of the fee charged in the case of a new building calculated upon the area of the old building, and in the case of public buildings, and buildings divided into separate sets of chambers or tenements by party structures this fee is increased by one-half. This frequently results in the fee payable being out of all proportion to the cost of the work or the amount of supervision entailed. Many complaints have been made by metropolitan borough councils, and others, on this subject, and the Council is urged to take steps to amend the law so that the fees payable may be more proportionate to the work done. It should be noted that district surveyors usually accept a reduced fee in such cases. The Committee think, however, that it would be better if the fees in such cases were based, for additions, on the area and height of the addition, with such part of the old building as is structurally affected (the fee to be paid being that provided in the third schedule for a new building of the same character, and of equal area and height), and for alterations, on the area and height of the particular portion of the building structurally affected (the fee to be paid being one-half of that payable for a new building of the same character, and of equal area and height). The principle of restricting the fee to the area and height structurally affected was adopted in Part IV. of the London County Council (General Powers) Act, 1909.

NEWS IN BRIEF.

New Offices for the Kent County Council.

The Kent County Council have decided to erect new county offices close to the Assize Courts at Maidstone, at an estimated cost of £50,000.

* * *

Rebuilding a Church Spire.

The spire of St. Mary's Church at Datchet was recently found to be in a dangerous condition, and it is now being taken down and will be rebuilt.

* * *

Royal Academy Winter Exhibition.

The forthcoming Winter Exhibition of the Royal Academy is to consist exclusively of works by W. P. Frith, J. M. Swan, Sir W. Q. Orchardson, and R. W. Macbeth, all of whom died this year.

* * *

New Drill Hall, Colwyn Bay.

A new drill hall and miniature rifle range for the 5th Battalion of the Royal Welsh Fusiliers is to be erected in Princes Drive, Colwyn Bay, from designs by Messrs. J. M. Porter and Elcock, architects, Colwyn Bay.

* * *

Proposed New Chemical Laboratory for University College.

A scheme for erecting a chemical laboratory for University College, at an estimated cost of £45,000, was outlined at the last meeting of the St. Pancras Borough Council, by Sir Edward Busk. The site is in Little Gower Place and Gower Place.

* * *

Alterations to Premises at Norwich.

The Austin Motor Co., Ltd., whose works are at Northfield, near Birmingham, have opened a depot at Nos. 18 and 22, Prince of Wales' Road, Norwich, where extensive structural alterations have been carried out by Messrs. J. Youngs and Son, builders, of Norwich, under the supervision of Mr. F. W. Skipper, architect and surveyor, 55, London Street, Norwich.

* * *

Reprint of the Inventory of Ancient Monuments of Hertfordshire.

The first edition of the Royal Commission's "Inventory of the Ancient and Historical Monuments of Hertfordshire" having been exhausted within a fortnight of its appearance, the Stationery Office have now issued a reprint.

* * *

New Buildings at Oxford.

New college buildings are now rapidly rising towards High Street, Oxford. The Brasenose buildings that commemorate the quadri centenary of that college are in a very fair way towards completion, and those of Oriel can be seen above the hoarding. The new buildings of the Union Society are also making rapid progress.

* * *

Classes for Firemen.

In compliance with a request from the Chief Officer of the Fire Brigade, evening classes for firemen in arithmetic, mensuration, and English, similar to those which were held in the session 1909-10 at the Headquarters of the Brigade in connection with the Orange Street Evening School (Southwark, West), have been arranged at seven local fire stations and connected with the nearest evening schools.

* * *

The G.W.R. New Goods Station at Lambeth.

During the past twelve months, by invitation of the Metropolitan Water Board, contractors have tipped millions of tons of waste material into the reservoirs at Battersea, which cover many acres. The site thus filled up was sold to the Great Western Railway Company, and hundreds of men are now busily engaged in preparing the foundations for the company's new South Lambeth goods station. When completed this railway depot will be the largest and best equipped in London.

* * *

World's Largest Electric Clock.

What is described as the largest electric clock in the world has been constructed for the tower of the Royal Liver Friendly Society's offices, now being built at Liverpool. The sections of one of the four dials are being assembled in the Trades Hall at Leicester, and sixty or seventy guests of the constructing firm, Messrs. Gent and Co., have been entertained to luncheon, with the clock forming the table. Some idea of the size of this table may be gathered from the fact that the diameter of each dial is twenty-five feet, the intervals between the minutes being 1ft. 2in., and the minute hands 14ft. long.

* * *

Alterations at Romano's.

A room in South Kensington, taken from the hunting-lodge of Henry IV. of France, supplies the origin of the scheme of decoration employed by the artists, Messrs. Dacre Adams and Robert Buxton, in the newly opened reception room at Romano's in the Strand. Both walls and ceiling are panelled and painted with flowers on a background of old English gold. Rare tapestries, upholsteries of Burgundy velvets, and replicas of old masterpieces supply the furnishing, while the fireplace, backed by a specimen of casting dated 1550, is a reproduction by Egmoneau, of Paris, and is taken from a house in Bruges built in 1480. There are old French chandeliers, fitted with electric lights, and a window leaded in a pattern of Tudor roses lends an additional air of antiquity to the room. A striking feature over the entrance door is a new shelter (by Messrs. H. H. Martyn and Co., of Cheltenham) depicting a number of cupids dancing round a glass dome.

* * *

A New Main Street for Coventry.

At a special meeting held last week, the Coventry City Council adopted a scheme for a new main thoroughfare, variously estimated to cost from £60,000 to £100,000.

* * *

The L.C.C. White Hart Lane Estate.

A Local Government Board inquiry has been held into an application by the London County Council for permission to sell 90 acres of their White Hart Lane Estate, Tottenham, and to apply the proceeds to the development of other land held by the Council.

* * *

Mural Decorations for Bridgwater House.

A talented Scotsman, Mr. Alexander Jamieson, has recently completed an important series of mural decorations for the Earl of Ellesmere's town residence, Bridgwater House. The paintings, executed on canvas, afterwards fixed to the wall spaces, are for the spandrels between the arched openings in the central hall, in which some amateur attempts were temporarily placed. These spaces, by no means unfortunately, were left vacant by Barry, who elsewhere worked out a florid Italian scheme. Mr. Alexander Jamieson, who is a member of the International Society and a regular contributor to the New English Art Club, the Goupil Gallery, Salon, and other shows, has against a greyish-black background represented, by means of figures treated in a large and simple way, Art, Poetry, Music, Drama, Truth, Joy, Love, Mercy, Grief, Power, Justice, and Fame.

* * *

Builders' Foremen's Association.

The seventeenth annual smoking concert of the Builders' Foremen's Association was held at the London Tavern on Saturday last, when Mr. Frederick Purton, of the Expanded Metal Co., Ltd., presided over a record gathering. Mr. Purton, who was very heartily received, said that the Association was established in 1894, and had, within the last six or seven years especially, made very rapid strides, the balance now in the hands of the treasurer being over £1,600. The Association was designed to include all general foremen in every branch of the building and allied trades. It was felt that while the men had their trade unions, and the employers their associations, the foremen had little means of coming together except through such a society as this, and it was essential that the foremen should be quite independent of the men's societies. The aims of the association were entirely in harmony with the interests of the employers, and during its existence nothing had ever occurred to cause friction between the members and the employers. Mr. Purton announced that he had been able to collect a sum of £35 as an addition to the pension fund of the association.

* * *

Motor Cars and a York Antiquity.

A proposal is being submitted to the York City Council for the destruction of one of the most interesting antiquities of York—the gateway in the wall of St. Mary's Abbey, near Bootham Bar, known as Queen Margaret's Arch. Not long ago a prominent member of the City Council expressed, it is alleged, the fervent and pious wish that a heavy motor-car would knock down the archway. At another time he advised the Council to pull down the ancient bit of masonry and re-erect it at right angles to its present position, taking the risk of the legality of such a proceeding. Commenting on this, the Yorkshire "Daily Observer" says: "The idea of re-erecting it in a position to make nonsense of it is a delightful example of the sort of thing from which York has suffered, and it is astonishing that a committee of the Corporation has been found to recommend the destruction of the gateway. The purpose is to make it easier for motor-cars to sweep into the open space by Bootham without checking speed."

PICTURE EXHIBITIONS.

Messrs. Dowdeswell's Gallery.

Pictures of "The Border Country," in oil and pastel, by the Hon. W. J. James, is a fine collection of small landscapes, showing much power both of composition and effect. Some of his sky effects are grand—notice especially "Eley Craig" and "the Rede at Elishaw"; and all the drawings are in a style representing the best English tradition of landscape painting. At the same gallery is a rather curious collection of small decorative pictures by Miss Edith Harwood, who seems to draw her inspiration from Botticelli; some of the drawings are in fact copies of Botticelli figures. In regard to the original subjects, though one does not care much to have what may be called Botticelli at second-hand, there are fine ideas in "The Temple of Imagination" and "The Limbo of Dead Ideas," and the style of these designs is such as, on a larger scale, would lend itself well to mural decoration.

The Fine Art Society.

The Fine Art Society has filled its two rooms with water-colours and etchings by Mr. Frank Brangwyn, executed in his usual broad and powerful style. The water-colours, which occupy the first room, are largely occupied with impressions of Messina after the earthquake; these are mostly large sketches hastily washed in, but very effective, and of course the half-ruined buildings afford very picturesque and suggestive compositions for the artist. One of the best of the water-colour drawings, however, is that of an uninjured building, the Church of St. Agostino, Taormina; a very good architectural sketch in brushwork. Among other water-colours, "A Grey Day, Picardy," is a fine piece of landscape effect; and "The Fountain, Taormina" (the one numbered 46—there are two under the same title), is a brilliant colour-fantasy. But the etchings, in the second room, are even more interesting works than the water-colours, though perhaps in some cases a little too scribbly in line, and too violent in their opposition of lights and darks. This opposition of light and dark is, however, one of the special sources of effect in etching, as is seen splendidly in "St. Nicholas, Dixmuden," where the white church sparkles from behind the nearly black mass of an ancient street house, and in "The Apse of St. Walburgh, Furnes." The finest of the architectural subjects is, however, the large etching of "The Bridge of Sighs," which is magnificent.

BUILDERS' BENEVOLENT INSTITUTION DINNER.

The sixty-third annual dinner of the Builders' Benevolent Institution was held in the Whitehall Rooms, Hotel Metropole, on Thursday last. Among those present were Mr. Frederick Higgs, Mr. Leonard Horner, Mr. J. Carmichael, Mr. A. Ritchie, Mr. Joseph Randall, Mr. W. T. Walker, F.R.I.B.A., Mr. F. M. Elgood, A.R.I.B.A., Mr. Bird Godson, Mr. J. W. Chessum, Mr. H. T. A. Chidgey, Mr. John T. Bolding, and Mr. Thomas Costigan.

The usual loyal toasts having been given, Mr. William Willett, the President, proposed "The Builders' Benevolent Institution." The building trade, he said, was the leading industry in the kingdom, and, with the exception of agriculture, employed a greater number of persons than any other industry. Architects and builders were, he believed, the most important persons of the age. Later generations would not judge us by our writings, but by our buildings. They would say, "What did these people know about architecture?" He believed that if the R.I.B.A. would establish two travelling lecturers to go up and down the country lecturing at the schools a greater interest in, and appreciation of, architecture would be created. Mr. Willett emphasised the present lack of interest in architecture on the part of even educated people by telling how a hospital committee, of which he was a member, when about to carry out a building scheme proposed to dispense with the architect. He then referred to the exorbitant charges of water boards, instancing a particularly flagrant case. Then, turning to the affairs of the Institution, he said that during the past few years their funds had not sufficed for the demands made upon them. Stock had been sold, and they were gradually falling in arrears. He had suggested that the fixed benefit should be somewhat less, and that in future pensions should be paid at the rate of 10 per cent. on the amount a member might have given during his time of prosperity. The cost of administration was exceedingly low, having been only £271 last year and £277 the year before.

Mr. Leonard Horner, in proposing the toast of "The Architects and Surveyors," said there was not much work being done, but what little there was was of a high standard. He believed that the architects and surveyors could help the builders in the matter of sub-contractors. Referring to the proposed St. Paul's Bridge, the speaker said he trusted that a London architect would prepare the design, that a London quantity surveyor would take of the quantities, and a London builder would build the bridge.

Mr. F. M. Elgood, F.R.I.B.A., responding for the architects, observed that he did not think the architects could help the builders in the way Mr. Horner desired. Architects had a sort of dual partnership; they could not carry on work without the client at their backs; nor without the aid of the builder. It could be said of Mr. Willett that what he put on the ground would last not for 99 years, but practically for ever. Long before town planning had been conceived by Mr. Burns, Mr. Willett had carried it into execution. He trusted that the Institution would continue with success.

Mr. J. E. Drower, F.S.I., responded for the surveyors. He said he had seen fine architectural schemes in the technical Press, and on the walls of the Royal

Academy, but with not the ghost of a client behind.

At this point it was announced that the President's subscription list alone amounted to £948 13s. 6d., including gifts of £100 by the President, £100 by the Duke of Westminster, and 100 guineas by Lord Howard de Walden. The grand total amounted to £1,178 14s. 6d.

Mr. Fred Higgs, President of the Institute of Builders, proposed "The President," and alluded to his work at Hove, Chelsea, and Regent's Park, which stood as proof of his genius in house building.

Mr. Willett, replying, said it was very wrong to hold up the speculative builder to contempt. He himself had been a speculative builder for thirty years, and it had always been his aim to erect the very best work.

Mr. James Carmichael proposed "The Vice-Presidents, Committee, and Stewards," and Mr. John T. Bolding replied, saying that the committee had to face fourteen builders at the end of the month, and would have been able only to deal with three or four but for the generosity and activity of the president, whereby the number would be doubled. In conclusion, he observed that Mr. Thomas Costigan, their secretary, was the most painstaking and faithful friend any builder could know.

OBITUARY.

Mr. R. Selden Wornum, F.R.I.B.A.

The death is announced of Mr. R. Selden Wornum, F.R.I.B.A., at Deal. He built a great many houses for the nobility, both in this country and abroad, among which may be mentioned Tylney Hall, Hants; Lord Glenesk's house in Piccadilly; Lord Wimborne's villa at Biarritz; the summer palace of the Queen Regent of Spain at San Sebastian; and (in partnership with Mr. Edward Salomons) Messrs. Agnew's galleries in Bond Street, W.

Mr. John La Farge.

The death is announced of Mr. John La Farge, the well-known American artist. Mr. La Farge, who was born in New York in 1835, was of French descent, and his early life was spent in an atmosphere congenial to the artistic temperament. In 1856 he visited Europe, and on his return to America entered the studio of William Hunt at Newport. The individuality and power of Mr. La Farge as a colourist soon won for him a great reputation. Many, indeed, regard him as the "most profoundly learned artist America has produced." His mural decorations, big in conception, noble in rhythm, and splendid in colour, show the influence of Raphael, the Venetians, Rembrandt, and the Japanese. Among his finest achievements are his altar-piece in the Church of the Ascension, New York, and his paintings in the churches of St. Thomas and the Incarnation in that city, as well as his "Music" and "Drama" in the house of Mr. Whitelaw Reid. He tried to combine the freedom of natural movement with the conventional posturing so common in decorative composition, and he met with considerable success. Mr. La Farge will always be known for the revolution he created in the art of stained glass painting. The weakness of existing methods led him to experiment, and, as often happens, a lucky accident enabled him to discover that opaline glass had a "mysterious quality of showing a golden yellow, associated with violet, a pink flush on a green ground." This suggestion of complementary colours, and the infinite variety of subtly modulated shades of that material helped the artist to obtain greater depth of tone, and fuller modelling, resulting in a general richness as well as a delicacy of effect beyond the reach of ordinary glass.

Mr. George Humphreys, builder and contractor, of Redland, Bristol, one of the oldest members of the Bristol Master Builders' Association, who died on May 22 last, left estate which has been proved at £25,925 gross.

TRADE AND PERSONAL.

Mr. A. W. Dickinson and Mr. Ralph B. MacColl, architects and surveyors, have entered into a partnership, and now practise conjointly at No. 12, Silverwell Street, Bolton.

Messrs. R. Waygood and Co., Ltd., makers of lifts and cranes, Falmouth Road, London, S.E., announce that Mr. H. Harmsworth and Mr. H. Cecil Walker have joined the Board of Directors of that company.

The Grafham Church Schools, Guildford, are being supplied with Shorland's patent Manchester grates, patent ridge ventilators, and special inlet ventilators, supplied by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

Mr. Alex. G. Lee, late managing director of Hofler, Limited, has resigned his position with that firm as from 1st October, and by arrangement has acquired the goodwill, stock, and plant, etc., of the Oak Panelling and Joinery and Sheet Lead Damp-Course Departments, which they are giving up in his favour. Mr. Lee has opened new show-rooms and offices at 14, John Street, Bedford Row.

The Royal Humane Society have "unanimously resolved that Frank P. Regan is justly entitled to the Honorary Testimonial of this Society, inscribed on Vellum, which is hereby awarded him for having on the 16th July, 1910, gone to the rescue of two persons who were in imminent danger of drowning in the Thames at Twickenham, and whose lives he gallantly saved." Mr. Regan is a member of our advertising staff.

SOCIETIES' MEETINGS.

Estate Agents' Institute.

The annual general meeting of the Incorporated Estate Agents' Institute was held on November 15th, at 9, Conduit Street, the president, Mr. W. H. Warner, in the chair. The thirty-eighth annual report and statement of accounts was presented and adopted. Some discussion followed on the best method of intimating that an estate agent was a member of the institute. Some were in favour of adding the letters "I.E.A.I." after the name on business notepaper and cards. The president thought this was too much like a puzzle, and would really convey no meaning to anyone unacquainted with the organisation. He was strongly of opinion that they should put the title of the institute in full on their office paper, as it would be readily understood, and really represented far more than the mere initials. This course was unanimously agreed to. It was decided to hold the annual banquet in London some time at the beginning of March, 1911.

The council of the institute for the ensuing year was elected as follows: Messrs. P. Davies, W. H. Wells, J. Boyton, J. B. Colton, H. Frank, L. Hunter, H. F. Lofts, M. Rogers, R. Squire, W. H. Warner, J. W. Berra, and W. Thompson.

A vote of thanks was passed to Mr. W. H. Warner, the retiring president, whose year of office would always be remembered by estate agents, for during it they received their charter of incorporation.

The new president is Mr. Howard Frank.

Liverpool Architectural Society.

At the meeting of the Liverpool Architectural Society, held on November 6th (Mr. A. Thornley, president, in the chair), Mr. Felix Clay, architect to the Board of Education, read a paper on "The Beginnings of Art." He said it was common to find the name of artist claimed by the exponents of almost any branch of skill, from tight-rope walking to music, from hairdressing to architecture. The title was willingly conceded to the workman who took a pride and interest in his work. The laws of art and design merely registered the accumulated likes and dislikes of a great number of people. The beautiful was what they liked. All forms to have survived must have been at one time useful. The practical man, looking at an object to improve it, regarded it entirely from the practical side, with a view to further utility. The artist dwelt on those features of it that were agreeable, and in idealising it those were the points with which he would deal.

FEDERATION NEWS.

Lancashire, Cheshire, and North Wales Federation.

The monthly meeting of the Administrative Committee of the above Federation was held in the new offices, National Buildings, St. Mary's Parsonage, Blackfriars Street, Manchester, on November 11th, when the President (Mr. F. Woods, Bolton) presided over a good attendance of members.

Accounts for the quarter as presented by the Secretary were recommended for payment.

A communication from the National Federation on the suggested amendment to Clause 30 of the National Form of Contract was referred to the Special Sub-Committee at present considering the proposed new form of Sub-Contract and the Irish form of Contract.

It was decided to discontinue the December issue of the Half-yearly Report in book form, and in future only to publish the book in June.

A suggestion for revising the rule dealing with the appointment of the various Federation Committees, so that each Committee shall in future be elected from the Executive Board, was referred to the Special sub-committee who are considering matters in connection with the efficiency of the Federation.

Considerable discussion took place on the recommendation of the National Federation in support of the Leicester Demarcation Award, which it was decided not to entertain. It was also agreed that the National Federation should be asked to again open this question and refer the decision to the various Federations and Local Associations for their consideration and report.

The Secretary was instructed in the meantime to write the Journal pointing out that the National Federation recommendation does not receive the approval of this Federation.

A letter was read from the Liverpool Association on the subject of the Liverpool and St. Helens boundaries, and the matter was left in the hands of the Northern Centre Conciliation Board to define.

It was reported that the Northern Centre Executive had decided to defer the question of the reallocation of the Centre Subscription to the National until their March 1911 Quarterly meeting.

Several communications from the National Federation and various Local Associations were also before the meeting, and duly dealt with.

This having concluded the business, the meeting terminated.—JOHN TOMLISON, Secretary.

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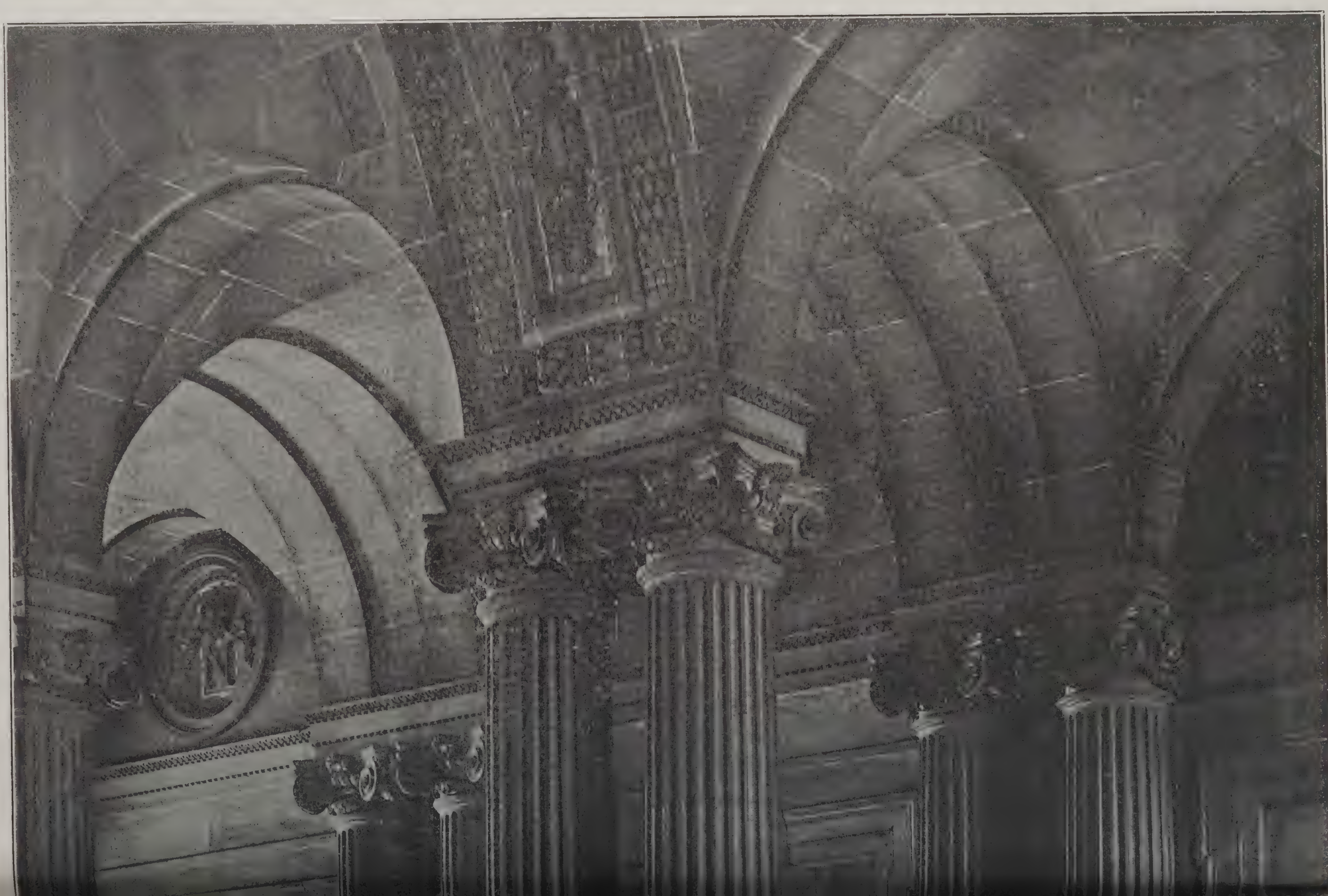

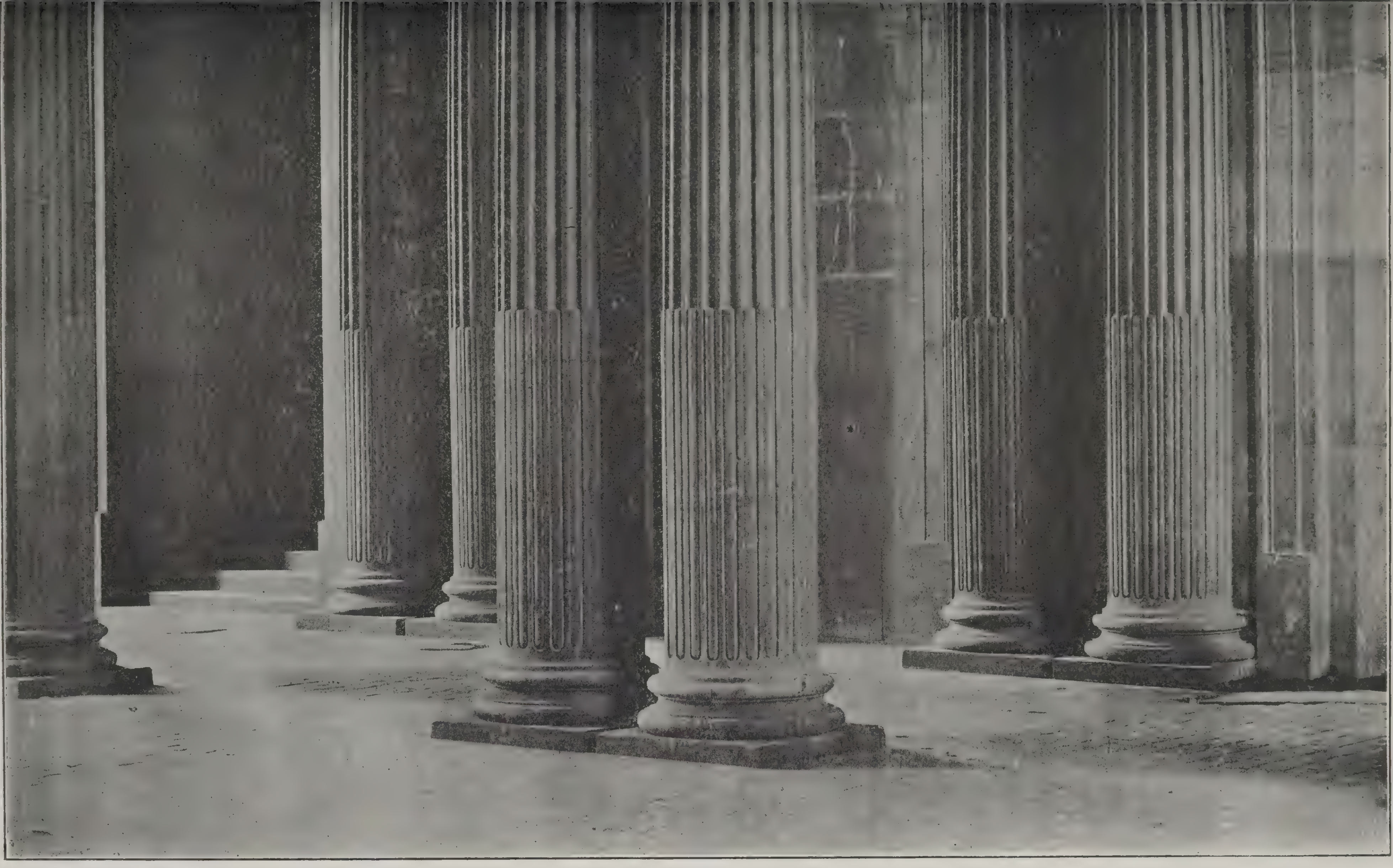

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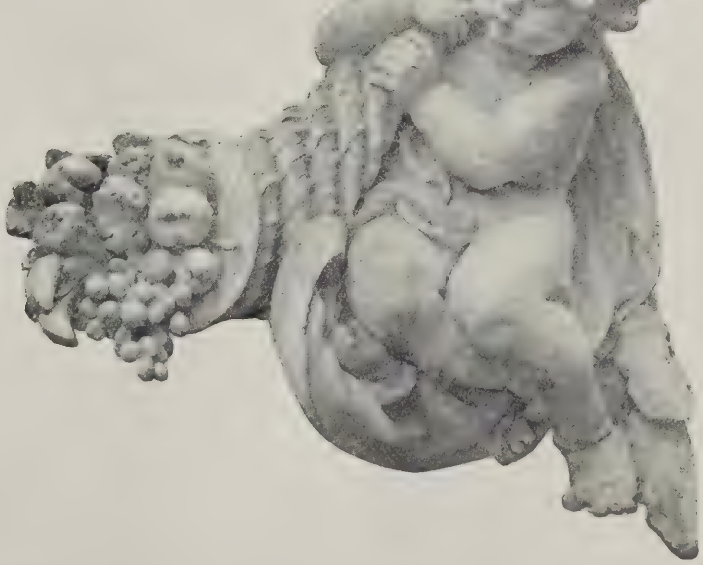


CHERUB ENRICHMENT OVER MAIN ENTRANCE, NEW MUNICIPAL BUILDINGS, BETHNAL GREEN, LONDON. (MODELLED BY HENRY POOLE).

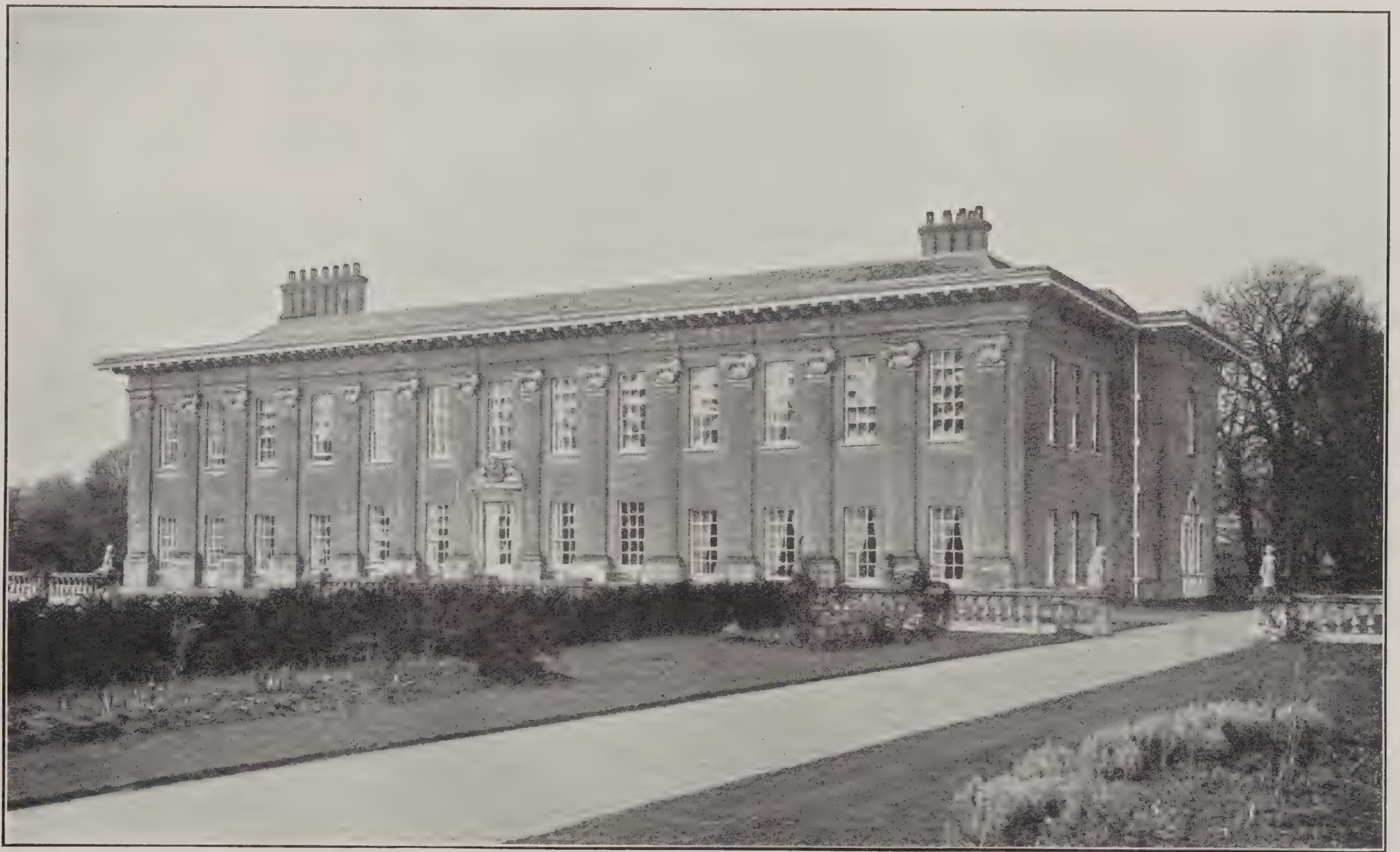


Photo: Ellis.

This fine example of Inigo Jones's later work, commenced in 1651 for Sir George Sondes, Earl of Faversham, was gutted by the disastrous fire that occurred last week. The whole interior of the house, including a valuable collection of old furniture, was burnt out, leaving only the walls standing, in more or less broken condition. The damage done is estimated at £200,000.

LEES COURT, NEAR FAVERSHAM, KENT. INIGO JONES, ARCHITECT. DESTROYED BY FIRE ON NOVEMBER 20TH, 1910.

THE ARCHITECTS' & BUILDERS' JOURNAL.

NOVEMBER 30th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 826.

***Note:** The List of Contents will be found on Page V. of the front advertisements.*

The Possible Future of Charing Cross.

"FLEET STREET," said Johnson, in reply to Boswell's praise of the busy life of that thoroughfare, "has a very animated appearance, but I think the full tide of existence is at Charing Cross." Hyde Park Corner had not come into being in Johnson's day; to the modern Londoner the full tide of existence, during the season and at the latter part of the afternoon, is to be found there rather than anywhere else. But with that exception, Charing Cross at the present moment more than keeps up the reputation given to it by Johnson; the tide of existence there has become a torrent, or rather a series of crossing torrents of rapid locomotion; the tumult of traffic goes on all day and all the year round; and the bad laying out of the open space in which all these streams of traffic cross is brought home in a very practical manner to every foot-passenger who crosses it, under the necessity of looking three or four ways at once if he wants to escape being run over. Yet it is only quite recently that it seems to have occurred to anyone what a singular anomaly it is that just here, where such a quantity of wheeled traffic meets, is the place where there is no road across the river except by a foot-bridge. Waterloo Station, one of the great points of exodus from London, is not very far off in a straight line, but there is no access to it on wheels except by going round by a route twice the distance; more than twice, if the Westminster Bridge route be chosen.

The fact is one of the most striking instances of the want of forethought in important London improvements; of the mistake of having no settled and comprehensive plan to which every detailed improvement scheme should contribute. The demolition of old Northumberland House, the façade of which stood about where the head of Northumberland Avenue now is, was a serious loss to London, both in money (half a million was paid for it by the Metropolitan Board of Works) and in the destruction of the most picturesque old mansion in that part of the city. The older generation of Londoners may still dimly remember the old Elizabethan façade with the lion on the top of it, though it is difficult to picture in the memory now the aspect of Charing Cross as it then was. There was a strong opposition to its destruction at the time, and a great deal of public feeling was manifested on the subject; but there is no doubt that it was in the way, and that its removal was desirable in the general public interest, provided that the most had been made of the opportunity. But to pay all this money, and destroy a fine old mansion for no purpose but to make a short street stopping at the river brink argued a want of perception of the problem.

This want of foresight has led to a treatment of the site which has left almost insuperable difficulties in the way of what would otherwise have been the best solution. For in contemplating a new general traffic bridge across the river at this point it is obvious that the line of Northumberland Avenue, produced across the river, would have been the best and most convenient. But to accomplish that a raised level would have been necessary, at a gradient sufficient to cross the Thames Embankment roadway and give sufficient headway over the river. That might have been done at the time; but no one thought of it, and Northumberland Avenue was laid out with a gentle slope down to the level of the Embankment, and is now lined with valuable hotel and other property, which could not be obtained except at an immense outlay.

Mr. Burns's bold proposal to move Charing Cross station to the other side of the river has opened up new suggestions which are well worth consideration. One result would be to get rid of a very ugly railway viaduct, and leave the position for a general traffic bridge, which would not only be an immense public convenience, but would afford the opportunity of building a bridge which might be architecturally worthy of its position between Waterloo Bridge on the one hand and the London County Hall on the other. The placing of the new station in immediate proximity to Waterloo Station would in itself be an undoubted convenience to travellers. And as to the Charing Cross Hotel, which forms the façade to the present station, we fear it must be said that, though built by an architect eminent in his day, it is a piece of architectural commonplace that no one would miss.

In that case the site of the station would have to be utilised for the formation of a rising *place* giving access to the proposed new bridge, which would follow the line of the present railway viaduct. It is not nearly so good, nor as one may say, so natural a line of approach as the Northumberland Avenue line would have been; it involves a side turn out of the Strand; but there is a good deal of small property westwards of the station site which might be acquired, and the land cleared. We should contemplate the clearing away of all the buildings between the present station and the large buildings fronting on Northumberland Avenue. That is to say, doing away altogether with Craven Street and Northumberland Street. With that clearance, it would be possible to make a fairly convenient approach from the Trafalgar Square side. The space on the new approach not required for the actual carriage drive would be laid out as a garden, and the space underneath would be available as warehouse cellars. It would be a far more expensive and a somewhat less convenient way of doing it than it would have been to have formed Northumberland Avenue in the first instance as a bridge approach. But that is the lesson we have to learn from these difficulties. If the right thing is not foreseen and done at the right moment, it has to be done later on at greater cost and in a less satisfactory manner. But with all these drawbacks, there is no doubt that a fine thing might be made of it.

If anything develops from this idea, it ought to be considered a matter of course that the new bridge should be a monumental architectural structure of granite. Every time that a new bridge across the Thames is talked of, the public ear is beset with the recommendations of engineers and of municipal authorities in favour of a steel bridge; the engineers because they look at nothing except from a purely constructional point of view, and the authorities because they are obsessed by the idea of economy before all things. Some day public opinion will rise to the conviction that economy in great public works is not everything, and municipal authorities will have to take public opinion into account. There are even now signs of a change of feeling in that respect. In the case we are contemplating it is the architectural greatness and dignity of London that will be involved, and nothing short of a monumental erection will be satisfactory. As to the argument sometimes brought forward, that a steel bridge on concrete and iron columns interrupts the waterway less, it is a perfectly futile one. What is the waterway traffic of the Thames above London Bridge? A few occasional barges and a small tug steamer or so. It is perfectly absurd to urge the waterway traffic of the Thames as a reason against a bridge with stone piers. Waterloo Bridge leaves ample room for everything that has to pass under its arches. The Port of London is below London Bridge, not above it.

In connection with the subject we have not forgotten Mr. Collcutt's bold proposition some three or four years ago, for a street bridge with houses on each side of it, illustrated in a fine drawing that was hung at the Royal Academy. There is something to be said for the idea, at all events in an economic sense. The rental of the houses or shops would be a considerable offset against the cost of the bridge, a kind of continual percentage return on the outlay. But, if we remember right, Mr. Collcutt recommended the idea partly, if not mainly, on the ground that a bridge over a wide river was a very exposed situation, and that there would be much greater comfort for the public in a bridge which was protected by houses like any other street. We do not sympathise much with the idea from that point of view. A bridge lined with houses obstructs the free current of air up and down the river more than an ordinary bridge, and is so far less hygienic; and in fine weather, at all events, we should have thought that everyone who has to walk about London would be rather glad to get out of the streets for the few minutes spent in crossing a bridge, and to enjoy the fresh air and the sight of the perspective of the river view. No doubt, on a cold day, with a driving rain, a Thames bridge is rather an exposed situation, but if people would rather have a bridge built up and the view of the river shut out, than face some bad weather now and then, we must be becoming rather a feeble folk. On the whole, the advantages are decidedly in favour of the open bridge. We live in a wilderness of houses; let us at least have a chance of getting away from them for a few minutes if our business takes us across a bridge.

The British School at Rome.

At the annual meeting of subscribers to the British School at Rome held on Tuesday last week at the rooms of the Society of Antiquaries the chair was taken by Sir Rennel Rodd, the British Ambassador at Rome, who has long taken great interest in the study of Roman archæology, and whose address, moving the adoption of the Report, which was the principal business of the meeting, was a remarkable one, both in regard to comprehensiveness of view and clearness of literary expression.

Speaking of the importance of the study of Roman remains, he emphasised the fact that Rome, in the period of her greatness, centred in herself all the civilisations of the world. The influence of every then existing standard of civilisation was felt and represented in what was then the metropolis of the known world. And the continuity of Rome was another important condition; there had been no essential break with the tradition of Roman thought, and we were ourselves intimately associated with the history of its developments. Sir Rennel Rodd went on to summarise briefly the various directions in which investigation had recently been made, and may be made, under the auspices of the School; studies of relics of the Stone and Bronze Ages; studies of the megalithic remains of Sardinia and Malta—mainly, we may add, by Dr. Ashby, the Director of the School, who has made this subject his own, and has also contributed a most interesting series of studies of the Roman aqueducts—the wide area open for paleolithic study in Italy and the islands off her coasts, and for acquiring new light on the relations of Southern Italy with the Ægean civilisations. But perhaps the most important suggestion made in this part of the address was in regard to what the chairman rightly referred to as "the Etruscan problem." Until we have solved that, as he said, our understanding of the early history of the aboriginal Romans must remain incomplete; and for the present Etruscan history is still a kind of chapter of romance, in which a few stray remains serve to stimulate the imagination, while providing little basis of fact. Whether we can ever get much further into Etruscan history remains to be seen, but if the British School at Rome can collect and produce any fresh information on the subject it will have made a most important contribution to architectural history.

Sir Rennel Rodd made an excellent point also in his suggestion for an appeal to the Colonial Universities for support to the School at Rome, as affording these new centres of learning an opportunity for getting in touch with the best archæological knowledge in regard to the history of the older civilisations. His ideal of the British School at Rome was that it should become a national and Imperial centre of culture where the students of the five nations should meet and exchange ideas. It is an admirable suggestion, which we hope will not fall to the ground.

The Report, which was unanimously adopted, shows record of a great variety and activity of work among students of the School, and others temporarily connected with it, during the past year. It must be remembered that the scope of study of the School is not confined to work of the Classical period, but is supposed to embrace all buildings and other remains down to the date of 1500. Consequently measurements and illustrations have been undertaken of work in the basilica churches, as well as in Pagan temples, and these include decorative details and paintings as well as architecture; while one student, Miss Alford, of Girton College, has devoted herself to the study of Roman inscriptions. In the course of the short discussion, or rather speech-making, which followed, Dr. Kenyon spoke especially of the services rendered by the two principal officers of the School, Dr. Ashby, the Director, and Mrs. Strong, the Assistant Director; and we can cordially support him there. No one who has studied Dr. Ashby's various communications on archæological subjects, or who has heard Mrs. Strong lecture on Roman remains, will doubt that the Director and Assistant-Director thoroughly understand their work.

The exhibition of drawings made by students was hardly so satisfactory, and a good deal too much was made of them by Mr. Walter George, who among other things called on us to admire a poor water-colour of the Arch of Titus. The only really fine sketches were those of Mr. Carus-Wilson, which are first-rate examples of architectural sketching; the others were in no way remarkable. An exhibition of sketches by the students ought to produce something better than this. Of course it may be replied that sketching architecture is not the real object of the School; but if done at all it should be done well.

At the close of the meeting Mr. Baker-Penoyre, the Secretary, read part of a letter received from an eminent English architect in South Africa, which formed an interesting comment on the chairman's suggestion of the use the School at Rome might be to the Colonies. The writer of the letter expressed a hope that young architects from South Africa, who wished for some European study, should obtain it through the British School at Rome, because it was desirable that those who were to produce architecture for South Africa should form their style on the ancient architecture of a sunny climate, and not from the study of northern styles of architecture.

CHRONICLE AND COMMENT.

The Architect as Artist.

Architectural draughtsmanship being for the moment a burning topic, it is interesting to quote the following observations of a writer in the "Morning Post." "Modern architects," he says, "on the whole are serious people, and they deserve moments of relaxation such as those spent at the Architectural Association's Conversazione at 18, Tufton Street, Westminster, where music, flowers, and pictures, made the rooms lose their usual formality and become bright and gaily harmonious. The many water-colour and other drawings showed also what architects can do in their playtime, when free from the bondage of rule and compasses. Some of the sketches have an accuracy of observation and vigour of handling that would make the work of many professional picture-producers look feeble. Among the memoranda that deserve praise are the drawings by Mr. Ernest George and Messrs. Waring, Wells, Walot, Forbes, and Hepworth, all members of the Association or students at the Tufton Street School." This is no doubt very gratifying; but it is no news to readers of this Journal that many architects possess a high degree of skill in drawing and painting. Our contemporary's reference to "the bondage of rule and compasses" has probably more force than most people suppose. Doubtless those necessary implements have generally a rather deadly effect on pictorial representation; and men who are able to break free from the "bondage" have thereby the greater glory of their achievements.

Wolsey Tapestry Panel.

Messrs. Puttick and Simpson's rooms, 47, Leicester Square, were crowded when the now famous panel of Arras or Burgundian tapestry, the discovery of which by Messrs. Puttick and Simpson at Langford Hall, Cornwall, has been already recorded in this Journal, realised no less than £,600. The panel is in a fair state of preservation, and measures 13ft. 4in. by 13ft. 9in. Since its existence was revealed in the columns of the "Times" some weeks ago, it has been examined by authorities from various European museums and private experts, and attempts have been made to purchase it by private treaty, several offers exceeding £2,000 being made. At the sale Mr. Coureau made the first offer of £500, and rapid bids were made up to £5,000; at and after this figure the chief bidders were Mr. Charles Wertheimer and Captain H. Lindsay, to the latter of whom it was knocked down at the price mentioned. It is stated that this panel (with which was included a portion of a frieze of sixteenth century tapestry with the Royal Arms of Henry VIII., also from Hampton Court) changed hands at a sale in Cornwall about the year 1848 for less than £2.

A Railway as a "Thing of Beauty."

In connection with the proposed re-planning of Bradford, we recently chronicled the objection that the new railway will be a continuous, unsightly obstruction, which should be hidden away from sight. A correspondent of the "Yorkshire Daily Observer," Mr. T. C. Hope, thinks that this objection is a very harmless bogey that a little more light will melt into thin air. He submits that, far from being an eyesore, it can and ought to be made a thing of beauty from where it emerges from the tunnel to the Midland Station, nor need the cost necessarily exceed much, if any, that of the piers, arches, and solid retaining walls which we have been accustomed to see in the approaches to other cities. A description of the levels of the rails helps to explain this contention. At the tunnel mouth the rails will be 36ft. or thereabouts, below the surface; at Diamond Street 20ft., and Eastbrook Lane the rails and the surface are level. From Eastbrook Lane to Leeds Road there is a fall of 27ft., and from Leeds Road to the street in front of the station a fall of 7ft. The line from the tunnel mouth to about Great Cross Street would be protected from the streets on both sides by walls 6ft. or 7ft. high above the street levels. From the bridge over Diamond Street to the tunnel mouth the track might be covered over to connect East and West Kingsway. From about Great Cross Street to the station the track might be constructed of steel pillars and girders, leaving a clear roadway underneath between the Kingsways East and West. "Now," he contends, "to say that a viaduct of such materials will be an ugly, unsightly eyesore is to suppose that the ingenuity and skill of trained engineers and architects have ceased to exist, or that constructive ability and artistic skill are no more to be found in the land." That may be very true; but, having due regard to precedent, it is impossible to feel very confident that Mr. Hope is not over-sanguine. We should like to believe, however, that with the evident expansion of taste in modern times, even our railways are not altogether hopeless.

The Humours of Acoustics.

Mr. Justice Darling, sitting at the Old Bailey Sessions House the other day, said that the properties of this building had been so improved that they could now hear two cases at once—one in this Court and the other in an adjoining Court. The sound they were hearing there was a prisoner speaking in the other Court. He had sent to see whether it could be remedied, but he was told that it could not, and that it was one of the peculiarities of the building. Very often in that Court they could not hear witnesses or counsel, but they could hear what was going on in the other Court. Mr. Justice Darling's reputation as a "judicial humourist" would seem almost to suggest a brilliant Gilbertian idea that he may have had at the back of his head but was too modest to express —that the learned judges might with acoustic advantage exchange courts—sit in one court to try a case in another. "Cross-examination" would then acquire a fuller meaning; and this arrangement being applied to other courts, perhaps we should less often see the dubious entry in the causes lists—"Smith v. Jones (*part heard*)."

Some "Outside" Views of Building Topics.

An intelligent "outside" view is always interesting, and may sometimes be suggestive, and even valuable. Mr. A. D. Steel-Maitland, M.P., speaking as the guest of the Birmingham Building Trades Employers' Association at their annual dinner last week, touched upon one or two matters of unquestionable importance, and on the whole he did it so sympathetically that his hearers must have felt inclined to say to this self-styled "outsider," "Come inside." When he said, for example, that "if there was a needed reform, it was in private Bill procedure," the observation was quite naturally received with applause. It is a point that should be again taken up with vigour and determination, because there is no doubt whatever that the necessity of setting in motion the costly and intricate machinery of the law, in order to obtain official sanction for municipal building schemes and other works, must often have the effect of deterring enterprise in this direction; and, where this contingency is not actually prohibitive, it causes undue friction and delay, and absorbs far too large a proportion of the available funds. Another subject touched upon lightly but suggestively by Mr. Steel-Maitland was the undeniable but as yet insufficiently recognised growth of taste and demand among the working classes for a higher standard of living and housing. The crux of the problem is, how to provide them with improved accommodation without exacting a rise in rent commensurate with the increased cost of building. The speaker was very sanguine that this could be done, although he frankly admitted that builders had assured him that it was impossible, for example, to provide satisfactory dwellings (presumably in the Birmingham district) at a less rental than 8s. per week, whereas Mr. Steel-Maitland is sanguine that it could be done for 5s. a week. Here we hardly follow him; it is much more easy to agree with the opinion of practical men. Moreover, the curse of extreme cheapness is seldom more malignant than when it is associated with building; and surely it is incompatible with those higher aspirations to which the speaker drew attention. In fairness to him, however, it must be said that probably he had in mind some more or less reasonable relaxation of by-laws, rather than any more positive skimping in size or material; and it may be readily admitted that there certainly are instances in which inelastic or ill-conceived general by-laws increase unnecessarily the cost of dwellings to which they happen to apply, but for whose kind they were not specifically made.

Women Architects.

It is announced that at an examination in architecture in Paris three ladies gained diplomas—Mlle. Genevieve Trelat, a young Parisienne, and Mlles. Bernstein and Issakovitch, both Russian girls. Mlle. Trelat was classed first with two men out of a total of twenty-three candidates. The spectacle of these ladies in hobble skirts ascending a ladder presents itself to the mind's eye quite irresistibly; but what is even more serious is the imminent prospect of very ephemeral "fashions in architecture."

National Council of Master House-painters.

A meeting of the council of the National Association of Master House Painters and Decorators of England and Wales was held at the Great Central Hotel, Loughborough, last week, when there was a large and representative attendance from all parts of the country. The president (Mr. John Brown, of Newcastle) occupied the chair, and he was thanked for his presentation to the association of a gold badge bearing the arms of the association, this making a valuable addition to the presidential chain. The gold and silver medals in the apprentice competition were presented to Frank M. Peters and Herbert Wallis (both of Sheffield) respectively, together with cheques, while it was decided especially to recognise the work of Stanley Sleep (Plymouth), who was debarred from the competition, his work arriving too late owing to railway delay. Mr. Frederick Grundy (Loughborough) was invested with the presidential chain, and various committees were appointed. The engaging of the Drill Hall at Derby for the next convention and exhibition was approved. Regarding always with sympathy the consistent efforts of the house painters and decorators to foster skill and elevate their calling, we have been often tempted to wish that in this country the architects would take a more decided and less casual interest in art-craftsmanship than is at present observable. In France the architect watches over the craftsman's training with almost paternal care; but in our country the professional man and the practical man of business seem to fight rather shy of each other. In no direction, we imagine, could the architect render greater service than in that of the painter and decorator.

New Windows in the Sistine Chapel.

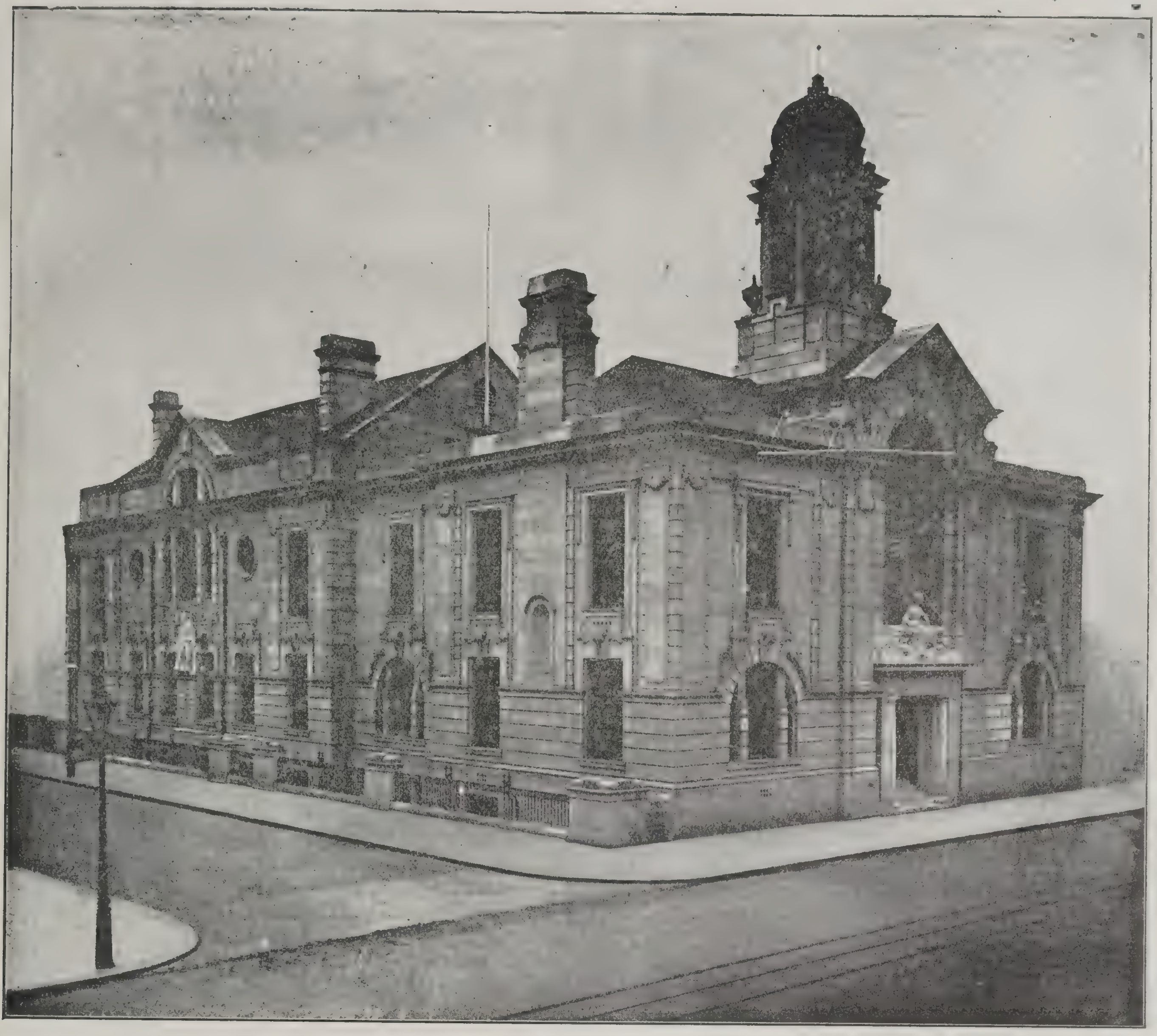
The new windows for the Sistine Chapel have been formally inspected by the Pope, in whose honour they have been presented by Prince Luitpold, Regent of Bavaria. The question of removing the 12 windows by which the Sistine Chapel has been hitherto lighted and putting in their place new glass of a character more suitable to the building, was not decided without anxious care and consultation. A commission was formed under the presidency of Monsignor Misciatelli, Sub-Prefect of the Papal Palaces, which included the heads of the French and Spanish academies as well as of the Italian, and such well-known authorities on art as Roeder, Joris, the architect Schneider, and M. Steinmann, the author of the great work on the Sistine Chapel. Above the door of entrance into the chapel there are two sham windows painted on the wall, which date from the time of Michelangelo. These have suggested the shape, small round panes in narrow leading. The colour of the circular panes is almost white, with a very faint tinge of yellow, which varies in intensity according to the aspect of the windows and the consequent amount of light which they admit. The glass of the interstices between the round panes is in shades of red and blue, as in the old sham windows which have been copied. Only two windows of the 12, those on each side of the door of entrance, bear any design, and they are decorated with the arms of Pius X. and of the Regent of Bavaria, with an inscription relating the circumstances of the gift. The size of the windows is 14ft. in height and nearly 3ft. in width. The improvement on the former unsightly windows, which dated from about 1750, says a special correspondent of the "Times," is beyond all question. Not only does the new glass give a far better and more diffused light, but it also enhances instead of marring the general beauty of the chapel.

A Chance for Young Architects.

The invitation now being extended to architects and others to submit designs for the building of a Presidential Palace for the Cuban Republic provides, a Liverpool contemporary supposes, an opportunity for the advent of an Elmes or Gilbert Scott. The architectural profession numbers, he ventures to say, among its members many young ones capable of designing a much more elaborate and attractive style of building than that which usually obtains in this country nowadays, but for all practical purposes the difficulty generally encountered is the great cost of much ornate decoration. The architect who spends a large amount of time and shows great ability in that direction has but little chance of having his talent rewarded, but the Cuban Republic's offer gives him not only plenty of scope for the exercise of his abilities, but the chance of a substantial solatium. The proposal is to expend £200,000 on the erection of a Government Palace in the city of Havana, and the architects, engineers, or builders whose designs are placed in the first and second positions in the order of merit will receive awards of 10,000 and 5,000 dollars respectively. In this day of "monumental" and "mass" cultivation, the "much ornate decoration" for which our contemporary seems to yearn certainly stands but little chance in this country; and on the whole we should much prefer that the young men capable of it should unload it on the Cuban Republic.

Clifton College Chapel.

Clifton College Chapel has just been used for the first time since its enlargement, but the formal opening will not take place until February. The original building, consisting of a nave and chancel, was presented to the college by Mrs. Guthrie, widow of the first chairman, in memory of her husband, Canon Guthrie. A north aisle was added in 1881, the cost of which was defrayed by donations from parents of the boys in the school from 1875 to 1885, and from friends. A further extension became necessary about two years ago, and Sir Charles Nicholson recommended that the central portion of the chapel should be extended southward and northward, and also raised upon a vaulted roof, supporting a lantern tower. Sir Charles Nicholson and his partner, Mr. Corlette, thereupon prepared plans, embodying two small aisles to the chapel, suggested by the council, and making the east end visible from all parts of the interior. The chapel apse, the western portion of the chapel, and the memorials remain untouched. The internal arrangements are now somewhat different, the seats for ladies being behind the chancel, and the organ is to be placed in the gallery. The estimated cost is about £8,000, towards which there is in hand £5,000.



NEW MUNICIPAL BUILDINGS, BETHNAL GREEN, LONDON, E. PERCY ROBINSON, F.R.I.B.A., AND W. ALBAN JONES, ARCHITECTS.

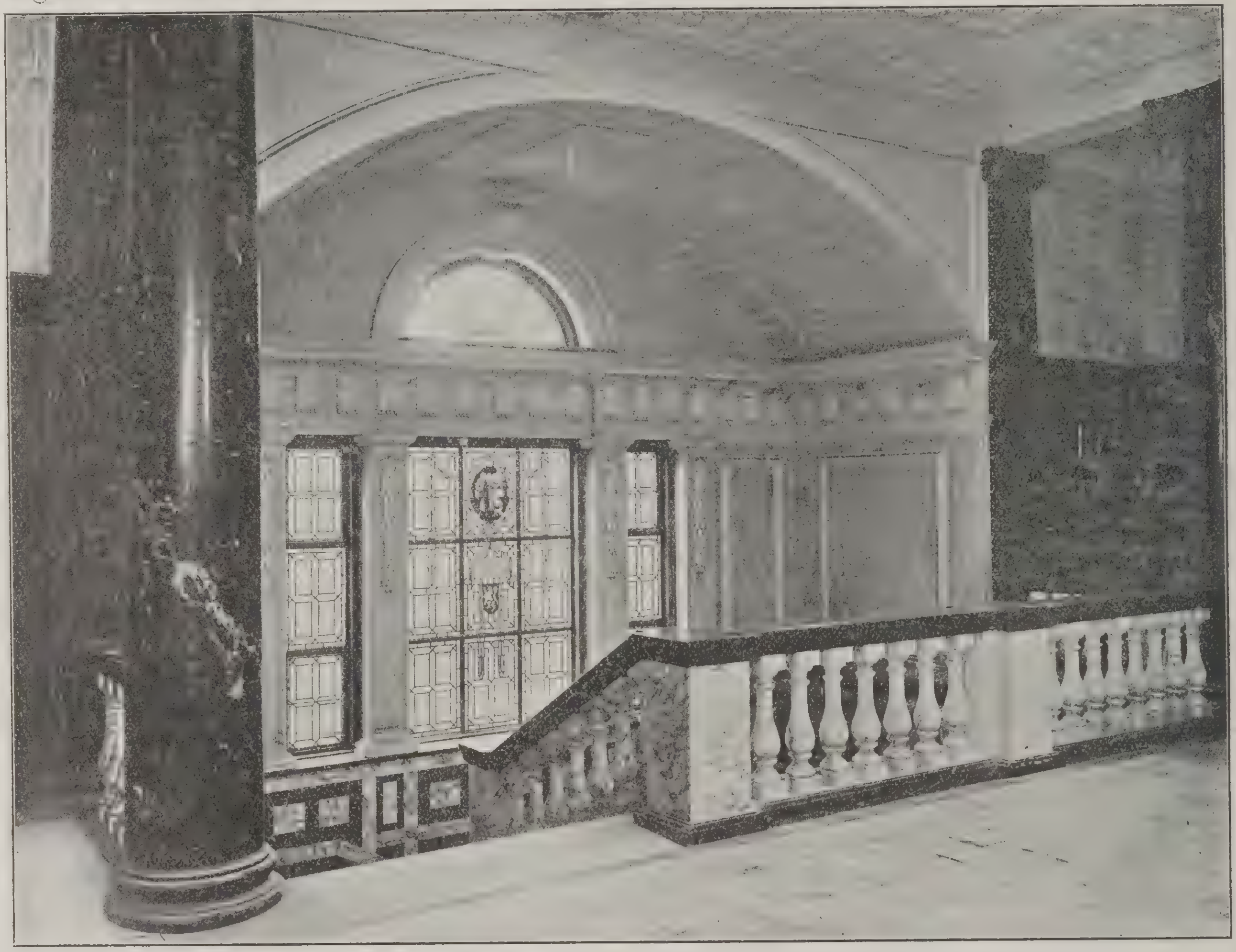
The cost of the new organ, which is being built, is to be defrayed by Mr. H. H. Wills (O.C.), of Barleywood, as a memorial to his brother, Maitland Wills, killed by a fall at the Aber Waterfall, Bangor, in April, 1885. The new organ, which is being built by Messrs. Harrison and Harrison, of Durham, will be placed in the chapel in the Christmas holidays. It will consist of four manuals and pedals, 42 speaking stops and 20 couplers. The blowing will be by electric motors placed outside the chapel. The organ will have a case (also the gift of Mr. Wills) designed by Sir Charles Nicholson.

Bethnal Green Municipal Buildings.

It was in March, 1907, that the Borough Council of Bethnal Green decided to acquire a site, in Cambridge Road, for the proposed new municipal buildings, and in due course this was purchased for £8,565. The site comprises a building frontage which is 67ft. long to Cambridge Road, and 131ft. to Patriot Square, presenting a decidedly difficult plan. In arranging for competitive designs, the Council asked the President of the Royal Institute of British Architects to nominate an assessor, and accordingly Mr. Henry T. Hare, F.R.I.B.A., was appointed. He awarded the first position to the designs of which the joint authors were found to be Messrs. Percy Robinson, F.R.I.B.A., and W. Alban Jones, and these gentlemen were appointed architects for the erection, while Mr. Arthur F. Wrightson, F.S.I., was appointed quantity surveyor. The tender accepted was that of Messrs. Brand, Pettit, and Co., for £24,450. The building is in English Renaissance style, with the main frontages executed in Portland stone. In the Cambridge Road front there is a recessed balcony, surmounted by a pediment and tower, the crown of the latter being 75ft. above the pavement level. The main entrance is emphasised with statuary of a full-size seated female figure, and two cherubs (one of which is shown in the illustration which appears on p. 551), modelled by Mr. Henry Poole, of Chelsea. On the Patriot Square elevation the same sculptor has supplied a figure of Justice. Marble pavements are laid in the entrance hall and main corridor, and there are green and white marble wall linings to the entrance hall, corridor and main staircase. The walls of the council chamber and upper hall have a dado of wainscot oak panelling, and the ceilings are decorated with plaster enrichments. The main entrance from Cambridge Road gives access to a vestibule, right and left of which are the Borough Treasurer's and Town Clerk's offices. The whole of the main offices for the official staff are arranged *en suite* on the ground floor. The main staircase, flanked by two marble pilasters, is on the south side of the entrance hall, and by means of three flights of steps leads to the upper hall, around which are grouped the entrances to the council rooms. The council chamber is 51ft. by 38ft. The walls are divided into bays by a series of pilasters, with wainscot oak panelling 9ft. high between. The public gallery at the east end is 38ft. by 12ft. The upper hall contains a marble floor with an area of about 900ft. The two committee-rooms contain a floor area of 530ft. each. The main windows commemorate various incidents in local history. The one here illustrated shows the "Blind Beggar of Bethnal Green."

St. Paul's Ecclesiological Society.

At a meeting of this society in the Chapter House, St. Paul's Churchyard, on Wednesday last, Mr. Arthur G. Hill, F.S.A., read a paper, with lantern illustrations, on "The Churches of Istria and Dalmatia." It is noteworthy that the early churches on the eastern shore of the Adriatic have already been the subject of two important publications, that of Mr. T. C. Jackson, R.A., a good many years ago, and the recent publication by Mr. F. Hamilton Jackson, in two volumes, one dealing with the Italian and the other with the Austrian coast of the Adriatic. Mr. Hamilton Jackson's publication is, naturally, less architectural in its scope than that of his predecessor, but he was able to see all the treasuries of the churches, and his book therefore includes more information as to the examples of early decorative art, especially gold and silver work, which are to be met with in these churches. After the publication of two such important books on the subject it was hardly to be expected that an hour's lecture, recounting a visit of the lecturer to the churches of the district, should contain any new information, but the exhibition of photographs of some of the interiors on a large scale was an opportunity of getting a better idea of their effect than can be obtained from small book illustrations. Mr. Hill confined his lecture to giving information and explaining the lantern views; perhaps something more might have been said in regard to the special kind of architectural and historical interest which these churches display. The peculiarity of them is that in general plan and in external architectural character they are mostly churches of the basilica type, but in many of them the capitals and other interior decorative details are completely Byzantine in character. This Byzantine influence in the detail was no doubt radiated from Ravenna, which affected the design of churches on both shores of the northern portion of the Adriatic. The church at Parenzo is one of the most remarkable examples of this kind of cross-current in architectural style; in general plan and section it is a Roman basilica; in decorative detail it is completely Byzantine. This element of interest in the subject seemed to be overlooked in the lecture, though attention was drawn to it by one of the audience afterwards. The meetings of the St. Paul's Ecclesiological Society have been the occasion from time to time of valuable papers on architectural subjects. At the next meeting, on December 7th, Mr. Patrick H. Hepburn is to read an illustrated paper on "The Romanesque Churches of France." The meetings are held in St. Paul's Chapter-House, at 8 p.m.



NEW MUNICIPAL BUILDINGS, BETHNAL GREEN: UPPER HALL, SHOWING SOUTH WINDOW.

Local Authorities and the Housing Acts.

The Local Government Board issued an order on October 22, 1890, prescribing forms of advertisement and notices for adoption by urban sanitary authorities for the purposes of Part I. of the Housing of the Working Classes Act, 1890. The order was issued under Section 27 of the Act of 1890, which section was repealed by Section 75 of the Housing, Town Planning, etc., Act, 1909. The Board have accordingly issued a further order under Section 41 of the Act of 1909, prescribing forms of advertisement and notices to be used in connection with the powers and duties of a local authority under Part I. of the Act of 1890, in substitution for the forms prescribed by the order of 1890.

THE GREATNESS OF WREN.

The Rev. Canon Bell, preaching to the Drapers' Company at St. Michael's, Cornhill, paid a glowing tribute to the work of Sir Christopher Wren, the architect of the church. Canon Bell's point of view, as reported in the "City Press," will be interesting to architects. He said:—

I will say a few words about the architect of this church, Sir Christopher Wren, one of the great master builders of the world, a man who, with extraordinary mental power and artistic invention, combined heartfelt modesty, simplicity, and reverence for God.

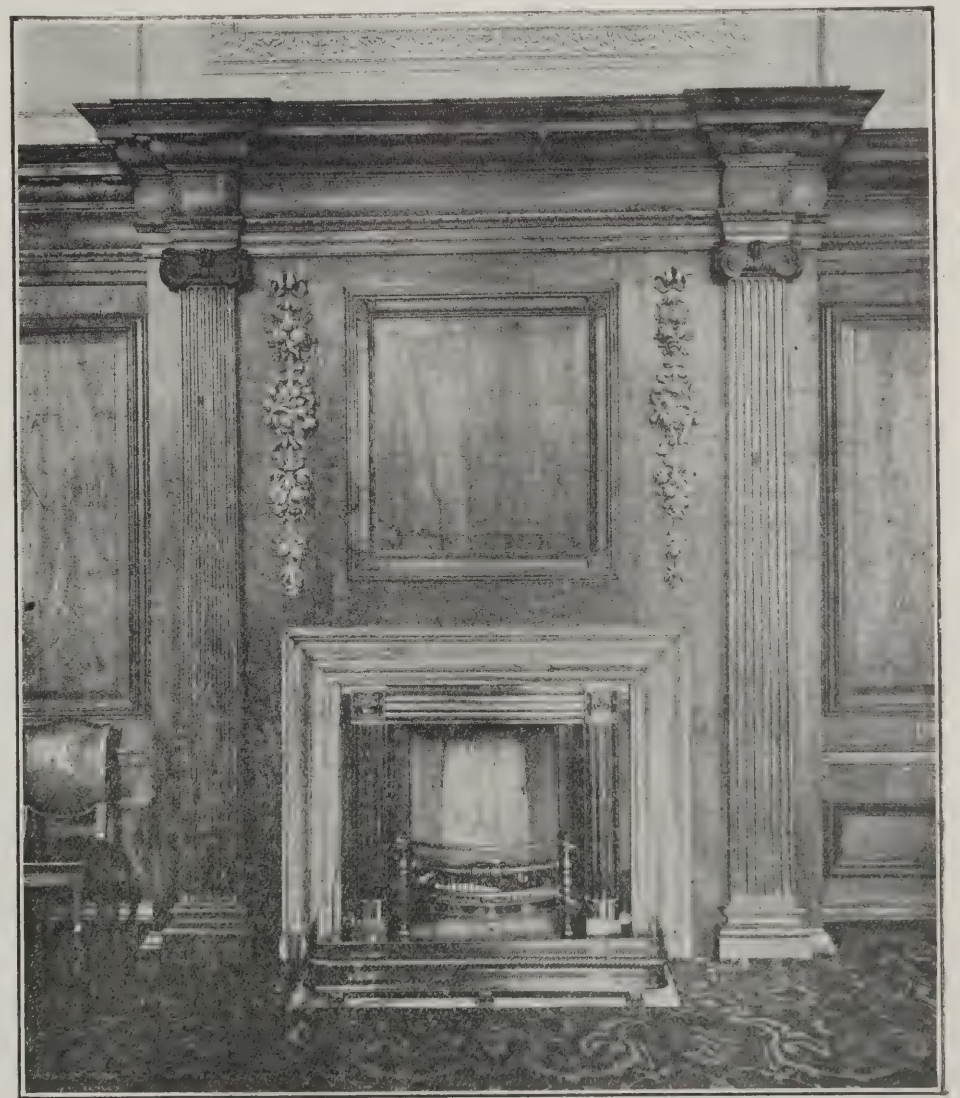
Christopher Wren, born in Wilts in 1632, was in his early years of a delicate constitution, and was, therefore, educated at home by his father, a man of high culture and scholarship. The lad made astonishing progress in his studies, and entered Westminster School in his ninth year, where, under the famous Dr. Busby, he became a good Latin scholar, as is shown by his composition in prose and verse. But already it was evident that his bent was towards science, and especially astronomy and natural philosophy. Having entered Wadham College, Oxford, in his fourteenth year, his marvellous ability soon became conspicuous. In 1654 John Evelyn speaks in his diary of this miracle of a youth, who was known in scientific circles all over Europe. He became Gresham Professor of Astronomy when he was only 25, and soon after Professor of Astronomy at Oxford, and one of the founders of the Royal Society.

In 1662 Isaac Barrow, afterwards Master of Trinity and one of the greatest English divines, had occasion to speak to Wren as one of his predecessors in the Gresham Professorship. He said of him that "it is doubtful whether he is most to be commended for the divine felicity of his genius, or for the sweet humanity of his disposition—formerly as a boy, a prodigy, and now as a man, a miracle—nay, even something superhuman." Modern biographers say of him that, if his philosophical pursuits had not been interrupted by the absorbing work of an architect, he could not have failed to attain a scientific position higher than any contemporary, except Newton.

His first work was the Chapel of Pembroke, Cambridge. His uncle, Bishop Matthew Wren, having been liberated from the Tower, where he had been imprisoned for 18 years, determined, as a thank-offering, to build a new chapel for his college, and employ his nephew to make the plans. It was a building of much importance in the history of English architecture, for Wren, following the tradition of Inigo Jones, endeavoured to make its beauty depend on proportion alone without ornament. This tradition he followed in his later works, which are a protest against the work of those who, having little knowledge of proportion, strive to cover their ignorance by excessive and unmeaning ornament. When the Great Fire of 1666 gave Wren the opportunity of displaying the resources of his genius, he had to design fifty-two parish churches, as well as the Cathedral of St. Paul. Naturally, at such a time, the money available for such colossal enterprises was limited, and he was constantly obliged to study cheapness; but by an expenditure of thought he made good that deficiency. His minor designs have their proportions as carefully fixed as those of the more important. The result is that in Wren's City churches England possessed a treasure such as no other city could show, and comparable only to the works of art at Florence and Rome. There were, no doubt, solid reasons for the demolition of several of these churches; while others, including St. Michael's, Cornhill, have been injured by restoration executed by architects who were not in sympathy with the purity and nobility of Wren's artistic taste.

Nothing in modern architecture excels the beauty, elegance, and variety of his bell towers and steeples. No two are alike, and yet all are in harmony with each other. Our forefathers who lived in their City mansions had the leisure to appreciate them, but now in the pressure of commercial business, or when men are hurrying to their suburban train, and avoiding the perils of the streets, few lift their eyes to Wren's campaniles, or turn aside to study the interior of his churches. There is no lack of books to indicate what is worth seeing. I may mention one recently published by Canon Benham, the lamented Rector of St. Edmund-the-Martyr. Ferguson says of St. Mary-le-Bow: "The towers and spire alone are sufficient to establish Wren as an artist of the highest rank"; of St. Stephen's, Walbrook, "its interior is the most pleasing of any Renaissance Church"; and of St. Michael's tower, "it was rebuilt in bold and effective Gothic style in 1722, from one of the very latest of his designs." Very often a church whose exterior was purposely left plain by Wren, or which is hidden from view by obtrusive buildings, contains within it admirable examples of Wren's consummate skill.

As we move about some of the dark and tortuous lanes of the City, we may find much reason to regret that, after the Great Fire, Wren's plan for rebuilding was not adopted. Though it received general approval, it was thwarted by private interests, and want of public spirit. If he had prevailed, we should have had a magnificent city, in which old inconvenience and deformities were abolished, the streets and lanes were enlarged, and the churches set in "conspicuous and insular positions." Of St. Paul's, the greatest work of Wren, it is not possible to speak within our limits. I will only say that it is rightly called the greatest ornament of the greatest city in the world. If you go to Rome and survey St. Peter's from the outside, and then pass into its vast interior, you cannot fail to be impressed by the bulk and the brilliance of a church whose building was so costly that it helped to bring on the Reformation; but a closer examination convinces one of the superior merit of Wren's design owing to his exquisite sense of proportion, especially in the dome and the western front. St. Peter's took 176 years to build, and many architects had a part in it. St. Paul's was practically completed in 40 years, and was the work of a single man. But Wren's enemies complained that this was too long. Jealous of his influence and fame, they procured the suspension of half his salary "until the said church should be finished the better to encourage him to finish it with diligence and expedition"—a cruel and heartless insult to a man who had accepted the more



The dining saloon is 105 ft. long, 48 ft. wide, and 30ft. high, panelled in Italian walnut to a height of 14 ft.
CHIMNEYPIECE IN DINING SALOON, CENTRAL STATION HOTEL, GLASGOW.
AMES MILLER, A.R.S.A., F.R.I.B.A., ARCHITECT.

than modest salary of £300 a year for the building of St. Paul's and more than 50 parish churches.

Then after other intrigues, which grew more bitter after the death of Queen Anne, and the advent of German George, we find this entry in a MS. diary: "April 26, 1715.—Christopher Wren superseded in the 86th year of his age, and the 49th of his surveyorship. 'And there arose a king who knew not Joseph.'" The old man betook himself, says his grandson, to a country retirement, saying only: "Now fortune bids me philosophise with less incumbrance." So, free from worldly affairs, he passed the last five years of his life in contemplation and studies, and principally in the consolation of the Holy Scriptures, cheerful in solititude, and as well pleased to die in the shade as in the light.

He was indeed a man who deserves our admiration and affection, not only for his amazing mental power, and the great memorials he has left among us, but for the singular purity and simplicity of his character. The astonishing success that he achieved never inflated his pride. Steele, in his "Tatler, No. 52," writes of him, under a feigned name, as one "whose modesty was such that it put a damp upon his great knowledge, and his art and skill were disregarded for the want of that manner with which men of the world assert the merit of their own performances." Loving, modest, and courteous as a boy, he retained these qualities when he became famous. In a corrupt age all testimony leaves him spotless. In positions of great trust, and still greater difficulty, his integrity was made even more manifest by the attacks made against him. Once a year in those latter days it was his habit to be driven to St. Paul's, and there to sit a while under the dome of his own Cathedral. On such a journey in February, 1723, he caught a chill, and died peacefully in his chair. There is no statue of him in London, and no street is honoured by his name, but, so long as St. Paul's shall stand, men will feel that no other memorial is needed. Si monumentum quaeris adspice et circumspice.

SOCIETIES' MEETINGS.

Edinburgh Architectural Association.

Mr. James B. Dunn, F.R.I.B.A., president, occupied the chair at the first meeting of the session of the Edinburgh Architectural Association, held on November 16, in the rooms, 17, George Street. He delivered the inaugural address, and dealt with "The Training of an Architect." Mr. Dunn made incidental allusion to the new Usher Hall. The proposed setting of the Usher Hall could not, he said, be looked upon as a success. The site selected was not of the best, and the sum allowed was insufficient to provide a building of the first public importance. Many fine designs of monumental character were cast aside on account of excessive cost, and very rightly so, but one regretted the parsimony of the Municipality for such a scheme. How differently would our French neighbours have tackled such an opportunity. One could only regret another chance lost of beautifying the city and making the new hall the centre of a group of buildings which might have been erected at a later date. Mr. Dunn sketched the education of the architect twenty to thirty years ago, and compared it with the facilities now offered to the young architectural student by means of technical and architectural schools. The training offered to architectural students in the Ecole des Beaux Arts, Paris, and the methods of study adopted there were briefly described, together with the modern methods of training in the leading architectural schools in America, which he showed were more or less founded on those of the Ecole des Beaux Arts. The advantage of systematic training and the great value of draughtsmanship to an architect were strongly emphasised, but at the same time the lecturer noted the many masterpieces of architecture which were erected by men who were master craftsmen and were comparatively poor draughtsmen.

Liverpool Architectural Society.

At last week's meeting of the Liverpool Architectural Society, Mr. Lionel B. Budden, M.A., read a paper on "The Work of Alexander Thomson." The lecturer, who was the holder of the Holt Travelling Scholarship (given to the University) and a past student of the British School at Athens, passed in review the work done by Thomson under the influence of the Greek Revival. It displayed more force than that of any other architect of the period, excepting Elmes. It was not so scholarly as Cockerell's, except during the last period before his death. The detail was too thin and sketchy, but in his last period he succeeded in suppressing this. He was removed from the Greek revivalists, both as regards the time in which he worked, and in the spirit in which he approached his problems. His philosophy was more certain, and enabled him to withstand the attack of the Gothic Revival. Thomson was born in Stirlingshire, in 1817, and received his early training in Glasgow. The building with which his name became most generally associated was the St. Vincent Street United Presbyterian Church, Glasgow.

Manchester Institution of Civil Engineers.

Mr. H. J. F. Gourley read a paper before the Manchester students' section of the Institution of Civil Engineers last week. His subject was "Concrete and Reinforced Concrete Piles." Mr. D. C. Rattray was in the chair. Mr. Gourley said that to obtain wooden piles of a standard quality had been an increasing difficulty during late years, and it was necessary therefore to find materials which were at least as strong and economical as wood. The use of concrete and recently of reinforced concrete had become more extended and varied as the knowledge of their properties had increased, and it seemed quite natural that the question of their suitability for piling should have engaged the attention of engineers anxious to find an efficient substitute for wood. Apart from the difficulty of obtaining timber piles of a uniform quality, wooden piles might also be defective, though apparently sound, judging by their external appearance. With thorough supervision and the use of properly graded materials there should not be any difficulty in securing perfect uniformity and soundness in concrete and reinforced concrete piles. The load placed upon an average wooden pile might be taken at 15 tons, but on concrete piles an average load was 40 tons or more. The wooden pile, again, must always be wet. If this condition obtained the life of the pile was long, but should the pile be subjected to the partially wet and partially dry state deterioration soon set in and its life was short. There was no such risk where concrete piles were used. After speaking of the use of reinforced concrete piles for marine work, Mr. Gourley described in detail some of the leading types of piles.

Mr. BROCK ON ST. GEORGE'S HALL, LIVERPOOL.

In answer to an invitation for an opinion on the proposed St. George's Hall site for the King Edward Memorial, a letter has been received by the editor of the "Liverpool Courier" from Mr. Thomas Brock, R.A., who writes:—

"It is difficult for me adequately to express my feelings in regard to the proposal which is being made to cut into the base of the St. George's Hall at the south front, and to erect there a memorial to the late King. That such a proposal should be seriously considered seems to me incredible, and I sincerely trust that the people of Liverpool will strenuously resist it.

"The St. George's Hall is universally considered to be one of the finest modern buildings in Europe. Its grandeur arises to a very great extent from the nobility of its proportions and the simplicity and purity of its style. To interfere with one single line of it would be to spoil the whole.

"To me the placing of a monument upon the south end of its base must constitute not only a glaring incongruity, but an act of unpardonable disrespect to the memory of the great architect who designed the building; while the memorial itself, thus attached to and a part of a vast edifice, would possess an insignificance which, as I think all will agree, such a memorial should not possess." Mr. Brock therefore expresses the hope that the people of Liverpool will do everything in their power to prevent this suggestion from being carried out.

Commenting on this letter, the Editor of our iverpool contemporary states that, "with a tenacity which shows a very strong conviction, if a rather curious disregard of public opinion, the Liverpool King Edward Committee persists, we understand, in its proposal to cut into the base of St. George's Hall." He hopes, however, that after the publication of Mr. Brock's views, "we shall hear little more of this unhappy enterprise," and he lays stress on the point that "the primary duty of the members of the committee is to see that the memorial for which they are responsible should be accorded the dignity it deserves," but, declares that, as Mr. Brock points out, if it is to be attached to and made part of a vast and impressive edifice like St. George's Hall, it is condemned to insignificance. Thus, the whole proposal means that a great work of art would be gravely impaired, while the tribute to the late King Edward would be unworthy of its subject. In these circumstances it is rather difficult to understand why the committee is so eager to go on with its project. Even if there were doubt as to whether the breaking up of the base of St. George's Hall were the desecration so many allege, it is hard to see what good purpose is served by persisting in an enterprise which has already excited keen controversy, and must do so again. Our contemporary expresses the fear that to provoke such controversy may have the unfortunate effect of prejudicing the whole scheme of a memorial to the late King Edward. In these circumstances, it seems rather impolitic to pursue a line of action which public opinion in Liverpool has already unanimously condemned.

MOTOR-PITS.

We publish below a detail drawing of a motor-pit designed by Mr. C. Harrison Townsend, F.R.I.B.A., who has had considerable experience in work of this class. Though cars are now made so that almost the whole of the interior is accessible from above, motor-pits still need to be constantly provided, and the accompanying illustration is therefore especially valuable. In connection with it the following notes by the architect may be given:—

For those who dispense with the pit, there are various substitutes in the way of jacks, but in cases where it is incumbent to make use of the pit, the best size for this is 6ft. by 3ft. by 4ft. 6ins. or 4ft. 9ins. deep. Its sides should be lined either with glazed bricks or tiles, and it will be found convenient to form a recess on either side, in which the chauffeur, when at work, can place his tools from time to time. Access is gained by wooden steps, as with iron ones there is always a danger of a heavily-nailed boot causing a spark. It is all but useless to attempt to ventilate the bottom of the pit, for no up-cast shafts avail with a gas which is heavier than air. An American expert strongly advocates the extension of the pit beyond the outer wall of the garage, as tending towards a certain amount of ventilation at all events, and as giving means of escape for the chauffeur, who otherwise would be shut in a trap in case of fire. The covering of the pit should be a series of wide cover-boards 2ins. thick with a cut-out lifter to each. They rest on the rebated edge of a 7in. by 3in. oak curb laid on the pit side. The floor of the pit should be dished to a grated sump in one corner, and it will be found well to lay the floor with coarse sand. A special electric lamp for enabling the car to be minutely examined should also be provided.

OBITUARY.

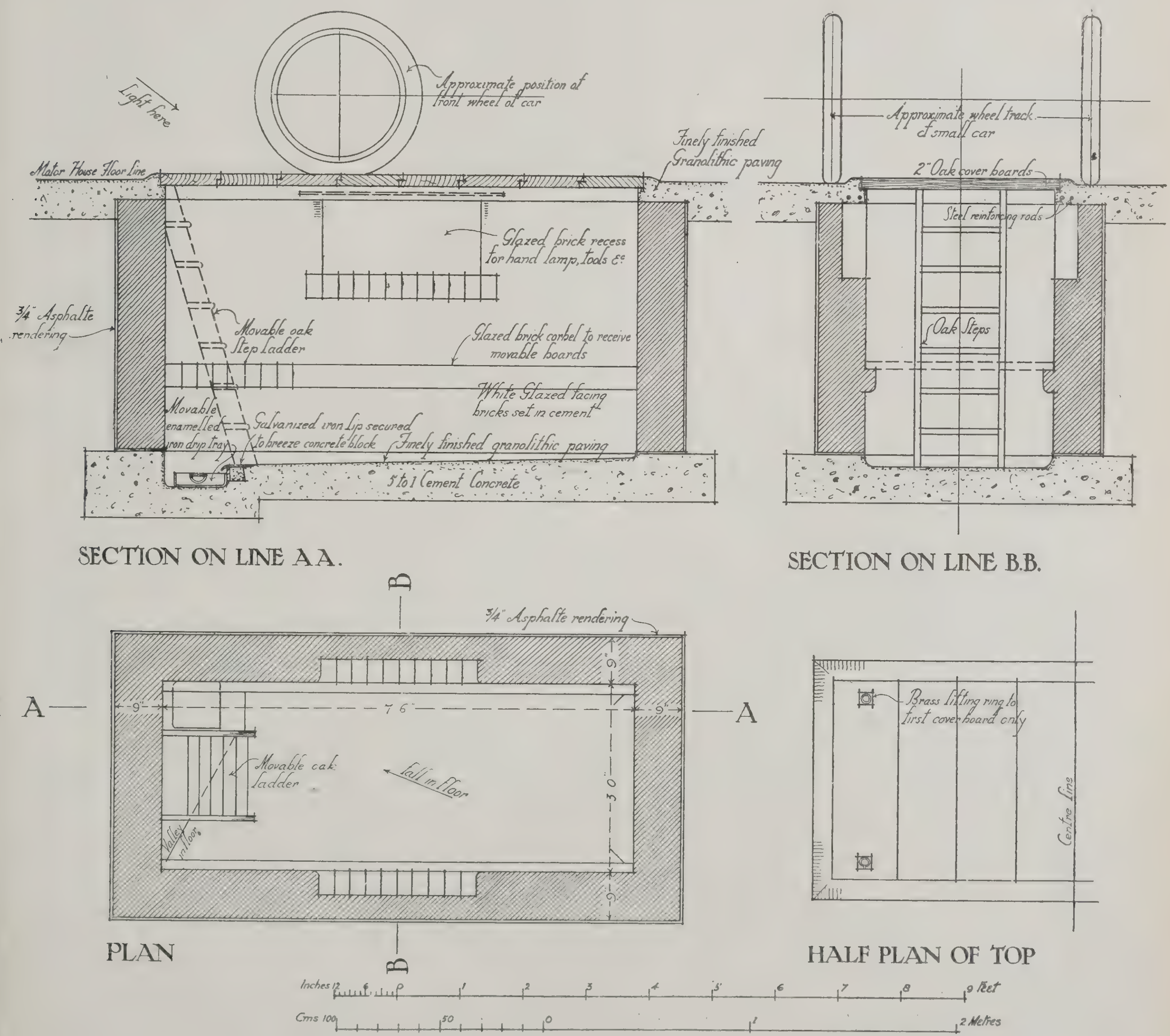
Alderman T. E. Atterby.

The death is announced, at Newtown House, Stockton, of Alderman T. E. Atterby, who was 59 years of age, and was a native of Lincolnshire, and went to Stockton about 35 years ago as a working joiner. Shortly afterwards he commenced to take contracts for work, and eventually entered the building trade as a speculative builder. In this business he was very successful. In fact, there is no man in the last half century that has done more to develop the town than he, who was responsible for building what is known as Newtown, a thickly populated modern district in the north-west of the borough.

Mr. Atterby was first elected a member of Stockton Town Council in 1893, and was elected an Alderman in 1907. Some months ago his name was mentioned as the Coronation Mayor, but he refused to allow the proposal to go forward on account of his indifferent health.

The late Alderman Atterby, J.P., we are informed by Mr. W. C. Creasor, secretary of the Tees-Side and District Master Builders' Association, was one of the founders of the following associations: The Stockton Association, the Tees-side Association, and the Northern Counties Federation. In the years gone by he was a most strenuous worker, sparing neither time nor money in the efforts to build up these Associations.

Alderman Atterby would never allow himself to be put forward for any of the leading positions in connection with the Association or Federation, preferring, as


Light here
Approximate position of front wheel of car
Finely finished Granolithic paving
Motor House Floor line
Glazed brick recess for hand lamp, tools &c
3/4" Asphalte rendering
Movable oak Step ladder
Glazed brick corbel to receive movable boards
White Glazed facing bricks set in cement
Movable enamelled iron drip tray
Galvanized iron lip secured to breeze concrete block
Finely finished granolithic paving
5 to 1 Cement Concrete
Approximate wheel track of small car
2" Oak cover boards
Steel reinforcing rods
Oak Steps
B
B
A
A
3/4" Asphalte rendering
9"
7' 6"
9"
9"
3' 0"
9"
Movable oak ladder
fall in floor
Valley in floor
Brass lifting ring to first cover board only
Centre line
Inches 12 6 0 1 2 3 4 5 6 7 8 9 Feet
Cms 100 50 0 1 2 Metres

SECTION ON LINE AA.

SECTION ON LINE B.B.

PLAN

HALF PLAN OF TOP

A MOTOR-PIT. C. HARRISON TOWNSEND, F.R.I.B.A., ARCHITECT.

he said, to do his work as a private member. There is no doubt that he could, if he desired, have attained the highest honours it is in the power of the Associations to bestow.

Mr. John Barry.

The death is announced at Scarborough of Mr. John Barry, the contractor who erected the Spa buildings. In 1857 he went, for the East Indian Railway Company, to aid in the construction of the railway between Calcutta and Delhi, and was stationed at Allahabad. Besides the Scarborough Spa buildings, which cost £60,000, Mr. Barry built the Club and Institute at Saltaire and the Bridlington sea defences and promenade. For nine years he occupied a seat on the Scarborough Town Council.

CORRESPONDENCE.

[*The Editor declines the responsibility for the statements made or opinions expressed by correspondents.*]

Gerrard v. Tanner.

SIR,—Our clients, Messrs. Tanner and Son, have placed before us your issue of Wednesday, November 23, wherein, under the heading "Legal Cases," is a report of the case of Gerrard v. Tanner, which came before Mr. Justice Scrutton at the last Liverpool Assizes.

They inform us that they attach importance to the correctness or otherwise of the report so far as it affects themselves and the plastering trade.

The judge, in fact, gave judgment for Messrs. Tanner and Son on the claim, and not for the plaintiffs, as stated in your report. The plaintiffs were, however, allowed certain costs on certain issues of fact upon which they had succeeded.

It is further inaccurately stated in the report that Messrs. Tanner and Son are sub-contractors of London and Manchester, whereas they are slaters and plasterers, of Liverpool and London.

The case did not arise out of the additions which were made to the Liverpool Consumption Hospital in 1903. The facts were that in 1903 Messrs. Tanner and Son signed one of the "forms of agreement with sub-contractors as agreed with the Manchester Assurance Co." as an indemnity to Gerrard and Son.

No claims arose in connection with that work, and no further business transactions took place between the parties until 1909, when Messrs. Tanner and Son undertook a sub-contract with Messrs. Gerrard and Son in connection with work at the Holborn Town Hall in London. One of Messrs. Tanners' workmen having been injured by the falling of plaintiffs' crane, the plaintiffs' insurance company settled the claim for £120. No other agreement of indemnity had been entered into between the parties, and the Court was asked to decide whether the old agreement of 1903 still applied.

OPPENHEIM AND SON.

May Buildings (corner of Lord
Street and North John Street),
Liverpool.

Draughtsmanship and Architecture.

SIR,—May I encroach upon your space to say how very pleased I was to see the publication of Mr. Horsley's paper, "That Fine Draughtsmanship Conduces to Fine Architecture," in your issue of November 16th? It opens out an essential to good architecture, which I fear is given but scant regard by many professional architects. It is appalling to see what little consideration is given to the governing principles of ornament in the plans of many modern buildings. A fine draughtsman could not express the incongruous and exorbitant forms that often accompany modern work, his whole being would instinctively revolt, if he had paid the necessary attention to, and study of, nature.

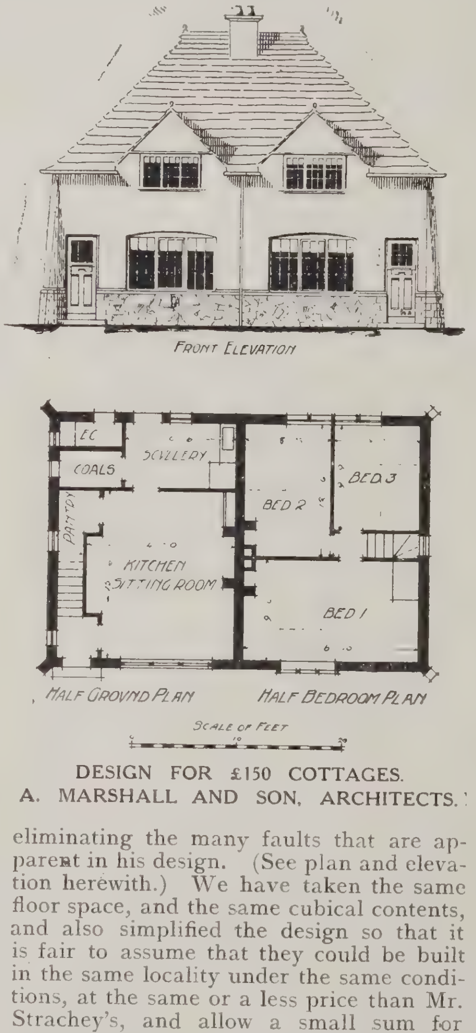
Mr. Horsley's "Fine Draughtsman" is not a superficial delineator of line, but a sincere worshipper of nature's beautiful construction in all its phases, which, when it has satiated the soul of the student, compels his work to contain the same refinement of proportion, the beauty of structural simplicity, and the perfect harmony of utility and conformity to materials.

L. FREETH BAGNALL.

Halifax.

The Minimum Cost of Cottages.

SIR,—As Mr. Strachey's achievement in erecting cheap cottages is of considerable public interest, we have designed a pair of cottages on Mr. Strachey's lines, but eliminating the many faults that are apparent in his design. (See plan and elevation herewith.) We have taken the same floor space, and the same cubical contents, and also simplified the design so that it is fair to assume that they could be built in the same locality under the same conditions, at the same or a less price than Mr. Strachey's, and allow a small sum for professional services in preparing plans and tracings for the rural authorities.



DESIGN FOR £150 COTTAGES.
A. MARSHALL AND SON, ARCHITECTS.

We have slightly altered the arrangement on the ground floor so that they will be more convenient to the average working man, as there will be found room in the kitchen sitting room for such necessary things as chairs, tables, drawers, etc., and the e.c. is so placed that it does not abut against the pantry.

Our bedrooms are also a more useful proportion, and a table is formed in the front bedroom over box headway for staircase. A bath could be fixed in the scullery, with a board over same to form a table, though this would increase the cost.

The elevations are treated in a simple manner, and much expense and future trouble are avoided by omitting the gutter which separates Mr. Strachey's cottages, while smoky chimneys are avoided by carrying the flues out in one stack at the highest part of the roof.

The materials for construction would, of course, depend upon local circumstances. We are now building some cottages in a rural district where we have used for the base an old rubble fence wall that was on the site. The stones are walled in cement mortar in rustic rubble style, which gives a very picturesque effect, and does away with the stiffness that is so unavoidable in concrete blocks.

A. MARSHALL AND SON.

Otley.

OUR PLATE.

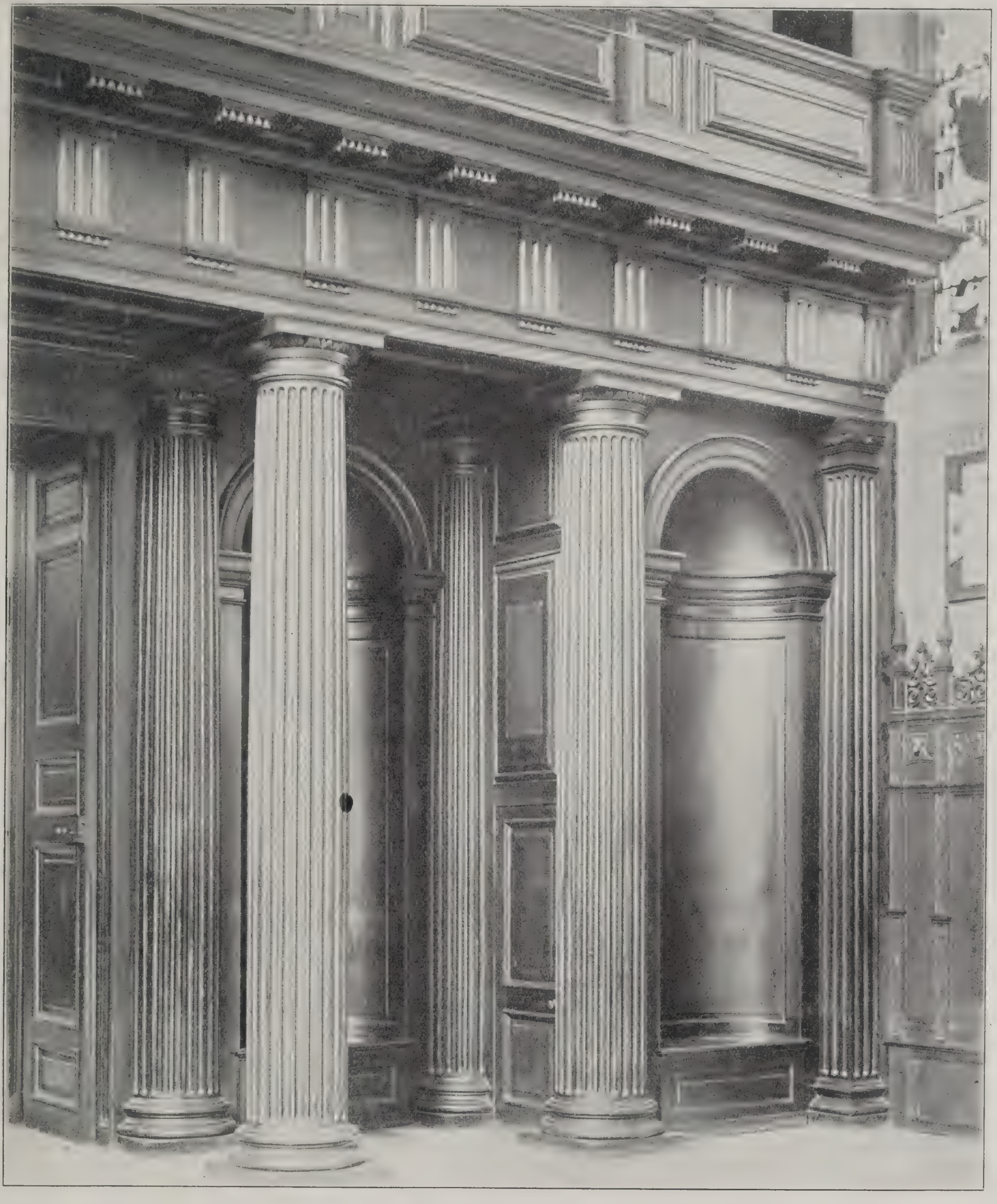
The fine arcaded entrance to the Pavillon Marengo, at the Louvre, Paris, is part of the work carried out under Napoleon I. It leads from the Rue de Rivoli into the great south courtyard.

BRUSSELS EXHIBITION.

It is reported that excellent business is being done by exhibitors in the British Section of the Brussels Exhibition. It is also stated that the English furnishing trade is now getting an immense proportion of the furnishing business of the world. Foreigners are realising more and more that what comes from British makers is comfortable, and at the same time practical and elegant. The conclusion come to on the Continent, according to a reliable authority, is that the British furniture section showed a much higher standard of excellence than the furniture sections in any of the other foreign pavilions. As regards British pottery, it has become famous among the world's greatest connoisseurs, and thousands of pounds' worth have been sold. On the buildings, decoration, and furniture committee directly responsible for this section are: Mr. C. C. Allom (chairman), Mr. W. H. Romaine-Walker (vice-chairman), Mr. A. Barnard Cowtan, Mr. John H. Gill, Mr. H. P. E. Harding, Mr. Thomas C. Moore, Dr. Louis C. Parkes, Mr. G. W. Partridge, Mr. F. Litchfield, Mr. H. D. Searles-Wood, F.R.I.B.A., Sir Horace Regnart, Mr. E. White Wallis, Mr. S. J. Waring, and Mr. Frank Warner. For Turin these gentlemen are arranging a still more remarkable show than the one in Brussels. Not only furniture, but all the accessories which go to perfect an English living-room, and which are much sought after by foreign hotel proprietors, are to be shown.

BELLSHILL BAPTIST CHURCH.

These buildings, which have just been completed, occupy a prominent site at the corner of Neilson Street and Motherwell Road, and consist of church, vestry, ladies' and gentlemen's retiring rooms, lavatories, and heating chamber. The style adopted is late fifteenth century Gothic. The walls are of red sandstone, and the roofs are slated with green slates and red tile ridging. The main doorway is in the front vestibule, from which there is access to the area, and two stairs to galleries. The galleries are carried on cantilever, so that there are no columns to obstruct the line of vision. The church is seated for 550 persons, and has open timber roof, and the windows are filled with leaded glass. The architects are Messrs. Miller and Black, F.R.I.B.A., Glasgow.

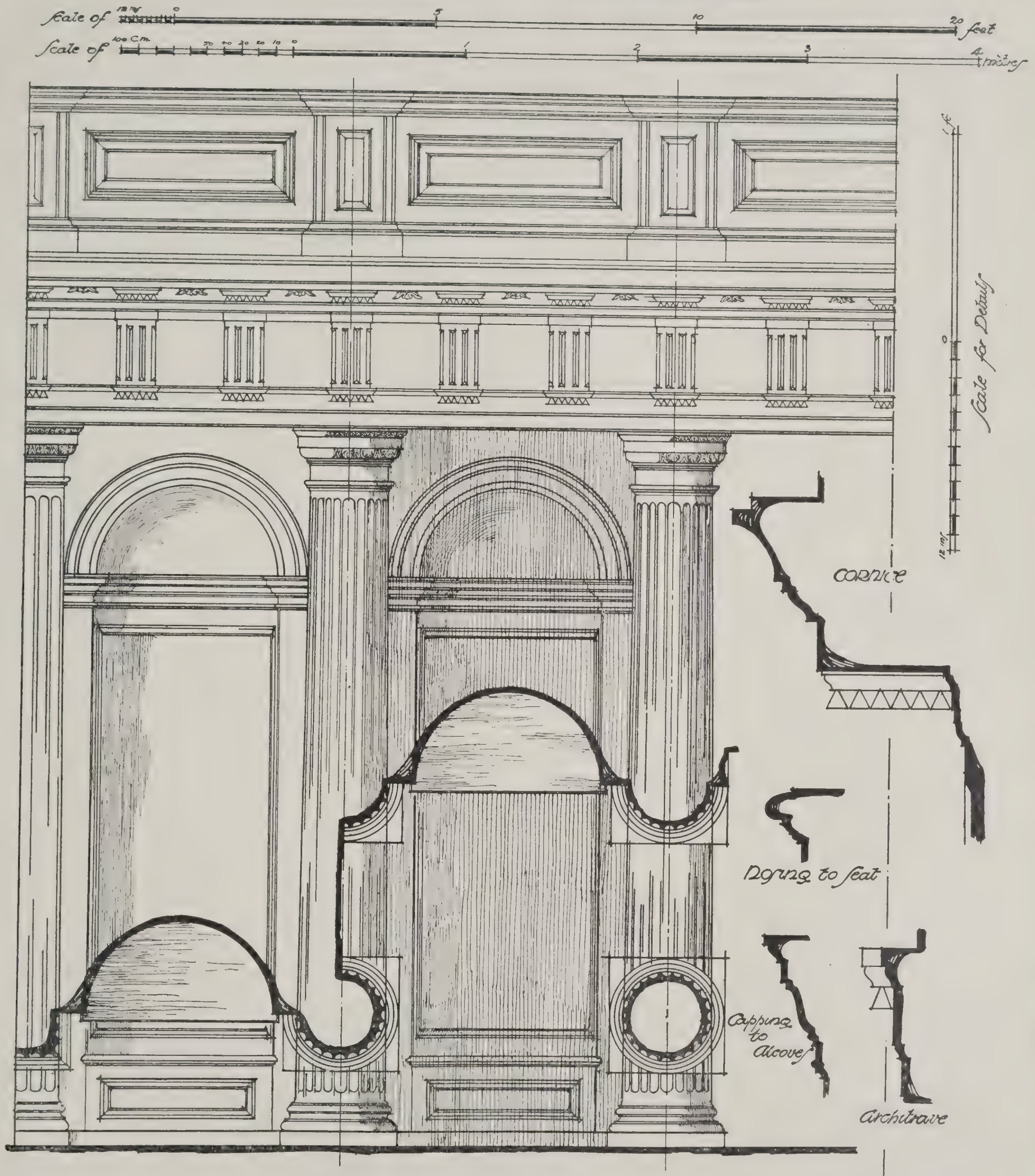


This screen is part of the reconstruction scheme commenced by Dr. Bentley in 1706. At that time the old woodwork of the chapel was entirely removed (with the exception of the panelling to the ante-chapel, of Elizabethan type, shown on the right-hand side of the above photograph), and was replaced by woodwork of Later Renaissance character. This is among the best woodwork to be seen at Cambridge.

DETAIL OF ORGAN SCREEN IN CHAPEL, TRINITY COLLEGE, CAMBRIDGE.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

- SCREEN - IN - CHAPEL -
- TRINITY - COLLEGE - CAMBRIDGE -


Scale of 12 ins 0 5 10 20 feet
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1 ft
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12 ins
Scale for Details
Cornice
Nosing to Seat
Capping to Alcoves
Architrave

- HALF - ELEVATION -

The screen is entirely of mahogany, now mellowed to a beautiful rich tone. It was originally 17 ft. in depth, and occupied the whole of the fifth bay of the chapel, counting from the west end, but in 1867-70, when considerable alterations were made, the depth was reduced by 7 ft., and the screen, with the stall work, was taken 7 ft. nearer the west end, and the organ enlarged. The name of the original designer is not known.

MEASURED AND DRAWN BY FRANK T. DEAR.

NOTES ON PAINTING AND DECORATION.

BY ARTHUR SEYMOUR JENNINGS.

Washable Distempers.

No material used by decorators has made greater progress in public favour during the last ten years or so than the so-called "washable distempers" or "water paints." The latter term is certainly preferable, because the word "distemper," or, as our American cousins are fond of calling it, "Kalsomine," has been known for centuries, and the composition is well defined, consisting of whiting reduced to a fine powder mixed with a binding material such as glue or size. The ordinary whitewash used for finishing ceilings is a familiar example. A simple addition of water renders the distemper suitable for application with a flat brush. Distempers owe their popularity to their cheapness, simplicity, and property of "body," i.e., the quality of obscuring the surface to which they are applied. When mixed with water, whiting has a remarkably high quality of body, although when with oil it has practically no body at all.

Doubtless distempers also have their advantages over other paints from a sanitary point of view, although it is claimed in some quarters that the size or glue being of animal origin must necessarily decay, not to say become putrid. As against this, however, there is the fact that the whiting itself partially, if not wholly, checks this decomposition. Again, it is a simple matter to add a few drops of a disinfectant such as "Cyllin," which will keep the size sweet for a considerable time. It may be pointed out here that lime wash or lime white, which is used so extensively for purifying cattle pens, finishing the walls of warehouses, etc., is entirely different from ordinary distemper, and should not be confounded with it.

Of course distempers are not in any sense washable, although sufficient binding material is added to them to prevent their accidentally rubbing off, as, for example, on one's coat, which may be brought in contact with the surface. As they are not washable they may be readily washed off when it is required to renew the work, and freshly made distemper can be brushed on the plaster, and the room be rendered quite fresh and sweet again.

Some fifteen years or more since, an enterprising manufacturer of considerable scientific attainments placed on the market a new form of distemper which might be properly called a water paint. Its essential virtue was that after a few weeks it became so hard that it could be washed down with a moistened sponge, and that after some months it might be scrubbed if necessary. At the same time it retained all the beauty of a flat distemper entirely free from gloss, and was therefore most valuable for surfaces which were somewhat uneven. Since that time a very large number of water paints, claiming to be as good as or even better than the original, have been brought out, and the present consumption reaches very large figures which will probably be increased as time goes on.

No doubt the many beautiful colours in which water paints are now made had a great deal to do with their rapid increase in public favour. When the old distempers were used, say, for example, in finishing the interior of a church or chapel, or, perhaps, a public hall, one was hardly able to go beyond a series of crude buffs, bright vivid greens, or insipid light tints of ultramarine, and the result was wholly inartistic and unsatisfactory. Now, there is no difficulty in obtaining almost any colour desired, including some very beautiful shades of heliotrope, rich browns, and a whole series of reds, neutral greens, and such colours as royal blue, peacock blue, dull purple, jade green, golden yellow, and a hundred and one other shades and tints which would satisfy the most critical, the only difficulty being in the actual selection of an appropriate colour for the particular room in which it is to be used.

It is probable that the lavish use of ornament in wall papers which characterised the designs a few years ago caused a revolt or reaction and brought about the present demand for flat surfaces. It is true that one can obtain a flat surface on a wall by means of an ingrain or lining paper, but the joints in the latter show all too conspicuously, while ingrains are notoriously bad for holding their colour; indeed, so fugitive is the colouring matter in many of even the most expensive ingrains that during the past season, the number of these goods placed in the pattern books is probably less than one half of what it was for the previous season. The writer conducted a series of experiments some time since with a large number of different ingrain papers, and he found that almost without exception the bright coloured ingrains faded considerably after only a few weeks' exposure, the only exceptions being those light browns and yellows which were evidently coloured with earth colours such as ochre. It is not improbable that ingrain papers will in a year or two cease to be used at all unless the makers can improve their lasting qualities as far as colour is concerned.

I have often been asked the question, "Is there a really washable water paint on the market?" The answer is in the affirmative, if by "washable" is meant one that may be sponged or washed down after a few weeks from its application. But if the question means can a washable distemper be scrubbed down within a week from the time it is applied, then I should say that there was nothing in the market which can be guaranteed to resist this; and, after all, it would not be much advantage if it did possess such a quality, because a wall does not get so dirty in a week as to render it necessary that it should be washed down.

For obvious reasons, I do not here recommend any particular make of water paint, but I think I can say without fear of contradiction that of the many on the market, not more than a dozen or so can be really ranked as first class. There are a number of such goods which may be considered as of fairly good quality, and many that really have no claim whatever to be washable.

Architects and property owners are sometimes prone to expect too much from a material such as water paint. They expect that it must be successful under every and any condition, although it is well known that a skilful painter will make a thoroughly good job by using a certain brand of water paint, while another will, from his lack of knowledge, produce very bad results indeed. Of course, the material is always blamed in case of failure, although the painter is perhaps in nine cases out of ten really at fault. "I don't like them new fangled distempers; give me the old fashioned sort," is a remark frequently made by some inconsiderate old-fashioned journeyman painters, and when they are compelled to use the "new fangled" material they do not give it a chance. Instead of studying its peculiarities and necessity for careful application, they do what is called in the painters' parlance, "sling it on the wall." Very frequently indeed the carefully written directions for use are taken no notice of at all. Some water paints are mixed with petrifying liquid, and the warning is given by the manufacturers that under no circumstances is water to be added, yet the journeyman painter thinks he knows better than the manufacturer, and although quite ignorant of the composition of the paint will sometimes insist on adding water, with the result that the job is ruined. In passing it may be said that this actually occurred some years ago in a case where an action was tried in the Law Courts, and, marvellous to relate, the manufacturers had to suffer, although it was shown clearly they had given a specific warning against the use of water, and in this particular case water had been used.

Some washable distempers are supplied in powder form, others in paste, and either hot or cold water may be used, according to the nature of the materials. In every case the exact quantity of water to be added is given, and the purchaser is distinctly informed whether it is desirable to use hot or cold water. To sum up, then, we can only advise the reader who decides to have a room decorated with water paint, because he is fond of a beautiful flat surface, and because he can get admirable colours at a very cheap rate, to see that the directions are very carefully followed, and that the work is done by a journeyman of experience.

A cause of failure which is frequently overlooked is the condition of the plastered surface of a wall. If the reader will consider for a moment he will see that in the case of old walls, some portion of them may have been repaired on many occasions, and that it is not improbable that the plaster employed may have been different in each case. Now, a distemper, whether washable or not, that will suit admirably one plaster may be quite unsuitable for another, so that practically it is impossible to get a clear level surface under the conditions named, and of course if the surface is not level and absolutely free from gloss the job is ruined. The best thing to do under such circumstances is to use a white lining paper all over the wall, and when dry to apply the water paint on it.

One quality very much in favour of this class of paints is that they will in nearly every case be found to be permanent in colour, and in this they present a very strong contrast to ingrain and other wall papers, as already pointed out.

A few words in conclusion may be added as to the use of flat enamels, although not forming a part of this subject. There are many cases which occur in the decoration of public buildings of the highest class, such for example as the drawing-room of a a first-class hotel, town hall, or a church where a distemper, if even it is washable, might be looked upon as hardly of sufficient good quality to rank with the rest of the building. In such a case a flat enamel is eminently suitable, although of course it costs considerably more than washable water paint. Flat enamels are easily applied, they give a beautiful flat surface, and have decidedly a refined appearance. Very shortly after application they may be washed or even scrubbed, and it is highly probable that it would be found more economical in the end to use flat enamels on ceilings instead of whitewash, as at the end of a given time they can be washed down and rendered practically new again, while the coat being very thin the delicacy of the ornamentation in the plaster would not be interfered with as must necessarily be the case where a thick coat of distemper is used.

THE NEW ENGLISH ART CLUB.

The exhibition of the new English Art Club, at the Suffolk Street Galleries, seems to indicate that the club is becoming somewhat less of an association for the representation of the crude and ugly in Art than it used to be. It contains at all events one beautiful work, Mr. Orpen's "Afternoon on the Cliff," in the south-east room, a landscape with a single figure which is quite a perfect example of balance of style and feeling. If Mr. Orpen can paint like this, why does he not do so always? His other work, "Midday on the Beach," we do not admire.

There are some finely composed landscapes in the exhibition; we say advisedly "finely composed," because the aim in landscape, in the new English Art Club, seems to be to give a broad representation of the facts of landscape, arranged with reference to a plan of composition, but without the slightest effect of sunlight or atmosphere. The committee have secured a large landscape by Mr. Mark Fisher (much larger than he usually paints), of which the foreground is in his usual broad and powerful style, but there seems to be no distance; the sky is like a wall with clouds painted on it; and there are many other examples of the same kind. Mr. McEvoy's "Dieppe Harbour" is an exception, and Miss Alice Fanner's landscapes are always of interest. Mrs. Cheston's landscapes might possibly be very useful as studies or memoranda.

Mr. Von Glehn's portrait group of two girls has character and interest, and so has Mr. Russell's half-length, "Gillian"; an expressive face with a picturesque head-dress. Some of the other figure-subjects, preumably portraits, are almost incredible in their apparently deliberate ugliness and vulgarity.

There are a great many more or less interesting sketches and studies, pencil and water-colour, in the rooms devoted to that class of work; among these we notice that Mr. Windham Tryon is a really good architectural sketcher; that Mr. Manson exhibits a sketch of the well-known "Gate of Honour, Caius College," which is hopelessly out of perspective; and that Mr. Orpen's pencil subject, "The Draughtsman and his Model," is a remarkable and pathetic work which might be well worth developing into a painting on a larger scale.

NURSES' HOME AT THE ROYAL PORTSMOUTH HOSPITAL.

This building has been erected on the site of the old outpatients' department and stores block, and, to economise space and reduce the cost as much as possible, the new building has been carried forward to the boundary on Fitzherbert and Clarence Streets.

It will occupy a length of 98ft. on each street when completed, but at present the Fitzherbert Street frontage is incomplete, and only occupies a frontage of 54ft. 8ins. To complete the building, it will be necessary to pull down the present stores block. When this is done, greater air space and better lighting will be afforded to the operating theatre and the other blocks.

The site is very favourable for aspect, as all the rooms in the building will, during some part of the day, have the sun shining into them, except those in Fitzherbert Street.

In planning the home, the connection to the future administration block has been borne in mind, and the main entrance will be placed at the east end of the building, so that it may be connected ultimately by means of a short length of covered way with the new administration block, which will be erected midway between the nurses' home and the outpatients' department. At present the temporary entrance is connected up with the existing corridor at the back of stores block, etc.

The building is arranged with a central corridor, 5ft. wide, traversing it from end to end on each floor, with rooms opening from it on both sides. The corridor is lighted and ventilated by windows at each end, and also at the centre and intermediate points where the staircases run up.

The building is constructed with concrete floors throughout, and is as fire-resisting as buildings can be erected. The staircases, 4ft. wide, one at each end of the building, from ground to third floor, are of concrete.

There is a total present accommodation of 53 bedrooms, excluding the sick-room and isolation room. Ultimately the total will be 79 bedrooms.

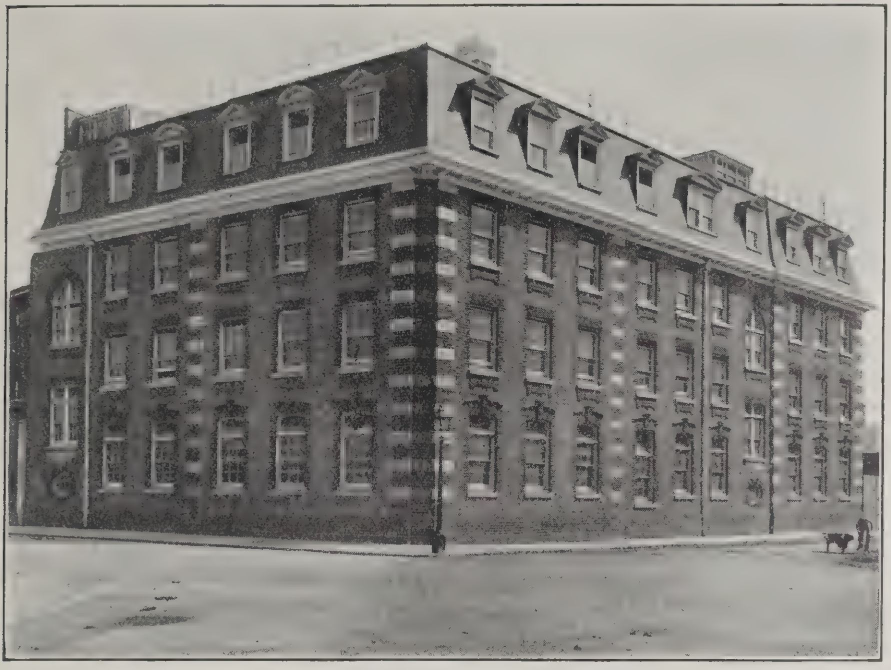
Fireplaces have been provided only for the sick room, assistant matron's, and isolation room. Ventilation is obtained in the bedrooms by small hopper sashes, which open into the corridors which will be thoroughly heated by hot water radiators.

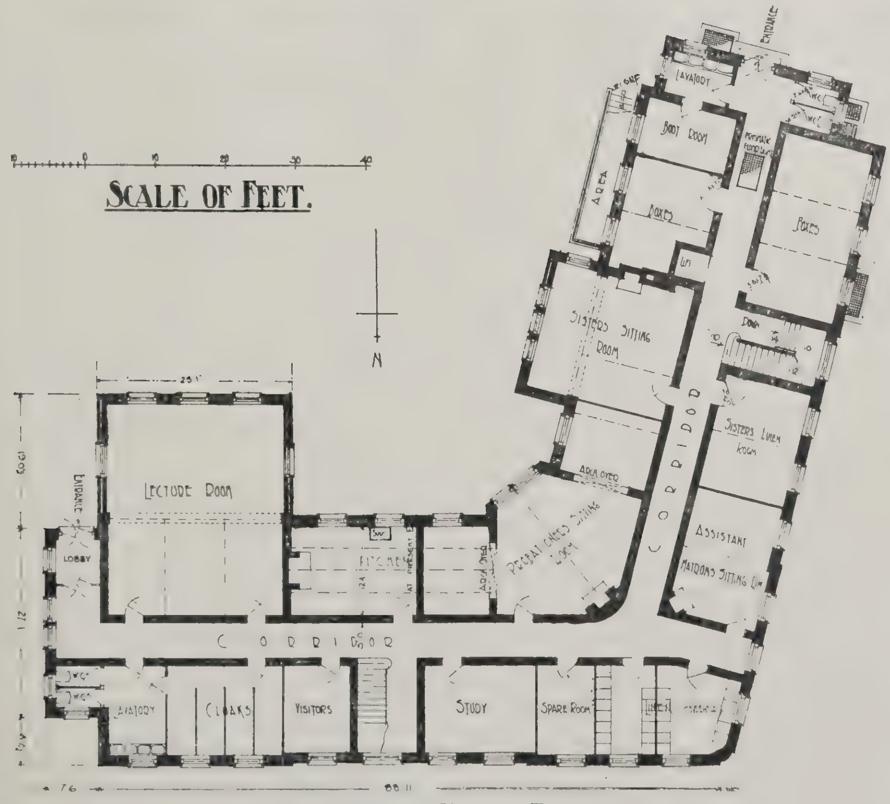
The external walls are built with yellow clamp bricks, with red kiln brick dressings and Portland stone quoins to all angles.

The roof has been framed as a mansard, and a floor of bedrooms formed in it. The vertical faces of the roof are covered with tiles, and the flat on top is laid with asphalt. Two staircases are provided up to the roof, so that easy access can be obtained to the flat, and a very pleasant look-out is thus afforded.

The cost of the building to the present has been £7,300, exclusive of furniture, etc. A further sum of £2,500 will be required to complete the building at a later date, when the growth of the hospital demands further extension.

The heating is on the "Cable" system, and one boiler is provided for this and the domestic hot water supply. This work has been carried out by Messrs. J. F. Phillips and Son, of 21, Old Queen Street, Westminster S.W., and Brighton and Liverpool. The general contractor was Mr. S. Salter; the architect, Mr. C. W. Bevis, F.R.I.B.A., both of Portsmouth.





GROUND FLOOR PLAN.

NURSES' HOME, ROYAL PORTSMOUTH HOSPITAL, LANDPORT.
C. W. BEVIS, F.R.I.B.A., ARCHITECT.

ENFORCEMENT OF BY-LAWS

BY OUR LEGAL EDITOR.

As many by-laws are in force throughout the country which interfere, in a mild way, with the liberty of the subject, the question of their enforcement is of importance.

Suppose that a builder is laying out a building estate, it may be very much to his interest that if the by-laws of the district are enforced against him they shall also be enforced against other people.

Take a very simple case. Suppose there is a by-law which prevents my neighbour building an external wall on his land unless he builds it of a certain thickness. This is a matter of vital importance to me; because if he built a wall, say, 40ft. high, and only a few inches thick, close up against my external wall, such a structure would never stand by itself. In the result, if it became necessary for me to take down my external wall, his would come down too, and he might sue me for trespass. Further, it is clear that in the course of time he would acquire a prescriptive right to support, which would effectually prevent my interfering with my own wall so as to disturb his.

Now assume that the local authority, which is charged with seeing that the by-laws are observed, has failed in the performance of that duty, either by passing plans for a thin wall which should have been much thicker, or by refusing to prosecute, have I any remedy?

One thing, at any rate, was made clear a few years ago. A local authority has no right to sanction a breach of its own by-laws. Consequently, it is no answer for a man who has built in contravention of the by-laws to assert that the plans were passed by the surveyor. This was decided in Yabbicom v. King (1899), when it was held that a local authority empowered to make by-laws has no power to sanction a contravention of by-laws properly so made; and, therefore, the approval by a local authority of building plans which contravene the by-laws made by that authority is illegal and inoperative. In that case, Day, J., said, "By-laws have the effect of law which it is not within the power of any body which exercises authority or quasi-public authority for the time being to dispense with. Such bodies are no more entitled than are private persons to dispense with the law of England."

It is one thing to say that a local authority may not sanction a breach of the law; it is another to say whether they can be compelled to enforce it.

The by-law imposing penalties generally assumes some such form as this: "Every person who shall offend against any of the foregoing by-laws shall be liable for every such offence to a penalty of five pounds, and, in the case of a continuing offence, to a further penalty of forty shillings for each day after written notice of the offence from the Corporation." Can a prosecution be set on foot or an information laid by any person other than the local authority?

It has been held in various cases that by-laws may sometimes be enforced by persons who are not directly entrusted with the duty of making or carrying them into effect. So in Badcock v. Sankey, a tramway company made by-laws forbidding more than a certain number of persons to be carried in a car, and providing that conductors shall be liable to a penalty for infringement of any of the by-laws. It was held that a passenger incommoded by an excessive number of passengers was entitled to prosecute a conductor for breach of the by-law.

But then the question arises—Is an adjoining owner entitled to prosecute for penalties? The Public Health Act, 1875, s. 253, provides that "proceedings for the recovery of any penalty under this Act shall not, except as in this Act is expressly provided, be had or taken by any person other than by the party aggrieved, or by the local authority of the district in which the offence is committed, without the consent in writing of the Attorney General."

Is the adjoining landowner "a party aggrieved?" Now his rights do not really become affected until he begins to interfere with his own wall. He has no immediate fear of anything; all he fears is what may happen in the future. In these circumstances, it is very doubtful whether he would find a hearing before the magistrate.

As a matter of law, therefore, it may be considered debatable whether any good would come of a summons to enforce compliance with a by-law, unless the proceedings were commenced by the local authority. At the same time, a very interesting moral effect might be produced by the public allegation that the local authority had deliberately refused to compel one builder to do that with regard to which an obligation had been imposed on others.

"AN OUTSIDE INTEREST IN BUILDING."

Mr. A. D. Steel-Maitland, M.P., was the guest, on November 21st, of the Birmingham Building Trades Employers' Association, who held their annual dinner at the Grand Hotel, Colmore Row, Mr. Ralph Webb, president of the association, in the chair.

Proposing "The Birmingham Building Trades Employers' Association, and the Trade of the City," Mr. Steel-Maitland said, in the course of an exceptionally interesting speech, that as a matter of fact, if there was a needed reform it was in private bill procedure affecting the trade of the country, and he promised he would do all he could in this direction to the best of his ability. Into the causes of the depression in the building trade he would not enter. But there were two points on which he wished to lay some emphasis. One was purely a matter of speculation as it appeared to one not engaged in any one of the trades covered by the association. Would it not be possible to have a style of building which would do more justice to the increased varieties and facilities in the matter of material which they at present possessed? He had on many occasions to enter buildings of various historical styles; and he found they reflected the materials which those who lived at the time had at their disposal. Anyone could note this who studied the history of the building. He once made a bet that in ancient Rome there were not three examples of a true arch which possessed a lateral thrust. He was sorry to say the arbitrator managed to produce five instances, and he lost. As one who took an outside interest in buildings, it appeared to him somewhat strange that with the use of iron, and its handmaiden—if he might so call it—reinforced concrete, they should not have evolved something of a newer style than they had hitherto been able to manage.

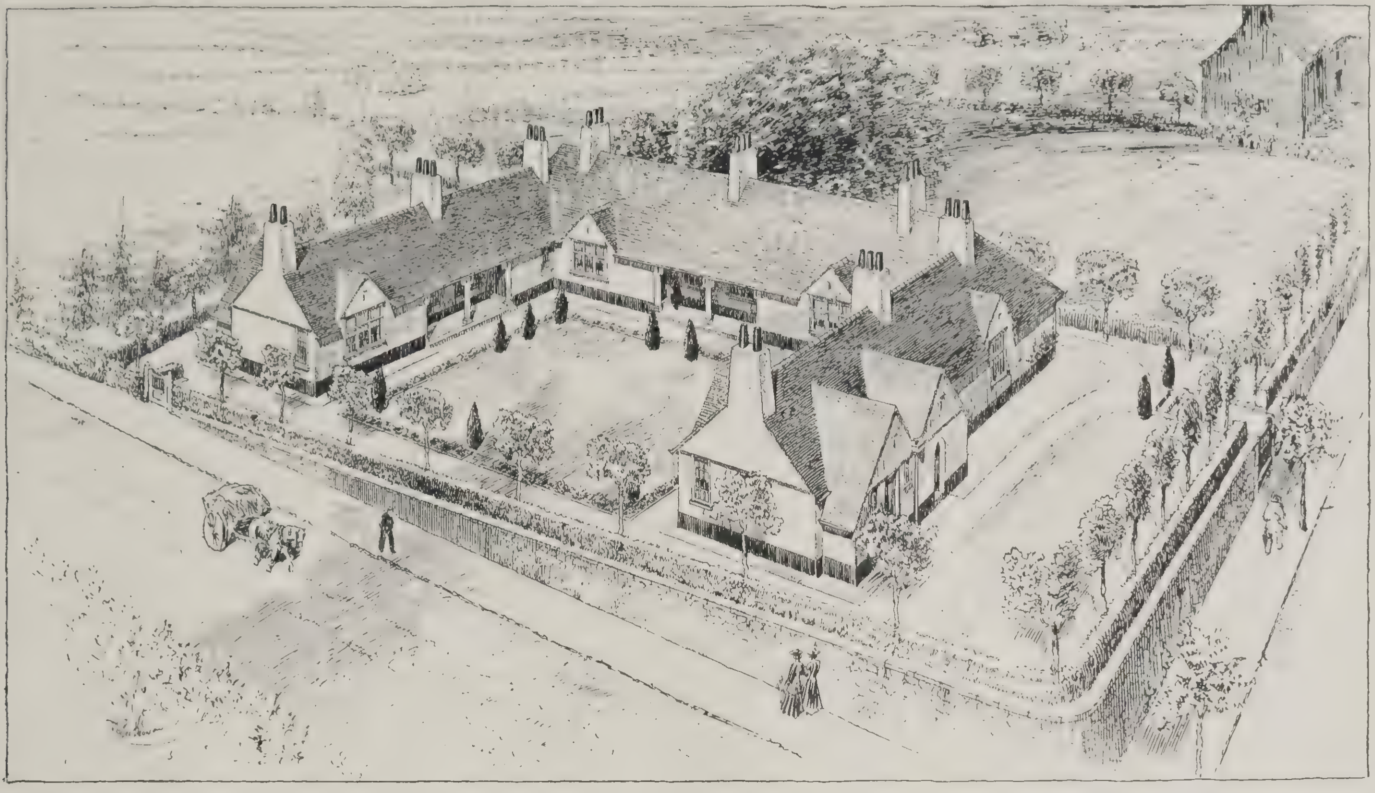
There was another point—which was more practical—to which he would draw attention. If there was one thing of importance engaging the attention of the practical mind to-day it was the growth of the suburbs of a great industrial centre like Birmingham, and other great cities of the kingdom. Only recently he had occasion to say he believed it was quite practicable to indulge in the luxury of a garden city in which houses could be built, if they could be let, at a rent of 8s. a week upwards; but that the crux of the situation came when they had to build a house that would let at 5s. a week or a little more. At the same time, he said, he believed it possible. He was afterwards taken to task by a practical Birmingham builder, who said he could prove it was impossible. For himself, he did not believe it was impossible. Part of his trade in life was to be a suburban landowner. It had been his lot to build one or two small houses for himself, and he had come to the conclusion that such a development was possible, provided, and provided only, there was relaxation in the matter of building by-laws, and with regard to roads. He believed that a demand for some such type of new development of the suburbs was bound to come. Therefore, he suggested it was worthy of an important association like theirs to consider what steps should be taken to meet it. He believed the demand was justified. If they analysed present conditions, they found the ordinary type of work for the ordinary workman had been rendered, on the whole, less interesting by the great subdivision of machinery. Where a man's work was rendered less interesting, it was necessary, if possible, to give him a home which supplied the interest his work no longer possessed. Through the influence of Education Acts, a generation was growing up who were conscious of the need for that interest. These were reasons which made him feel that not only was the demand for a new type of suburb justifiable, but, justifiable or not, it was absolutely bound to come in the near future. Therefore, he said if the new movement were coming, it was worthy of their serious consideration, and it would be to the infinite credit of the association if they took the lead.

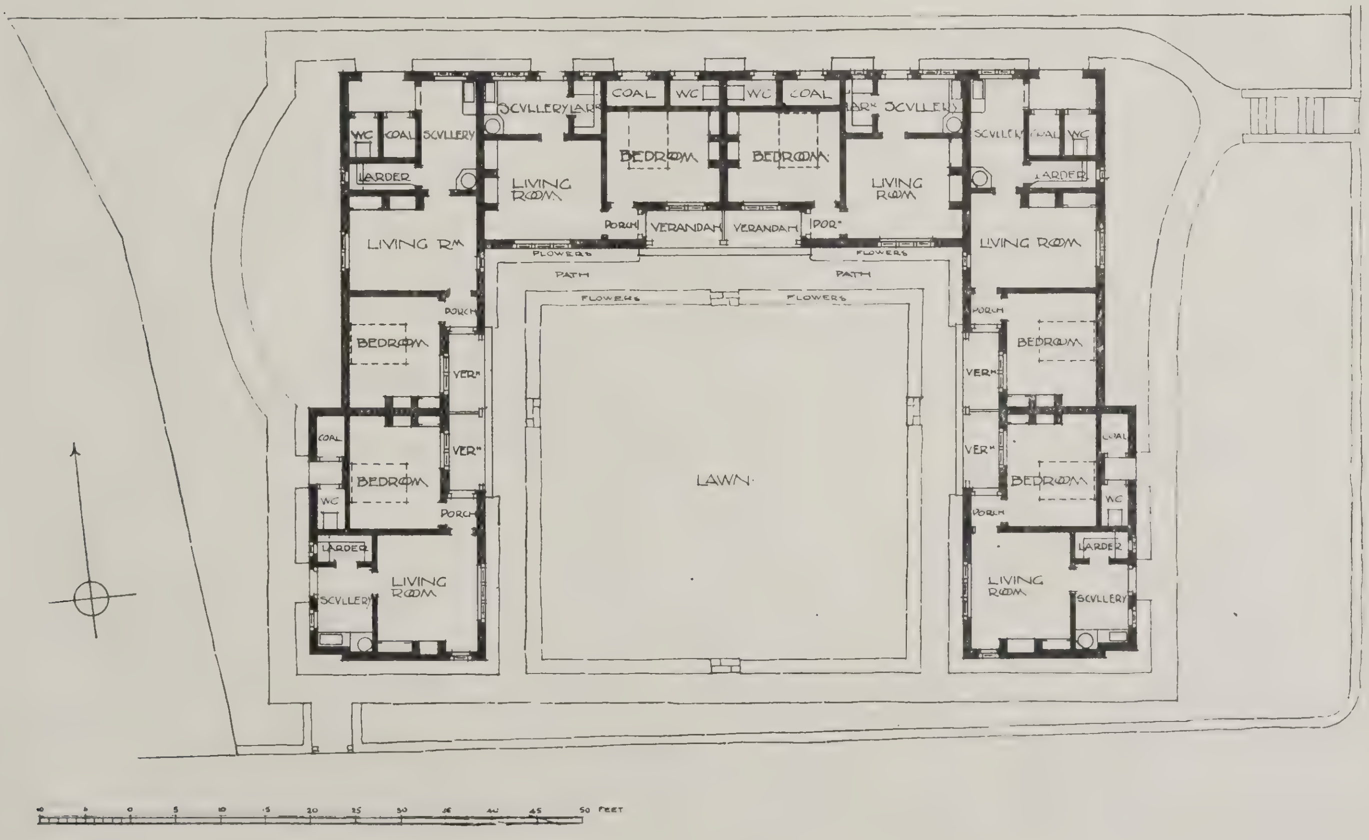
Fashions in Architecture.

Mr. George Elvins proposed "The Architects and Surveyors," coupled with the names of Mr. G. Salway Nicol (vice-president of the Birmingham Architectural Association), and Mr. J. Kirkham Dale. He said there appeared to be fashions in architecture, just as there were in ladies' hats and frocks. They might yet live to see the merry widow gable, and very possibly the hobble cornice. At present the fashion appeared to be to make their mortar joints almost as thick as their bricks and apparently to get as many colours as possible into their bricks, tiles, and slates. That was quite the reverse of what obtained a few years ago. There seemed to be a revival in the use of stone for dressings, etc. Upon this architects were, he was sure, to be congratulated, for, apart from the fact that nothing enhanced the beauty of an elevation so much as stone no substitutes could, in his opinion, compare with the genuine article. Timber appeared to be the only thing which maintained its old tradition, and if someone would write a specification applicable only to timber he would earn the gratitude of the entire trade.

Messrs. Nicol and Kirkham Dale responded.

The other toasts were "Kindred Associations"—proposed by Mr. J. J. Moffat, and responded to by Mr. S. Smethurst (president of the National Federation), and Lieut.-Col. J. Barnsley (president of the Midland centre)—and "The Visitors."





These homes are proposed to be erected by public subscription at Ilkeston, to the memory of the late Alderman Francis Sudbury, J.P., the object being to provide a refuge for aged poor who are in receipt of old age pensions, or who have means equal in amount to the same. It will be seen from the plan and perspective that the houses are arranged round three sides of a square facing south, so that the living-rooms are sheltered from cold winds and obtain the maximum amount of sunshine. The whole of the walls are to be built of brick, plastered inside and rough-cast stuccoed outside, with tarred brick plinth; the roof to be covered with hand-made red tiles. The architect was Mr. H. Tatham Sudbury, M.S.A., of Ilkeston.

MEMORIAL HOMES, ILKESTON. H. TATHAM SUDBURY, ARCHITECT.

TWO IMPORTANT LEGAL DECISIONS.

Two cases in which important principles are clearly enunciated are here summarised. The decision in Wallace v. Douglass confirms the view generally held by builders as to what constitutes a lump-sum contract, and reverses the decision of Mr. Justice Ridley. In the case of Crittall v. London County Council, Mr. Justice Channell held that specialist contractors are entitled to recover from the building owners, rather than from the trustee of the chief contractors' estate.

What is a Lump-Sum Contract?

At the Newcastle-upon-Tyne Winter Assizes, on February 17, 1910, Mr. Justice Ridley heard the case of Wallace v. Douglass, in which James Winskill Wallace claimed from Messrs. J. and G. Douglass the sum of £138 16s. for work done and materials supplied. In 1906 the Corporation of Newcastle advertised for tenders for the erection of slaughter-houses, etc. Plaintiff, a plumber and sanitary engineer, of Leases Park Road, Newcastle, got in touch with the firm who were eventually appointed chief contractors—Messrs. J. and G. Douglass—and, having seen the bill of quantities for the plumbing work, offered to undertake that work in these terms: "My price for plumbing work for the above as per quantities is £915 16s." Counsel for plaintiff stated that, on the representation that "the quantities were full," plaintiff was induced to lower his tender to £904 10s. 9d. Messrs. Douglass made their contract with the Corporation on April 27, 1908. Wallace, after he had sent in his account, was told that he would be paid after his work had been measured up, and then his account was consequently cut down by £105. Plaintiff repudiated payment by measurement of the whole work; and his counsel contended that he was entitled to resist an attempt to convert a lump-sum contract into a measurement contract—that although a contract had been entered into for £904 10s., there was an attempt to throw over that agreement, and to substitute a sum dependent on the measurements and not mentioned in the contract.

His lordship, having heard the evidence, held that the contract was for a lump sum. "The question," he said, "on which this dispute has arisen is that there has been less lead used than was expected to be used. My ruling is that the plumber gets the benefit of it unless it is caused by deviations."

Mr. Shortt (counsel for the defence), commenting upon this ruling, said it was well recognised that where the plans and specifications and bills of quantities were the basis of the contract, that was a lump-sum contract; but a bills of quantities contract is taken out item by item. Defendants' case was, he said, "that you have to take as the basis of the contract not the total of the bills of quantities, but every single priced item. If it were not so, we must have specified to him exactly the work he has to do, and then let him send in his lump-sum tender for it. But he simply gets this bill of quantities priced out so much lead at so much, so many nozzles at so much, and then this is a schedule from which the prices can be estimated; and the basis of the contract is not his total of £904 10s. 9d., but each item in that list of prices at which he will do it." He asked his lordship "to make a note of my contention that this contract is a contract based upon bills of quantities, and it is not a contract at all based on plans and specifications."

His lordship suggested that before proceeding further with the case the parties should have the variations ascertained. If the case were brought before him at Durham, Leeds, or York, he would consider the surveyor's report.

The case again came before Mr. Justice Ridley in the King's Bench Division, on April 26, 1910, when the surveyor having made his report, Wallace's counsel, Mr. Mitchell Innes, applied for judgment for £75 13s. 9d., and costs on the High Court scale. For the defendants, Mr. Shortt pointed out that, according to the surveyor, if it was a lump-sum contract, based upon plans, drawings, and specifications, £75 was due, but if it was based on quantities then there was only £6 due. He submitted that plaintiff was only entitled to this £6.

Mr. Justice Ridley thought the finding for £75 13s. 9d. was the right one. He ordered judgment for plaintiff, with costs.

The appeal was heard before the Lord Chief Justice, Lord Justice Buckley, and Lord Justice Kennedy, in the Court of Appeal on October 28, 1910.

The Lord Chief Justice, in delivering judgment, said he disagreed with the view taken by Mr. Justice Ridley that this was a lump-sum contract. "It certainly is not," he said, "a contract to do the work for £904 10s. 9d., however much I have got to do, or however little I have got to do. . . . I think the contract means this: I will do the work specified in those quantities at those prices; but if I am not called upon to do the work specified at those prices, I shall not be paid for it. In other words it is, practically speaking, that where less work was done in fact making that deduction at the schedule price, and where more work was done adding that amount at the schedule price at the figures appearing in the bill of quantities. The essence of a strict and ordinary lump-sum contract is, that you get your money though you do not have to do certain things. . . . I think that the words 'Sizes and measurements to be taken from the drawings, instructions, and measurements on the buildings, and not from the quantities,' point distinctly to the fact that the measurements were not to be taken from the quantities, but were to be taken either from a drawing or from instructions or from the building itself. And then the instruction says definitely, 'All work measured net of the sizes to be executed, all openings to be deducted, and only the amount of material used or work required to be done is measured.' . . It obviously is a direction that the quantities have been prepared upon the basis of measurement of the actual work done, and that the work will be paid for on that basis."

Lord Justice Buckley and Lord Justice Kennedy agreeing, judgment was entered for the award of £6 13s. 9d. and that the appellants were entitled to the costs of the appeal; respondent, however, being entitled to the costs of the action and of the reference.

Messrs. Ritson and Hope, of Sunderland, were solicitors for the successful appellants.

"Sub-Contractor" Recovers from Building Owners.

In the High Court of Justice (King's Bench Division), on November 4, 1910, the Crittall Manufacturing Company, Limited, sought a declaration that a contract was made between them and the London County Council for the execution of certain works—the supply and fixing of a number of metal casements, etc., for an addition to the L.C.C. School of Building, Ferndale Road, Brixton. Plaintiffs also asked for an injunction restraining the defendant council from paying or certifying for payment to other persons, any sums due under the contract in question. Plaintiffs, in their statement of claim, set forth that in September, 1908, the council, through the agency of E. Lawrance and Sons, accepted plaintiffs' offer to do the work at the price of £1,285 15s., and that plaintiffs thereupon proceeded to supply the goods and do the work. In July, 1909, however, the council repudiated the contract. Alternatively, plaintiffs pleaded (1) that if it should be held that E. Lawrance and Sons were principals, and not agents, then plaintiffs were entitled to rely on a condition (No. 21) in the main building contract that defendants would retain the cost of the work done by plaintiffs until the main contractors produced proof of payment to the plaintiffs; and (2) that defendants had agreed with plaintiffs that defendants would retain in their possession sufficient money to cover the value of the works until proof that plaintiffs had been paid. Charles James March, appointed in May, 1909, trustee of the estate of E. Lawrance and Sons, under a receiving order, was conjoined in the defence.

In defence, the council pleaded that they were never principals; that plaintiffs by accepting bills of exchange for £234 and £213 3s. 4d. from Messrs. Lawrance, had elected to treat that firm as their debtors, and therefore could not now sue the defendants; and that there was no contract under seal between the plaintiffs and the defendants.

In delivering judgment, Mr. Justice Channell said that this was one of those not at all uncommon cases in which a sub-contractor (the question generally is whether he is properly called a sub-contractor, but the phrase is generally intelligible, even when applied to cases where it is not strictly correct), not being paid by the main contractor, claims to be paid by the building owner. His view, he said, with respect to provisional prime cost items was, "that when you say that the builder is to provide so much for the prime cost of certain portions of the work, I think that contemplates (it is not necessarily so, perhaps) that that part of the work will be done by somebody else than the builder to begin with, because the prime cost is not an appropriate expression for work done by the builder himself. It means prime cost to the builder, of course; and although it is impossible to say that that language will cover the cost to him of his labour and his wages and such things, it is not the way in which you deal with items of that sort; and putting in these prime cost items, therefore, to my mind, shows that as to those items it was in fact contemplated that they would be done by somebody other than the contractor himself. But whether that is so or not, putting them in as provisional items clearly has this effect—that he bases his contract upon that sum being the prime cost of these articles. He adds in respect of that, just as he does in respect of all other items in the contract, profit to be made if he likes to add it; but if he thinks he will be content with the prime cost in reference to that small portion of the work, he would add his profit in a lump sum, and thereby he would reduce the total amount of his tender, which might enable him to get the contract: but in the settlement between himself and the building owner when it ultimately comes, if more has been incurred than the sum that is provided, then the difference is an extra on the contract. If less has been provided, then it is a deduction; and if it so happened in any case that nothing was done in reference to that, the whole of the provisional sum would be a deduction; also if the building owner provided those things at his own cost, by buying them for ready money, he would be at liberty to do so; or by paying the person who in point of fact supplied them, if he provided them at his own cost, equally of course the whole provisional sum would be a deduction on the settlement. The effect of that, as it seems to me, is that the things which are bought and the work which is done are in fact done on account of the building owner. . . . . In the case of these provisional items, it does seem that the contract made to procure these things is in point of fact a contract in which the building owner is the real principal; because if that is a good contract he gets the benefit of it; if it is a bad contract, he gets the loss upon it; he is the person who is interested in that contract. The builder is not in the least interested in it. He gets no more if it is a good contract, and no less if it is a bad one. He has simply his accounts settled upon bringing into the account this sum instead of the provisional sum, and I should think that in the general way the effect of this provisional item would be to make the building owner a real principal upon the contract under which those things are ultimately supplied; but I am not sure that it would be so in all cases, because it would depend on the way in which they were supplied; but we have to add therefore to the thing the circumstances under which they ultimately come to be supplied. . . . On the assumption that the contract that was made for procuring these casements from the plaintiffs at a certain price, and on certain terms, was a contract which on the face of it made Lawrances the principal persons buying it; still, it seems to me that it really would be a contract made, in fact, on behalf of the London County Council as the real principals, because it was to procure something for their benefit, to become their property, and that as regards the terms of the contract they were the persons interested, and not Lawrances; they got the profit or they suffered the loss, whichever it was. Therefore, it strikes me that the effect of this contract between the London County Council and the builders, and the way in which it was carried out, was to make the County Council the real principals upon this contract, assuming it to be made by Lawrances. . . . The facts were these. The London County Council, through their agent, asked Crittalls, the plaintiffs, to tender, and I think that that was a proposal by the London County Council by their architect to Crittalls for Crittalls to state for what price they would do the work for the County Council. . . . When the architect says 'Please place the order with Crittalls on the terms of this quotation,' I think he thereby directs Lawrances to make the contract for him." The point, said his lordship, which gave him greater difficulty was whether or not there had been, as between the London County Council and the builder, such settlement of accounts as precluded the plaintiffs from now asserting the liability of the defendants, either for the whole or for a portion of the amount. He thought he must hold that the acceptance of the amounts paid on account did not prevent the plaintiffs recovering from the real principals. He therefore gave judgment for the plaintiffs for £631 1s. 9d., and costs against the County Council except so far as the costs of the plaintiffs have been increased by the order and the appearance of the third party, Mr. March, and as against that defendant judgment for the amount by which the costs have been so increased.

The solicitors for the Crittall Manufacturing Company, Ltd., were Messrs. Munns and Longden, Fredericks Place, Old Jewry, E.C.

THE AERATION OF PORTLAND CEMENT.

At the meeting of the Institution of Civil Engineers held on November 22nd (Mr. Alexander Siemens, president, in the chair), a paper on "Portland Cement, and the Question of its Aeration," was read by H. K. G. Bamber, Assoc.Inst.C.E. The following is an abstract of the paper:—

Much has been said and written on the subject of Portland cement, but in connection with the chemical or physical side there is still a wide field for research, as uncertainty exists on many of the complex problems which continue to baffle skilful investigators. The methods of manufacture in the past were known to but few, who with well-established brands of a new and eminently useful material, had practically a monopoly of the trade in the United Kingdom, and, for a considerable period, of the trade of the world.

Early Days.

Contrary to the practice during recent years, when the engineer has prepared the specification detailing the properties of the material he proposes to use, the manufacturer then held the engineer in the hollow of his hand. The increase in the number of cement-works in various parts of the country soon caused the supply to overtake the demand, with the inevitable result that the handsome profits realised in the early days of the industry were diminished, never to return to their former level. It was not until a later date, and towards the end of the nineteenth century, that development on scientific and economic lines was undertaken by many of the principal manufacturers in all parts of the world. Their efforts met with the full appreciation of the members of the engineering profession who, by varied experiments, became fully acquainted with the properties and eccentricities of the cements of the past. Great improvements were brought about through the initiative of Sir John Wolfe Barry, Sir William Matthews, and others, and a scientific system of standardisation has now been established, resulting in great influence for good, as well on the commercial as on the technical side.

Improved Methods of Manufacture.

The industry as a whole, having accepted these conditions, has improved the methods of manufacture by large expenditures of capital in the way best adapted to meet local conditions and the character of the raw materials to be dealt with. The state of things prevailing in the cement industry in the 'sixties, and the costly and tedious methods which it was generally necessary for the engineer to adopt before the cement then supplied to him could be safely used, were due, the author said, to the almost entire absence of that scientific chemical control which is an essential part of the methods of to-day. The importance of thorough amalgamation of the raw materials, and of the chemical uniformity resulting was not then fully realised, or, if it was understood, no adequate provision was made for producing so perfect a mixture as is now obtained. Further, the subsequent calcination was often carried out without any successful attempt to separate the unburned portions from those which were thoroughly calcined. The defects being caused chiefly by the presence of uncombined lime, due either to faulty amalgamation of the raw materials or to insufficient calcination, or to both, the engineer wisely had recourse to the simplest and most natural methods for neutralising its expansive force, by converting the free lime into hydrated carbonate of lime by absorption of moisture and of carbonic anhydride from the atmosphere, with the object of rendering it inert. In treating cement in bulk this is a tedious and expensive process, but with the knowledge then available perhaps no better system could have been devised to secure soundness and freedom from expansion.

The Aerating Process.

Many engineers—especially those whose experience extends over a long period—have become so accustomed to the use of some aerating process that, perhaps by force of habit, they still continue to require it of their contractors, forgetting that cement which has already passed the stringent tests of the British Standard specification has necessarily shown itself to be entirely innocent of any expansive tendencies. If this specification is adhered to for all requirements the old aeration methods have become obsolete.

[Photographs were given showing the effects of boiling on briquettes made with sound and unsound cement respectively.]

The Influence of the Chemist.

The improvements which have been effected, particularly since the end of the nineteenth century, have lifted cement-making to a high position in the list of scientifically conducted industries. Given efficient chemists, now an important part of the staff, no difficulty is experienced in obtaining continuously a well-proportioned mixture of the raw materials, whatever their character; and by means of specially-designed machinery these materials are so effectually reduced that it is usual to find 95 per cent.—calculated on the water-free material—capable of passing through a screen of 32,400 meshes to the square inch. This is as near perfection as it is commercially possible to attain, and with proper calcination the clinker should contain only traces of free lime, by which is meant amorphous calcium oxide capable of hydration or slaking with expansion, as distinct from the crystalline form in which it is said to exist, together with the silicates and aluminates of lime, in solid solution. Crystallised oxide of lime in this form is thought by some of the most recent investigators of the subject to be relatively inert, hydrating or slaking very slowly without expansion or evolution of heat, whereas the amorphous oxide of lime slakes immediately upon the addition of water, giving off considerable heat with a large increase in volume. It is the absence of lime in this latter condition in modern cements which renders futile any attempt to improve them by aeration.

The Rotatory Kiln and the Hydration Process.

One of the most important improvements in the manufacturing process is the introduction, on a practical scale, since 1900, of the rotatory kiln. Its advantage is that the calcination is completely under control. The author proceeded to describe the process in detail, and also that of grinding, an operation to which much attention has been given of late years. Another great improvement in the production of sound cement, and the one which renders subsequent aeration unnecessary, is the introduction of the hydration process carried out in conjunction with the grinding; it consists in submitting the cement, during its final reduction, to a saturated atmosphere at a comparatively high temperature. The process results in achieving in a scientific, rapid, and highly efficient manner what the aerating operations of the engineer have only imperfectly effected on the cements of the past. It also has a markedly beneficial effect in regulating the setting-time, and in rendering it more permanent, by preventing to a large extent the return of the cement to a quick-setting condition, a danger which exists when gypsum alone has been used to retard the setting-time. Lastly, there is the cooling process, where the hot cement on leaving the mill is conveyed to revolving water-jacketed coolers. This operation, being conducted in the presence of air, adds the finishing touch to the beneficial results of the previous hydration.

Contrasting, therefore, the properties of the cement manufactured under rule-of-thumb processes of the past with those of the best cements made to-day, the author thought that it should not be difficult to establish the desirability of abandoning the old method of treatment. A means of diagnosis is now in the hands of the engineering profession in the form of the British Standard specification, and there is no necessity to, as it were, impair the vitality of the patient by treating him for a complaint which can be proved to be non-existent.

THE LEICESTER GALLERIES.

There are three little exhibitions at the Leicester Galleries, the most important being M. Dulac's designs in illusration of "The Sleeping Beauty," "Bluebeard," and "Cinderella." In spite of the odd idea of treating the tale of the Sleeping Beauty in Louis Quinze costumes, all the three series are remarkable for their fanciful beauty of design, and for their delicacy of execution. It is what may be called "boudoir art," but it is perfect of its kind. Mr. Anning Bell's water-colour sketches of "Majorca and Minorca" are not very remarkable; their interest is rather topographical than artistic. The third collection, in another room, is a series of very highly finished water-colours, by Mr. Sutton Palmer, of Scottish scenery, under the title "Bonnie Scotland." These are all excellent, and conscientious work—up to a certain point; they attain to the praise of being uniformly pretty and charming, but they do not get beyond that. However, there are plenty of people who prefer prettiness to any higher quality in water-colours, and they will find their taste fully satisfied here.

The general meeting of the Committee for the Survey of the Memorials of Greater London which was arranged for Monday last at the new Crosby Hall, Cheyne Walk, Chelsea, when the chair was to have been taken by Lord Curzon has been postponed.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) ***Enquiries about buildings to measure in particular towns and districts.***

(2) ***Enquiries embodying questions which have been set in examination papers.***

(3) ***Enquiries which ask for or require the preparation of special designs as part of the answer.***

Calculations for a Steel Stanchion Base.

P. E. (YORKS) writes: "Will 'A' please explain how his method for calculating the thickness of a stanchion, the base-plates of which overhang, is applied in practice? In B.J. No. 714 the formula:—

$t = l_1 \sqrt{\frac{3p}{7}} = \frac{l_1}{L}\sqrt{\frac{3W}{14}}$, is given by "A."

t = Thickness of plate in inches, l_1 = Inches overhang. L = length of plate in inches. W = Weight or load in tons.

—Apparently this means that a thinner plate is required for a larger base-plate under the same conditions of loading and with the same overhang, for a base-plate to the above detail. t = 7-16 in. Supposing the plate was made 45in. wide, and a 3in. overhang, t = 3/8in. Although the pressure per sq. in. on the overhang would be less, 3/8in. appears to be a thin plate for this load."

—The formula given in my reply on the above subject in the "Builder's Journal" of November 18th, 1908, p. 392, is intended as a check to see that the amount of overhang is not excessive for the thickness of plate previously decided upon. This formula must clearly not be taken as the sole determining factor for the thickness, because if the angles came flush with the edge of the plate the formula would give a thickness zero. The formula should be used, therefore, not so much for determining what the thickness must be for general considerations, but for finding the thickness less than which it must not be for the given overhang. A rule sometimes used is that the overhang should not be more than 8 times the thickness of the plate. Please note a misprint in the previous reply. The formula should be

$t = l_1 \sqrt{\frac{3p}{7}} = \frac{l_1}{L}\sqrt{\frac{3W}{7}}$ (*i.e.* 7 instead of 14).

A.

Right to Light Question.

W. E. R. (SWINTON) writes: "Please advise me with regard to the right of light question as set forth on enclosed tracing [not reproduced], which is self-explanatory."

—Having regard to the very small amount of obstruction which is caused by the proposed new warehouse, it is conceived that no action for interference with right to light could be maintained. A change has come over the law with regard to this question during recent years. The problem to be solved is not "How much light is taken away?" but "How much is left?" The case of *Colls v. Home and Colonial Stores* (1904), A.C., 179, is the leading authority upon the question under discussion. In that case the defendants proposed to erect a building in the City of London on the opposite side of the street to that on which the plaintiff's premises were situated. The new building would deprive the plaintiffs of a substantial amount of light, causing them real damage, though light enough would be left for the ordinary purposes of occupancy of the premises as a place of business, and the selling or letting value of the premises would not be affected thereby. The Court of Appeal granted a mandatory injunction, but the House of Lords dissolved the injunction, saying that to constitute an actionable obstruction of ancient lights it is not enough that the light is less than before. There must be a substantial privation of light, enough to render the occupation of the house uncomfortable according to the ordinary notions of mankind, and (in the case of business) as beneficially as before. It is important to observe with reference to the foregoing decision that all the Law Lords based their judgments upon the findings of fact that the proposed building would not affect the selling or letting value of the respondent's premises; and there was also a finding that the diminution of light would not materially affect the respondent's comfort or convenience. This was emphasised in a later case. The principle laid down in Colls' case was applied in Higgins v. Betts, where an injunction was granted. Farwell, J., pointed out that the action for interference with light is similar to the right of action for nuisance at common law; but the test of nuisance is not "How much light has been taken, and is that enough materially to lessen the enjoyment and the use of the house that its owner previously had?" but "How much is left, and is that enough for the comfortable use and enjoyment of the house according to the ordinary requirements of mankind?"

X.

Waterproofing Stone Wall.

ANXIOUS (NEWCASTLE) writes: "I wish to know which you would consider the best method to build the walls of a dwelling house to be built of stone, rock-faced, so that it shall be damp-proof. Bitumen damp course will be used."

—The stone to be used is presumably soft and porous, or there should be no difficulty from the transmission of moisture through the wall. There are various preparations of silicate of soda or "soluble glass" for waterproofing stone. One of the best known is "Fluate" sold by the Bath Stone Firms, Ltd. This is painted on the surface, but soaks in and makes a waterproof coating.

HENRY ADAMS.

Gothic Arcade in London.

H. G. L. (CLAPHAM) writes: "Kindly recommend a Gothic arcade in London, to measure up for the intermediate exam. of the R.I.B.A. I do not want to measure the one at Stone Church, Kent, as it has frequently been done before."

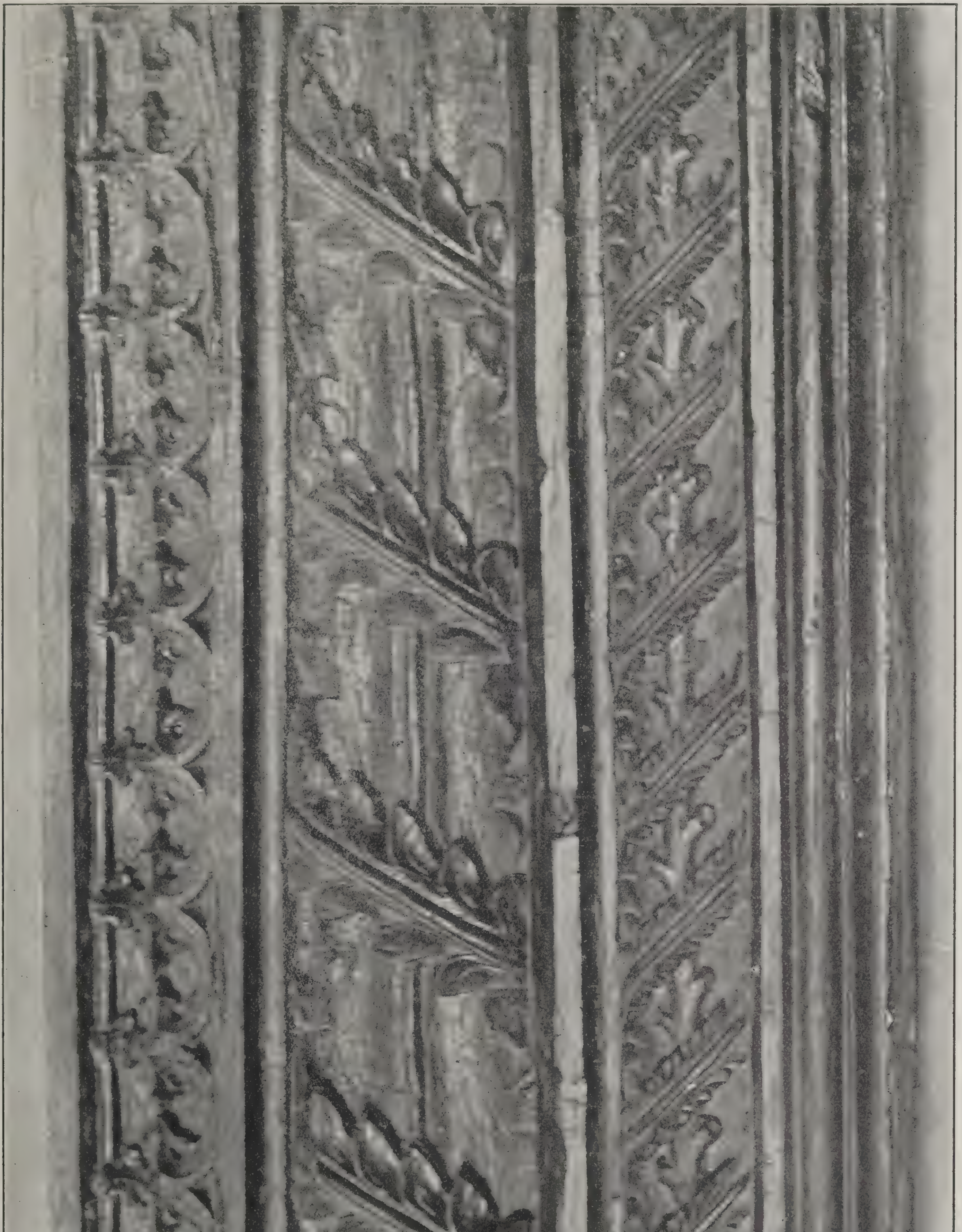
—Querist will have difficulty in discovering Gothic work near London, at once so accessible for measurement and so good in detail as the arcade at Stone Church, and he appears rather to overlook the object of the Testimonies, which should testify that the best available work has been studied. If, however, he is determined to measure a less hackneyed subject, the Perpendicular choir arcade at All Hallows, Barking (by the Tower of London) might suit him. Westminster Abbey, of course, has some beautiful wall-arcading in the transepts, but permission to measure is difficult to obtain. The wall arcade in the Chapter house, however, I believe can be measured upon application to H.M. Office of Works.

G.

Cost of Building in the Midlands.

"X" writes: "What would be a fair price per cube foot to allow for building a new wing on to a county manor house in the Midlands, in which a large quantity of English oak is used for panelling, staircase work, and partly in the roofs to the extent of about 20 tons?"

—A sufficient price per foot cube to allow we think, should be from 10d. to 1s., unless more elaborate finishing internally in respects other than panelling, etc., such as ornamental plaster work, very elaborate marble grates or expensive floors are contemplated. If the house is faced externally with stone it might probably cost a little more than 1s. Without seeing plans and details, it is impossible to give a more definite figure.



Carved beams of this character are to be found throughout the old houses of Suffolk. The one here illustrated in part was taken from the "Pickerel Tun," Ixworth, and is now in the museum at Moynes Hall, Bury St. Edmund's. It is blackened with age and exposure, but retains most of its original crispness of execution. The length of the beam is 10 ft. 6 ins., the depth about 12ins., and the thickness 10 ins.

CARVED OAK BRESSUMMER FROM A SIXTEENTH CENTURY HOUSE AT IXWORTH, SUFFOLK.

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THE HOMES OF QUEEN ELIZABETH'S COURTIERS: EXTERIORS.

By J. ALFRED GOTCH, F.S.A., F.R.I.B.A.

In the fourth of his series of lectures at University College, London, Mr. Gotch illustrated from many notable examples the extension of the tendency towards magnificence and luxuriousness in the homes of the great.

IN the preceding lectures, of which summaries have appeared in this journal Mr. Gotch traced the changes which successively took place in the domestic arrangements of dwellings. Formerly security had been the chief aim; but as the prospects of a peaceful life became more certain, comfort came to be more considered. The ponderous contrivances which had been hitherto considered necessary for ensuring safety were found inconvenient. The old rooms were either dark owing to the small size of the windows, or were dull owing to their looking into a courtyard instead of into the open country. They were, moreover, too few in number for the increasing refinements of the age.

The Great Hall.

The great hall, where the majority had been formerly content not only to eat and live, but also to sleep in common, was found to be inadequate, and as the years went by was supplemented by more and more rooms. There was a universal desire for better homes. While this desire was being augmented, both from within and from without, from within by change of ideas on the subject of household arrangement, and from without by the sight of what was being done in foreign lands, there came the Dissolution of the Monasteries, which entailed the transference into secular hands of most of the immense revenues formerly held by the Church.

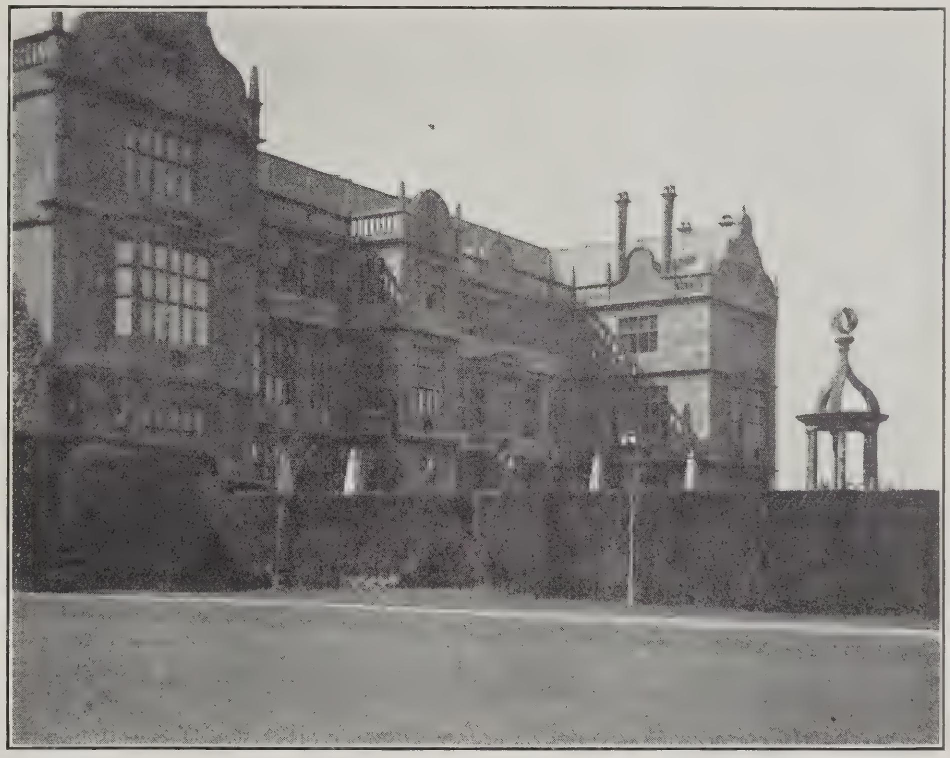
Elizabethan Rage for Building.

The desire for better homes, and the means of gratifying it being thus present together, it only wanted the tranquility afforded by Elizabeth's strong rule to set people building all over the land. The rage for bricks and mortar became universal. Almost every manor-house in the country was either enlarged or rebuilt, while some of the principal nobles erected vast palaces, worthy, as they somewhat doubtfully hoped, of the most resplendent majesty of the Queen, but which their less magnificent successors have found a great deal too large, and which consequently they have either partly pulled down, or else have entirely abandoned for less magnificent, but more comfortable, homes.

For fully sixty years this great building period lasted, and there is hardly a village in England that cannot show some work dating between the years 1560 and 1620. Many houses were entirely new, many old houses were enlarged; and in some cases houses not fifty years old were displaced by finer ones.

Strength of Character of the Period.

The work of this period has a flavour peculiar to itself, and different from that of any other time or country. It has been already seen how Italian influence began to affect English architecture, and how at first it touched only the superficial ornament. In course of time the influence became stronger. It became fashionable to cultivate Italian ideas, and to imitate Italian methods of design. Young men went abroad to study Italian architecture, and on their return offered their learning and experience to wealthy patrons about to build. But it was impossible to Italianise English craftsmen all at once—they were too deeply imbued with the old traditions; and the peculiarity of the Elizabethan style lies in the manner in which English workmen used Italian features on English soil, and carried into the classic forms brought from abroad some of the Gothic ideas which they acquired at home in their youth. The bay windows, the steep gables, the lofty chimneys, with which their fathers were familiar, they retained, and they developed the mullioned window until it became an essential characteristic of their work. But all these features were marshalled into symmetrical order; they were adorned with Italian details, curiously altered in their journey across the Continent. Isolated features, such as doorways and porches, were wrought after Italian models, and in the larger houses the Italian loggia or open arcade was frequently introduced — a cold, shivering foreigner stranded on our Northern shores.



MONTACUTE, FROM THE EAST GARDEN.

[The loggia at Apethorpe was shown.]

All this Italian dress was put upon a body that was entirely English—namely, the plan of the house.

A New Era of House-planning.

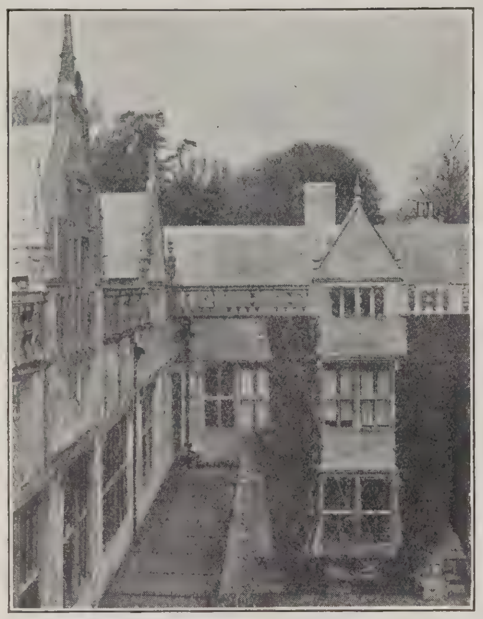
Now, the plan of a house represents the habits and wants of its inmates; and the habits and wants of an Englishman were widely different from those of an Italian. All the circumstances of the case, therefore, were in favour of an interesting result. On the one hand, old customs and established wants to satisfy; on the other, new forms, and new methods of expression quite different from anything that tradition could supply. These are the somewhat incongruous elements out of which the bright and eager spirit of the time fashioned the piquant architecture of Elizabeth's days.

[Examples from Longleat, Montacute, Bramshill, Blickling, Kenyon Peel, Rushton, and Wilby were here shown.]

Coming to a more particular investigation of the houses built in James's and Elizabeth's time, the lecturer said that the one thing we must bear in mind is that they mark an era in house-planning. There was no longer need for special precautions against attack. There was a great desire for magnificence, for privacy, and for more light. The old type of plan, evolved from the less fortified manor-houses, was still further developed. Magnificence was obtained by symmetrical arrangement; by a vast extent of buildings placed round several courts; by a lavish use of gables and turrets, and ornamental chimneys; by broad terraces, and wide flights of steps. Privacy was obtained by a great multiplicity of rooms, by increasing rooms on one side of the house, and the servants' rooms on the other. More light was easily obtained by providing a multitude of windows; so many, indeed, that Bacon protested against them, saying that one could not tell "where to become, to be out of the sun or cold"; and one well-known mansion of the time is often spoken of as "Hardwick Hall, more glass than wall."

Pedantic Quaintness.

Another quality which is often characteristic of houses of Elizabeth's and James's time is a pedantic quaintness. Sometimes it took the form of curious inscriptions, written or carved outside and inside of the house; sometimes it showed itself in the form of allegories, now difficult to decipher, and even more difficult to comprehend; and sometimes it affected the very form of the buildings themselves. The most remarkable examples of this peculiarity are to be found in two small buildings erected by Sir Thomas Tresham. One of these is triangular in plan, and is emblematic throughout of the Trinity; the other is a Greek cross on plan, and sets forth the doctrine of the Passion. There is also that plan drawn by John Thorpe, in the form of his initials, "I.T." In the Thorpe collection of drawings are



RUSHTON HALL: NORTH-WEST CORNER OF COURTYARD.

the plans of many of the best-known mansions of the time, as well as many plans entirely fanciful, and conceived in the quaint vein already referred to. There are triangular houses, and six-sided houses, and squares, and crosses in circles, and many other curious devices.

Characteristic Features.

In Elizabeth's days there were certain simple arrangements which occurred in every house, large and small—certain features of the plan which are characteristic of the age. There was the great hall, no longer the sleeping place for the whole family, but still the common ground on which the family and servants met, and it generally both divides and connects the family rooms and those occupied by the servants. At one end of the hall is the screen, forming an entrance passage, on the other side of which are the buttery, and the passage leading to the kitchens and servants' offices. At the end of the hall, opposite to the screen, is the daïs, where the master would dine in state, and from this end of the hall the family apartments could be reached, as well as the main staircase to the upper floor, where the great chamber was situated, and also that feature peculiar to the times, the long gallery.

In the large houses, where the owner sometimes received the Queen on one of her stately progresses, and whither frequently came noblemen with large retinues, the rooms were formed in groups communicating with each other, so that each nobleman could have a suite of apartments to himself. These were frequently arranged round a courtyard, so that, although the occupants often had to pass into the open air in order to get to the rooms in common use, such as the hall, the great chamber, and the gallery, yet they were also able to follow their own devices without let or hindrance, and to go in and out without observation, and without disturbing other guests. This arrangement exists down to the present day in many of the colleges at Oxford and Cambridge, which, indeed, were planned on much the same lines as the large houses of the time.

One thing that makes itself felt in investigating these houses is that they were built for the descendants of the builder. This fact is proclaimed at every turn. The family arms are always conspicuous, the family badge occurs by way of ornament in all sorts of places—in the parapets, in the finials, on the gate-piers, in the ironwork, in the glass, over the fireplace, in the plaster ceilings and the wood panelling, on the stair newels, and even in the very escutcheons of the keyholes.

The Surroundings of the House.

The house was the centre of a large symmetrically arranged area. If there was a park, an avenue conducted you across it to the first of the regular outworks in the shape of a porter's lodge or an archway. [Illustrations were shown of Burton Agnes Lodge, Kenyon Peel, Stokesay, Holdenby, Winwick, Higlow, Cranborne, Gayhurst, Bramshill, etc.] Through this you passed into one two, or even three courts, before you came to the portal of the house itself. The mansion was linked to the garden by definite, obvious artificial means—by stone terraces, and flights of steps, by walls treated in an architectural fashion, by quaint garden houses, and by a formal but stately disposition, the grounds. In the gardens, the walls, statues, and fountains made an easy transition to the clipped trees, which in their turn led the eye gradually to the trees of the park outside. In more modern days all this was changed. There came into fashion what is called landscape gardening, the prevailing idea of which is to preserve the untutored aspect of nature up to the very walls of the house; to make the visitor think that he is far from the dwelling of man till he stumbles on the lordly mansion; to give the impression that nothing more has been done than to cut the drive in such a manner as to take advantage of the finest natural points of view, and that the house itself is a mere accident in the landscape.

The hall was large and lofty. The windows glowed with heraldic painting. The fireplace, wide enough to burn a tree trunk in it, was surrounded by a chimneypiece richly carved. In the fine open-timbered roof could be detected the family crest, which also played an important part in the decoration of the screen through which the hall was entered. The ceilings were covered with an endless variety of patterns made in plaster. The staircases were broad and massive, with stout newels and substantial handrail, all the wood being carefully worked, either by carving, or sinking, or turning.

HALL WINDOW, TRERICE, NEAR NEWQUAY.

Examples of the Period.

Among the illustrations shown by the lecturer were—Drayton House, which, built about 1327, has been at various times altered, the Elizabethan wing dating from 1584; Moyns Park (about 1580), in which there is a slight touch of Renaissance detail; Trerice, Cornwall; Apethorpe loggia; Longleat (middle of sixteenth century), which was the result of some thirty years of building; Montacute (1580-1601); Bramshill; Blickling (1619-20); Thorpe's plan at Kirby; Lyneham; Aston (1635); Kenyon Peel, Lancashire (1631); Rushton; Wilby Old Hall; Burton Agnes, Yorks (1602-10); Stokesay; Holdenby (1585), Winwick; Highlow Hall; Cranborne (about 1612); Gayhurst (1597); Bramshill; Eyam Hall; Montacute; Canons Ashley; Lyveden; and Weekley Hospital (1611).

The great men of Elizabeth's days loved to adorn their neighbourhood, either as an incident in their own lay-out or as a conspicuous figure in the adjacent village, as a hospital or an almshouse. These buildings were generally adorned, though on a smaller scale, in much the same way as the great houses which gave them birth.

LYVEDEN NEW BUILDING, FROM THE SOUTH.

LONDON COUNTY COUNCIL'S LARGE WORKS IN PROGRESS.

About one-fourth of the work connected with the construction of the Southern Low Level sewer No. 2, which is now being carried out by the London County Council at a cost of £481,553, has been completed. The sewer starts at Battersea Rise, passes near Clapham Common, crosses the Camberwell New Road, continues partly under New Kent Road, and terminates at Deptford Pumping Station close to Greenwich Town Hall. The total length of the sewer is 42,460ft., the diameter varies from 5ft. 6in. to 8ft., and the depth ranges from 70ft. near Clapham Common to about 22ft. near Southampton Street, Camberwell. About one-third of the length is being constructed in brick, the diameter being 5ft. 6in. to 6ft. 6in., and the remainder in cast iron. In the latter case the sewer is formed of six segments and a key, and is lined with concrete and blue brick. Almost the whole of the undertaking is being executed in tunnel driven from seven working shafts formed of cast iron rings of 20ft. external diameter. At three of these shafts compressed air is employed in order to prevent the percolation of water. The compressed air machinery is driven electrically by current obtained from the public supply. The compressors have been manufactured by Messrs. Reavell and Co. (Limited), and are of their four-cylinder type, each being capable of compressing 500 cu. ft. of free air per minute to a pressure of 30lb. per square inch. The other shafts are of ordinary brick construction, and measure about 12ft. by 14ft. All the shafts will be used ultimately as permanent entrances to the sewer. Messrs. Griffiths and Co. are the contractors.

In the Bridges Department, the "Times" Engineering Supplement reports, a contract has recently been awarded to Mr. Clift Ford, amounting to £18,000, for the reconstruction of the brickwork road bridge which crosses the river Ravensbourne and the South-Eastern and Chatham Railway at Catford. The existing structure, which is now in course of demolition, is 25ft. wide, with gradients of one in 20. The new bridge will be 50ft. wide, and will have gradients of one in 26, and one in 25 on the west and east sides respectively. In some places portions of the old work, such as foundations and piers, will be utilised, but such portions will be refaced. The span over the river, 26ft. long, and the one over the railway, 25ft. long, will be carried by steel girders in place of the old brick arches. On the east side of these spans there will be six brick arches of 19ft. 9in. span, and two of the same span on the west. Provision is made in the erection of these arches for the laying of a tramway conduit when required. The work will involve a rearrangement of the gradients to the railway station and to Ravensbourne Park, and also of the pipes of the public services. The Ravensbourne and Sydenham sewer being situated in line with the new work, relieving arches will have to be constructed in order to pass it. In addition to the contract price a sum of £18,000 will have to be expended in the acquisition of property. All the above work has been designed by and is being carried out under the superintendence of Mr. Maurice Fitzmaurice, Chief Engineer to the Council.

LIST OF COMPETITIONS OPEN.

Dec. 1. Manchester. Laying Out of the Blackley Estate.—Particulars in our issue for October 12.

Dec. 5. Rhosneigr, Anglesey.—Plans and specifications are invited for water and sewerage schemes for the village of Rhosneigr. Particulars from Owen J. Hughes, Clerk to the Valley R.D.C., Bryncuhelyn, Llanerchymedd, Anglesey.

Dec. 14. Douglas (Isle of Man).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

Dec. 31. Bournemouth. Rebuilding of Mr. J. E. Beale's Premises. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A., in our issue of November 2nd.

January 21, 1911. School for Taunton.—The Education Committee of the Borough of Taunton invite architects practising in that borough to submit designs for a provided school for 440 children. No premium is offered, but the author of the selected design may carry out the work at the commission of 5 per cent. Address George H. Kite, Town Clerk, Municipal Buildings, Taunton.

Feb 1, 1911. Dublin. New Pavilion, Royal Hospital for Incurables at Donnybrook.—Particulars in our issue for October 12.

March 1, 1911.—Municipal Offices, Coventry.—This competition is open to all architects, and the assessor is Mr. E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry. See our issue for November 23rd.

March 15, 1911. Theatre at San Salvador.—Particulars in our issue for October 26.

No Date. Tredegar (Mon.). Model Village.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

COMING EVENTS.

Thursday, Dec. 1.

University College, London.—J. Alfred Gotch, F.S.A., F.R.I.B A., on "English Domestic work: the Drawings of Jacobean House Designers." 6 p.m.

Monday, December 5.

Royal Institute of British Architects.—Reginald Blomfield, A.R.A., on "Pierre Lescot and Jean Goujon." 8 p.m.

Society of Engineers.—Reginald Brown, A.M.Inst.C.E., F.S.I., on "The Working of the Road Development Act, 1909." 7.30 p.m., Room 18, Caxton Hall, Westminster.

Liverpool Architectural Society.—Albert H. Hodge on "Architectural Sculpture." 6 p.m.

Monday, December 12.

Architectural Association.—G. Leonard Elkington, A.R.I.B.A., on "That Foreign Travel and Study Retard the Development of a National Style." 7.30 p.m.

Friday, December 16.

Institution of Mechanical Engineers.—Ordinary Meeting. 8 p.m.

Monday, Dec. 19.

Liverpool Architectural Society.—T. W. Naylor Barlow, M.R.C.S., etc., on "The Effect of Defective House Drainage on Health." 6 p.m.

Monday, January 2.

Royal Institute of British Architects,—Sir Henry Tanner, I.S.O., on "The New General Post Office." 8 p.m.

Monday, January 9.

Liverpool Architectural Society.—P. Morley Horder, F.R.I.B.A., on a subject not yet announced. 6 p.m.

FEDERATION NEWS.

Birmingham.

The annual meeting of the Birmingham Building Trades Employers' Association was held at the Imperial Hotel, on November 17, Mr. Ralph Webb (president) in the chair.

Mr. Ralph Webb was re-elected president, Messrs. W. Moffat and Geo. Elvins, vice-presidents; Mr. George Twigg, treasurer; and Mr. C. L. James (auditor). The Executive Council was elected as follows:—Ex-presidents, Messrs. John Bowen, J.P., Alfred J. Smith, C. H. Barnsley, R. Bulley, B. Whitehouse, Albert S. Smith, John Barnsley, J.P., J. B. Whitehouse, and F. G. Whittall; elected members: Messrs. A. J. Bowen, W. Bishop, J. Dallow, J. Davison, R. Fenwick, W. Harvey Gibbs, J. Jeffery, T. Johnson, A. E. Lee, A. H. Loud, H. Pratt, J. J. Moffat, S. H. Rowbotham, W. P. Sapcote, Guy Sapcote, W. Smithies, J. S. Surman, G. Percy Trentham, A. J. Teall, and W. J. Whittall.

In moving the adoption of the annual report and statement of accounts, Mr. Ralph Webb remarked that one of the most satisfactory features of the work of the association had been the splendid results achieved through conciliation to both employers and employed. Had it not been for the National, Midland, and local boards, trade would have been on more than one occasion at a standstill. One vital point which had been settled satisfactorily with some branches of the trade was that affecting the rate of wages paid to night gangs. It was gratifying to note the membership had increased, but they must not be satisfied until the association embraced everyone connected with the building and kindred trades in the district. Their committee had again been busy in trying to ease the trade from unjust and unsatisfactory clauses inserted in contracts, not only by the Corporation, but, during the last month, by several architects. These were quite against the ruling of R.I.B.A., and it would be their endeavour to prevent such things by refusing to sign contracts. Much time had been spent in considering new bylaws issued by Birmingham and Handsworth Councils. The representations made to each authority were met in a fair spirit, and it was hoped the alteration secured would be beneficial to all. In the early part of the year it was found necessary to ask the General Purposes Committee of the City Council to receive a deputation to discuss some of the clauses the Birmingham Trades Council sought to have inserted in all Corporation contracts. If all those clauses had been allowed to pass, they could not have called their businesses their own. They had received notices from several branches of the trade for alteration in working rules, and in regard to increase of wages. He would ask the secretary to announce them.

Alterations in Working Rules.

The secretary (Mr. G. Henry Wright) said the bricklayers, masons, carpenters, and labourers asked that the boundaries rule should be altered so as to include not only a radius of five miles from Stephenson Place, but the whole of the area included in the Greater Birmingham scheme and the boroughs of Smethwick and West Bromwich, the urban district of Oldbury, and the parish of Blackheath. As to hours of work, notice had been given that work should commence in the winter months, between November 21 and January 29, at 7.30 a.m. instead of eight, and that half an hour should be allowed for breakfast. The builders' labourers and operative bricklayers asked for increased wages, and the carpenters' application for increase would come on in March next before the National Conciliation Board. The operative masons asked for the following addition to the rules:—"No worked stone, quarry, or otherwise, to be introduced into this district from an underpaid district. This not to include steps, landings, and girder pad stone."

Commenting on these notices, the president remarked that the Conciliation Committees and the Local Conciliation Board appeared to have a very busy time in front of them. He then formally moved the adoption of the annual report. This was seconded by Mr. J. Dallow and carried unanimously.

Mr. Wm. Moffat (vice-president) called attention to the fact that if the Greater Birmingham Scheme was finally approved by Parliament, the City Council would be enlarged, probably in April next, and asked if some steps could be taken to secure a representative for the building trade, who could speak in their interests when occasion demanded. During the past year they had been considerably handicapped through having no representative on the Council. There was one occasion particularly, viz., in January last, when without any notification whatever to the Association tion, and without their knowledge or that of other employers' associations, the General Purposes Committee of the City Council accepted certain resolutions proposed by the Birmingham and District Trades Council, and incorporated them in a draft revised edition of "Corporation Contract Conditions." The first intimation any one outside had of these proposals was in the public press, and it happened that on the morning they appeared in print the president, the ex-president, and himself, were on their way to the National Federation meeting in London, and were thus able to discuss them. The question was subsequently brough before the Association and a deputation to the General Purposes Committee of the City Council was arranged. This resulted in several important modifications, but even to-day the conditions were bad enough. Had the building trade had a member of the City Council who was conversant with competence to represent their interests, such matters as these could hardly have taken the shape they did without the knowledge of the association.

Several other matters of importance were mentioned, from which it is evident that the ensuing year will be one of the most active the association has yet experienced.—G. Henry Wright, F.C.I.S., Secretary.

Barnsley.

At the monthly meeting of the Barnsley Association, held at the King's Head Hotel on November 9th, Mr. E. Broley (President) occuping the chair, a report of last Yorkshire meeting was submitted by Mr. T. Lindley; and a report of the Conference of Secretaries, held in Manchester, was submitted by the secretary. The principal business of the evening, however, was the election of officials for the ensuing year, the following being unanimously elected:—President, Mr. G. Porter; Senior Vice-President, Mr. T. Lindley; Junior Vice-President, Councillor G. H. Mellor; Treasurer, Mr. H. Ashworth (re-elected); secretary, J. Denton (re-elected); Auditors, Messrs. F. Goodyear and J. A. Binns; delegates to the "National" and "Yorkshire," Messrs. G. Porter and T. Lindley; Committee, re-elected en bloc, with the addition of the retiring President, Mr. E. Broley.—J. Denton, Secretary.

Cardiff and District.

A meeting of the Committee of the Cardiff and District Builders' Association was held at the Association offices on October 21, the President (Mr. W. T. Morgan) in the chair.

The Secretary reported receipt of final proof copy of the Agreement between the Cardiff Gas Light and Coke Company, Ltd., and the Association, whereby important and valuable concessions had been made by the Gas Company to all the builders in the city and district, as a result of the deputation from the Association which had waited upon them, and the negotiations which had taken place. It was resolved that same be signed by the President and Secretary, on behalf of the Association.

The Secretary read a letter from the City Engineer requesting the Association to postpone the interview with the Public Works Committee on the subject of the relief which they are seeking from the heavy burden at present imposed upon them in respect of the private improvement charges to corner houses to October 27th. The Committee then proceeded to consider the points to be discussed at the interview with the Public Works Committee, and it was decided that the deputation should consist of all the members of the Association, together with any other persons who were specially interested in the question, whether members of the Association or not, and the Secretary was requested to make the necessary arrangements. The President reported that Mr. J. E. Turner (of the Cardiff Master Builders' Association) had kindly undertaken to lay the case before the Public Works Committee.

Accordingly the President and Vice-President, and a large number of builders attended before the Public Works Committee as arranged. The Deputation was introduced to the Committee by the President, and Mr. J. E. Turner then laid before the Committee the facts on which we relied in support of our application for relief. The President, Mr. C. Hoare, Mr. Jacob Cumley, and Mr. George Burgess also took part in the discussion which ensued. A full and patient hearing was accorded to the deputation, and the chairman then stated that the Committee fully recognised the importance of the case which had been laid before them by the deputation, and recognised that the builders had a grievance which required to be redressed, and he promised that the committee would give the matter their full and earnest consideration.—I. Watkins, Secretary.

Nottingham.

The Nottingham Employers' Association and the two societies of operative bricklayers have now agreed upon the points that were left by the National Conciliation Board to be settled locally, and the complete set of working rules have been printed and signed. They come into force on Jan. 1st, 1911.

Working Rules agreed to between the Nottingham and District Association of Building Trades Employers and the Bricklayers, for Nottingham and District, within a radius of four miles from the Exchange, Market Place, January 1st, 1911.

1. Wages.— That the standard rate of wages shall be $9\frac{1}{2}$d. per hour all the year round, and to remain in force for three years, with an extra $\frac{1}{2}$d. per hour when working on chimney shafts when they exceed 50 feet from the ground level, repairs to boiler seatings and flues and to bakehouse ovens, and bridge foundations and culverts when working in water.

2. Working Hours.—From the first Monday in March to the first Monday in November:—Monday, 8 a.m. to 5 p.m.; Tuesday, Wednesday, Thursday, Friday, 6 a.m. to 5 p.m.; Saturday, 6 a.m. to 12 noon; total $51\frac{1}{2}$ hours. From the first Monday in November to the first Monday in February:—Monday, Tuesday, Wednesday, Thursday, Friday, 8 a.m. to 4.30 p.m.; Saturday, 8 a.m. to 12 noon; total, $41\frac{1}{2}$ hours. From the first Monday in February to the first Monday in March:—Monday, Tuesday, Wednesday, Thursday, Friday, 8 a.m. to 5 p.m.; Saturday, 8 a.m. to 12 noon; total, 44 hours. One hour for dinner throughout the year, from 12 noon to 1 p.m. Half-hour for breakfast during the eight summer months, from 8 a.m. to 8.30 a.m. (Mondays excepted).

3. Apprentices.—(1.) All boys wishing to learn the trade of bricklaying must be legally bound apprentice for a term of at least five years, and must not exceed the age of 16 at the time of being bound. (2.) Every employer shall be entitled to have two apprentices, subject to the following provisions:—(a) Every employer shall be in business at least twelve months before he is entitled to an apprentice. (b) He shall not bind the second apprentice until the first has served two years. (3.) Any employer having employed on an average ten bricklayers during the twelve months from the time of the second apprentice being bound, shall be entitled to a third apprentice. If the average has been fifteen bricklayers, a fourth apprentice. If the average has been twenty bricklayers, a fifth apprentice. If the average has been twenty-five bricklayers, a sixth apprentice. (4) All boys shall be allowed two months' trial at the trade before being bound. (5) In case of the death of an employer, or if from any unforeseen circumstances the apprentice is unable to complete his indentures, he shall be allowed to continue in the trade as an improver.

4. Overtime.—A full working day to be made before overtime be charged. For the time worked after the ordinary day is concluded till 8 p.m. time-and-a-quarter shall be paid. After 8 p.m. until starting time on the following morning time-and-a-half shall be paid. From 12 noon on Saturday to 12 o'clock midnight time-and-a-half shall be paid. From 12 midnight Saturday to starting time on Monday morning double time shall be paid, and double time for Christmas Day.

Note.—Where the works are stopped from any cause over which the workman has no control, the full working day shall not be required to entitle to overtime rate.

In the event of an employer finding it necessary to employ a night shift, the hours of work for the night shift shall be as under during the first five nights of the week (Monday to Friday). The men shall commence work at 6.30 p.m., and shall cease at 5 a.m., with one-and-a-half hours allowed for meals.

The men employed on the night shift shall be paid at the rate of a time-and-a-quarter, and no person who is employed in a day shift shall be employed in the night shift, and four consecutive night's work shall constitute a night shift, otherwise it shall be termed overtime. All time worked by the night shift either before or after the ordinary hours shall be paid for as time-and-half instead of time-and-a-quarter.

5. Out of Town Work.—Any employer having a job beyond the 4 miles radius shall pay the workmen, if sent by the employer, their lodgings and railway fare both ways, or make an arrangement with the workmen as an equivalent. Any workman being discharged when working out of town, or not paid on the works, shall have notice given him to take his tools away, and in default of such notice he shall be paid for his time in going over and bringing them home, and 3rd class railway fare.

6. Payment of wages.—Payment of wages to commence as soon as work has ceased, and if more than half-an-hour elapse between the time of leaving work and the commencement of payment of wages, the time shall be paid for as if actually at work (see Rule 4).

7. Authority of Employers.—Each employer shall have power to conduct his own business in any way he may think advantageous, in the matter of letting work (piecework strictly prohibited), in using machinery and implements, and in all details of management, not infringing these Rules. In case of any workman not being considered efficient, it is open to the employer to make arrangements with the Society for a lower wage, to meet the case fairly.

8. No labourer or other unqualified person shall be allowed to brick cellars or to do any other work properly belonging to the trade, and all terra cotta fixing is bricklayers' work.

9. Conciliation.—Should any difference arise between employer and employed, either party may require the same to be laid before a meeting of six persons chosen by the employers and six by the employed, and their decision shall be final and binding on both parties. Such meeting to be held within three clear working days from receipt of written notice by either of the respective secretaries. Should such meeting be unable to agree, the question in dispute shall be referred to the Conciliation Boards. No strike or lock-out, or other suspension of work, shall take place during the progress of these negotiations.

10. Sheds and Messhouses.—That there shall be a lock-up shop provided for workmen to get their meals in, and to put their tools in with safety.

11. Notice.—That these rules be considered binding, and if either party wish for any alteration they shall give the other six months' notice.

The rules were signed on behalf of the employers by Jas. Wright, Wm. Crane, Fredk. Quarton, Fred. H. Fish, Vincent T. Long, and F. W. Ward; and on behalf of the workmen by Robert Newstead, Fred W. Parker, Samuel Attenborrow, John Hewing, Harry Holmes, and O. C. Johnson.

Portsmouth.

The quarterly general meeting of the Portsmouth and District Master Builders' and Building Trades' Association was held at the Sussex Hotel, November 8th, Mr. A. E. Porter (President) in the chair.

Many matters of interest of the Trade were dealt with, and it was unanimously decided to hold monthly meetings during the winter for the purpose of discussing and dealing with items of interest to the members.

A sum of Ten Guineas was voted to the King Edward the VII. Memorial Fund.

Regarding the recent conference of builders with the Chancellor of the Exchequer on the provisions of the Land Bill, the secretary read an account of same, and the advantage of having such an influential body as the National Federation of Building Trade Employers to deal with this and similar matters was emphasized.

An Extract from the Journal of the R.I.B.A. re Building Tenders and Contracts was also read and favourably commented upon.

The Report of the half-yearly meeting of the Southern Counties Federation, recently held at Chatham was submitted, and further explained by Mr. G. R. Chamberlain, the President of that Federation.—Frank B. Roskell, Secretary.

Wakefield and District.

A meeting of the members of Wakefield and District Master Builders' Association was held at the Great Bull Hotel, Wakefield, on November 3rd. In the absence of Alderman Judge (President), Mr. Tom Lee, a vice-president, was elected to the chair.

The Secretary read the report on the question of the suggested scheme of unemployment insurance, which had been prepared by Mr. Davidson, the Secretary of the Yorkshire Federation and the chairman. In the discussion thereon the views expressed on the report were generally approved.

On the proposition of the Chairman, seconded by Mr. Fallas, Messrs. J. Pashley and H. Gillott were elected to audit the accounts of the Association for the current year.

The nominations for the offices of President, Vice-Presidents, General Committee, and Representatives on the Yorkshire Federation Council were made for election at the annual meeting in December, and as Mr. J. Pashley was the only member nominated for the office of President, he will be formally elected to that office at the annual meeting.

Messrs. C. Turner and Sons, of Wakefield, painters and decorators, were elected members of the Association. Mr. Frank Talbot was also elected a hon. member, on the motion of Mr. Fallas, seconded by Mr. Pashley.—J. Beaumont, Secretary.

York.

An executive meeting of the York Master Builders' and Contractors' Association was held at the Old George Hotel on November 18th, Mr. W. E. Biscomb in the chair.

A letter having been received from the operative plasterers' secretary as to whether bricklayer-plasterers were considered practical plasterers in connection with work on new premises, the secretary was instructed to reply in the negative. Although there was no rule on the subject, it was the invariable custom for work on new premises to be done by plasterers.

The question of municipal trading arising out of the proposal for a municipal cemetery had been placed on the agenda. The question of the cemetery, however, had been referred back since the agenda had been drawn up. It was therefore unnecessary further to consider the question at this stage, and the matter was postponed pending developments.

A paper on unemployment insurance, prepared by Mr. Davidson, the Yorkshire Federation secretary, was read and approved, and the secretary was instructed to ask Mr. Davidson's permission to print it, so that a copy might be supplied to each of our members. It was considered that it would be well if the paper were taken up by the National Federation, so that a copy might reach the hands of every secretary throughout the country, who would then bring it to the notice of his members. It was also thought that it would be an excellent thing if the paper could be brought to the notice of members of Parliament. It was resolved to elect a board of employers connected with the building trade to confer with the Local Education Board as to the courses of technical study at the evening continuation classes.

The secretary read a paper which had been given at the recent Conference of Secretaries in Manchester, and produced explanatory diagrams which had been supplied by Mr. R. Budd (the author of the paper), of the Builders' Office Organisation Company, London. The secretary was asked to notify members as to the system. Satisfaction was expressed at the resolution of this Council to supply quantities in future in the case of all work over £400. The desirability for representations being made to the Council as to the frequent letting of work without quantities originated with the York Association, and much satisfaction was expressed at the decision of the Council.—J Hague (Solicitor), Secretary.

Mr. P. M. Crosthwaite, M.Inst.C.E., has held an inquiry at the Guildhall, York, into an application by the York Corporation to the Local Government Board for sanction to borrow money for the widening of Nunnery Lane and Queen Street Bridge. The Town Clerk explained at the outset of the inquiry that the application in respect of the bridge widening was for £500, whilst altogether £1,984 was wanted for the Nunnery Lane improvements.

The Morecambe Town Council have accepted the tender of James Hatch and Sons, Lancaster, for the erection of new art and technical schools for Morecambe at a cost of £11,200.

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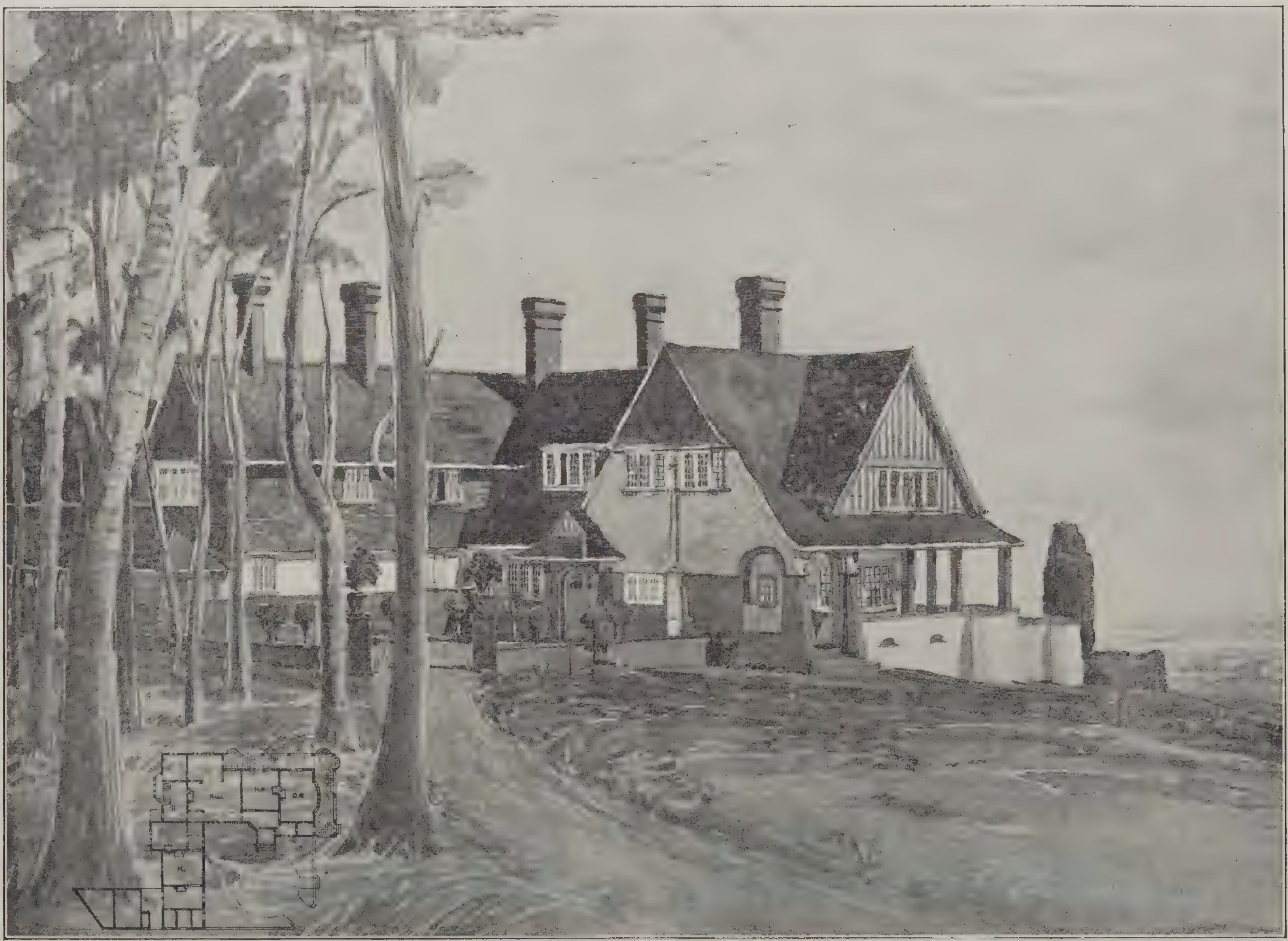
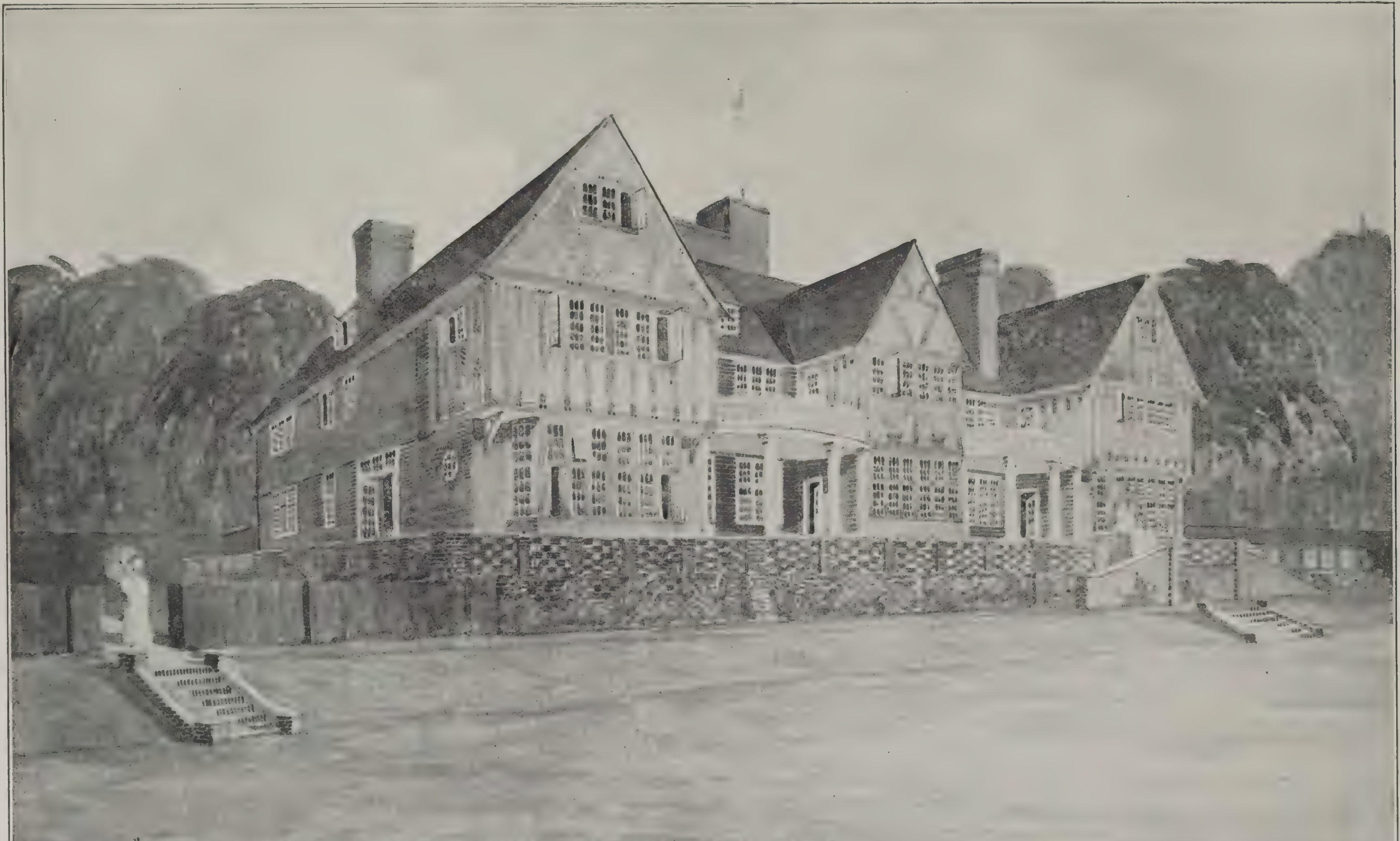
Supplement to The Architects' and Builders' Journal, Wednesday, *December 7th*, 1910.



HOUSE AT BEACONSFIELD, 'BUCKINGHAMSHIRE. COLLCUTT AND HAMP, ARCHITECTS.



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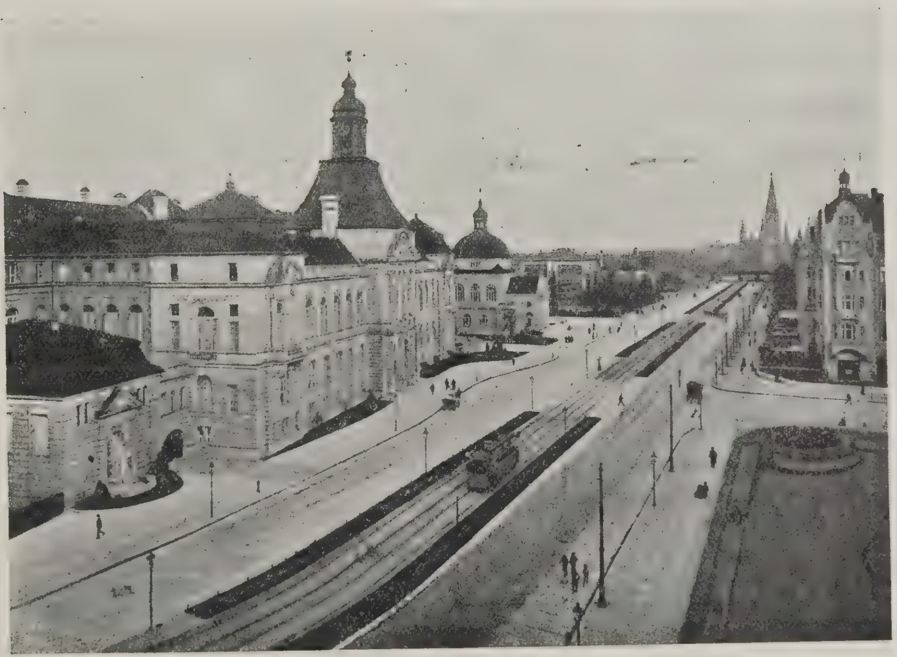
THE ARCHITECTS' & BUILDERS' JOURNAL

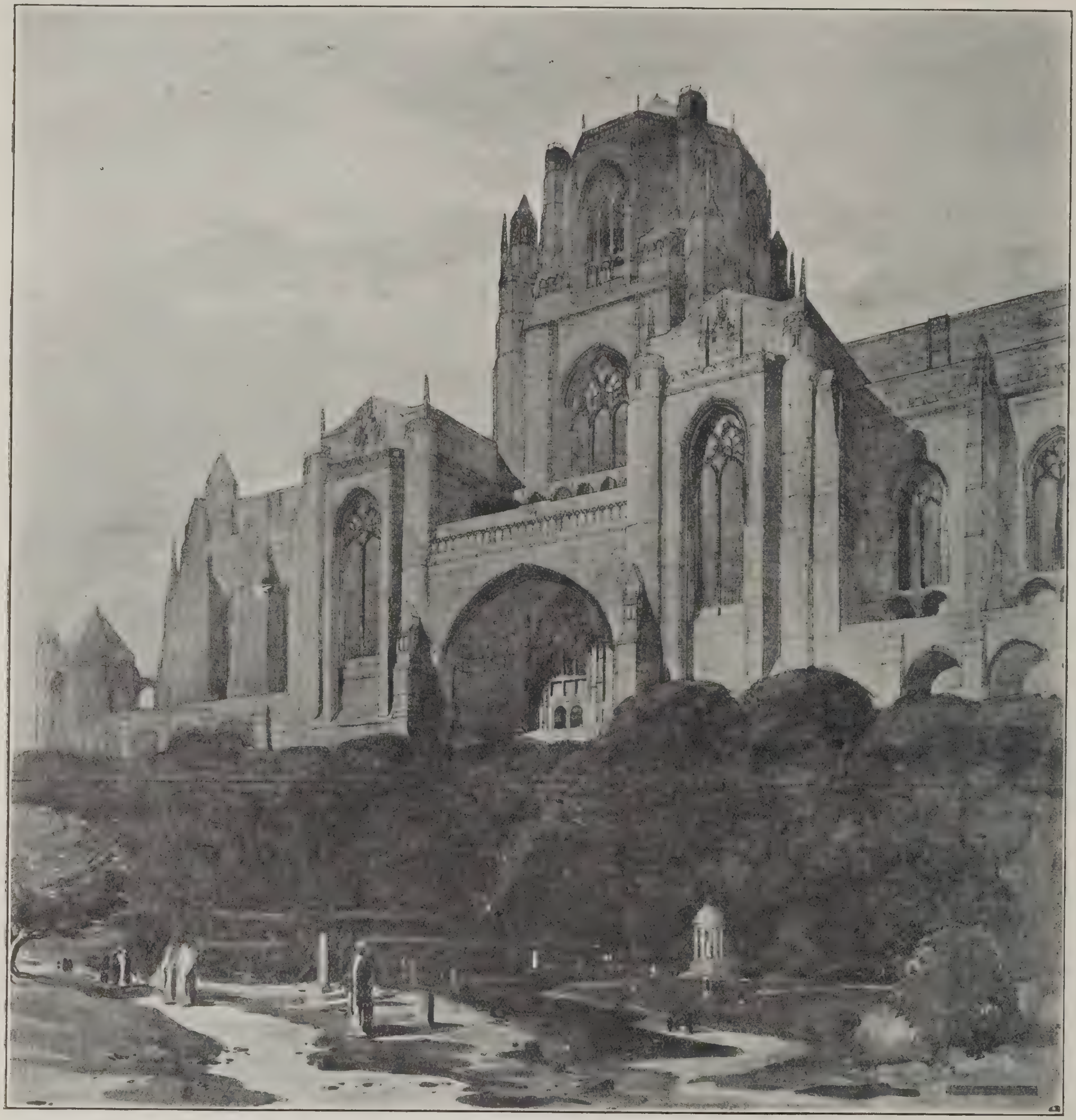
WEDNESDAY, DECEMBER 7th, 1910.

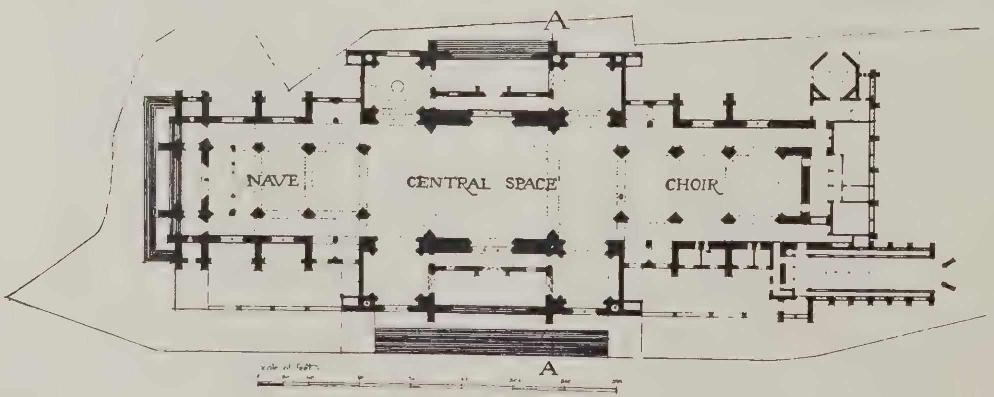
Volume XXXII. No. 827.



This is one of the chief streets in the newer part of Berlin. The building on the left is the Royal School of Art. Attention is directed to the tramway scheme, with grass plots on either side.

THE HARDENBERGSTRASSE, CHARLOTTENBURG, BERLIN.





In the amended design a single large tower is substituted for the twin towers shown in the original design. In this way economy of space is effected, and the lighting is improved, while the congregation will be more closely assembled, the new scheme providing a central space accommodating 4,000 worshippers. The portion to the right of the line A—A is first being proceeded with, including the Lady Chapel.

THE AMENDED DESIGN FOR LIVERPOOL CATHEDRAL. G. GILBERT SCOTT, ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 7th, 1910. CAXTON HOUSE, WESTMINSTER. VOLUME 32. No. 827.

Note: The List of Contents will be found on Page V. of the front advertisements.

Papers of the British School at Rome.

THE fifth volume of "Papers of the British School at Rome,"* containing nearly 500 pages of printed matter and 47 plates, besides a number of minor diagrams, is sufficient in itself to indicate what a valuable collection of volumes of information on ancient architecture these will ultimately prove, if they are continued in the same style and with the same thoroughness of treatment.

In the present volume the essays and illustrations are entirely concerned with ancient work, some of it pre-historic. But the scope of the School includes everything which is connected, in regard to style, with Roman architecture, a fact of which the reader may be agreeably reminded by the fine sketch of part of Palladio's exterior arcades to the Basilica at Vicenza, reproduced on page 584. This drawing by Mr. Carus-Wilson was made, like a good many others, in the course of work in connection with the School, and is the best of all the drawings which were hung on the walls at the recent annual meeting at the rooms of the Society of Antiquaries. We have seldom seen a better example of clean and precise sketching of Renaissance architecture—much more difficult to sketch adequately than Gothic, since its effect depends more on refinement of line and proportion and less on broad effects of light and shadow. And there is a further interest in the illustration, from the fact that it represents perhaps the best piece of work that Palladio ever carried out. As a purely decorative screen it is not open to the criticism of being an architectural treatment at variance with the construction, which attaches to so many of the façades of Palladio and his school, and of the grace of its proportions and details there can be no question. This is not Roman work, it is true, either in respect of date or place, but it is all traceable back to Rome, for the origin both of its spirit and its details, and hence comes naturally into the subject.

To return to the volume before us; a considerable proportion of it is occupied in the study of subjects which may be classed as purely archæological, such as Mr. Mackenzie's paper on the dolmens and the erections called "Tombs of the Giants" in Sardinia. This is a class of remains which have only rather recently attracted any attention, but their interest, it must be admitted, is rather anthropological than architectural; at all events, we can hardly trace the genesis of any architectural plan or feature to these rude erections. Mr. Wace, formerly librarian of the School, in the course of a paper on "The reliefs in the Palazzo Spada," has some interesting observations to make on the degree in which landscape indications are introduced into Greek bas-relief sculpture. Up to the end of the fifth century B.C. there is, he says, hardly a trace of such landscape motives in Greek reliefs. But in the last half of that century attempts at landscape indication come in, and in the following century they are numerous, in the shape of the introduction of conventional representations of rocks and foliage; and it is of some interest to learn that the employment of these scenic additions is most frequent and most elaborate in the grave *stele* or monument stones of Asia Minor. This is another illustration of the partly Oriental feeling which more or less pervaded Asia Minor; and when we recall the elaborate though rather blundering attempts to represent landscape in the Assyrian bas-reliefs, one can well imagine how this taste penetrated to and influenced the work of Greeks in Asia Minor. The west coast of Asia Minor is, in fact, a kind of debateable land, where the Greek and Oriental spirit seem to strive for the mastery. Even in the sculptures and details of the great temple at Ephesus there is a touch of Oriental taste and Oriental magnificence which gave to the building something of its special character among Greek temples. Then Mr. Wace goes on to describe and comment on the far more advanced and elaborated treatment of landscape backgrounds in Roman friezes, from the period of the first century B.C., and also the introduction of carved foliage on the surface of columns and pilasters, giving an illustration of a beautiful bit of very naturalistic foliage on a pilaster in the Basilica Æmiliana. The employment of such ornament on the surface of a pilaster, where there is a raised moulding at the angle so that the space becomes a kind of panel, is one thing; the employment of floral ornament in relief all over the surface of a column, as in some extant fragments of Roman work, is another thing entirely, and detracts very much from the structural expression of a column; nor is it found, as far as we remember, in any remains of an important building *in situ*. It is distinctly a feature of the decadence of classic architecture.

Part III. of Dr. Ashby's learned and minute study of "The Classical Topography of the Roman Campagna" occupies a considerable space in the volume. It is an account to be gone over on the ground itself, and is invaluable in this respect for its thoroughness and minuteness of observation; but except for some small plans of ancient concrete reservoirs there are no illustrations of the objects found. There is something fascinating, however, in the idea of going over that ground, once, no doubt, full of beautiful Roman villas, to snatch from complete oblivion what traces are left of the classic period. A volume on the subject, fully illustrated, would no doubt be of the greatest interest; apart from illustrations it is somewhat dry reading, though full of information. Mr. Stuart Jones's "Historical Interpretation of the Reliefs of Trajan's Column" should have more direct interest for readers in England, for at South Kensington we have the complete full-size reproduction of the column, and the historical interpretation can be followed out there with the groups before one's eyes.

We come back to a completely architectural subject in the short paper by Dr. Ashby which closes the volume, on "The Columbarium of Pomponius Hylas," with complete illustrations in eleven plates from drawings by Mr. F. G. Newton, four of them printed in colour. The Columbarium is a very elaborately decorated private burial place of a Roman gentleman of apparently the time of Tiberius; that is to say, a place of deposit for the cinerary urns of his family and connections. It is situated on the Via Latina, and contains a good deal of architectural detail in the shape of pilasters

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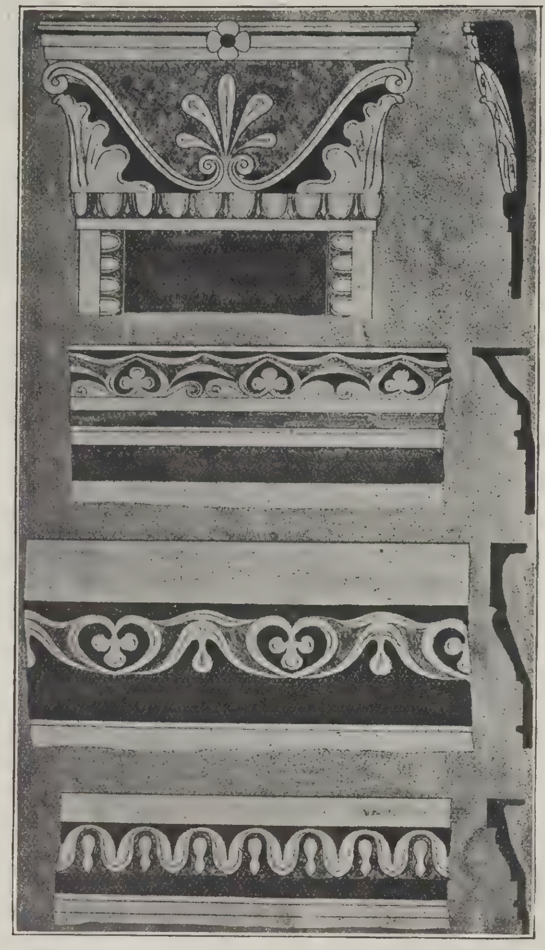
*Papers of the British School at Rome, Vol. V. London: Macmillan and Co.; 1910. 42s.



DETAILS OF THE COLUMBARIUM OF HYLAS AT ROME.
(From "Papers of the British School at Rome.")

and cornices, and two pedimented erections with panels between the pilasters for memorial inscriptions or symbols. The ceiling is decorated with the freely flowing thin-lined kind of foliage design often found in the late Roman work, and frequently imitated in the Renaissance. The building is constructed of concrete faced with brick. Some of the coloured decorations are in mosaic, others in coloured stucco. We give a monochrome reproduction of the last plate, showing some of the painted architectural details. As the whole arrangement of the interior is shown in the plates, in plan, section, and detail, it may have a practical interest for architects at the present moment, at a time when the practice of cremation is on the increase.

St. Paul's Bridge.

WE cannot understand the report in the "Times" of the interview between the deputation from the Institute of Architects and the Court of Common Council in regard to the St. Paul's Bridge, in reference to one particular at all events. The proceedings are no doubt reported in a very abridged form, but it is perfectly evident that the Institute deputation was received in a very hostile and even insolent spirit, and that one member of the Council asked sneeringly "whether it was imagined that the Corporation would proceed in a matter of this kind without proper architectural advice." That is exactly what is imagined, and the point all turns on the meaning to be attached to the adjective "proper." If they have really taken proper architectural advice, let them say to whom they have gone for it, and we shall then know what to think. This kind of tone on the part of the City authorities, however, is of course comprehensible enough; one has heard the same kind of thing before on similar occasions. What we do not understand is the sentence in the "Times" report to the effect that "replying to other questions, Mr. Stokes said he did not admire either Blackfriars Bridge or the Tower Bridge, although they had been designed by competent architects." There must surely be some mistake in the newspaper report here, as the President of the Institute must know that the bridges in question were not designed by eminent architects. Blackfriars is purely an engineer's bridge; the late J. P. Seddon actually offered to the engineers to supply details for the architectural portion as a labour of love, and his offer was contemptuously rejected. The first design for the Tower Bridge was made by Sir Horace Jones, who may be said to have been in a certain sense an eminent architect, but was not much of an artist, and his design was a good deal better than the existing one; but after his death the gimcrack architectural detail of the present bridge was merely the work of an architectural draughtsman engaged for the purpose, whose name did not appear in connection with the work. That he was not an "eminent architect," however, is quite certain, because no eminent architect would have consented to work on those terms. If the question and answer really took place in the terms reported in the "Times," it is a pity that the City authorities should have been allowed to apparently make a point in the argument which they had really no right to claim.

Italian Decorations at Westminster.

ON Monday, November 28th, there was an extra meeting at the Institute of Architects to hear a paper from Professor Formilli on the thirteenth century decorations by Italian artists in Westminster; "Monumental Work of the Cosmati," he called it, but on the propriety of that title there is a word to be said. After speaking of the great part played by mosaic decoration in Pagan Rome, he observed that after this had died out as a Pagan art, it had a resurrection as a Christian art, and through Byzantine influence it became permeated with the Oriental taste for warmth and richness of colour. This, we may add, is especially perceptible if we compare Byzantine and post-Byzantine mosaic with Roman work of the Empire. As far as colour is concerned, Roman mosaic is tame and commonplace compared with that done under the influence of Byzantine art. The lecturer went on to say that the artists of the Byzantine school, the school identified with the Greek church, conceived a new type of man; the old athletic Athenian type disappeared, and was supplanted by a type thin, rigid, and almost semi-barbarous, and the faces in their pictures became all of one type, "representing the artist's ideal of what men should be, and from this arose the necessity of writing the names of the personages under their feet." The idea that this was done from a pre-conceived principle is absurd. The fact is that the Byzantine mosaicists could not draw the human figure or face; hence they concentrated their efforts on the ecclesiastical costumes, which hid the figure and saved them from that difficulty, and which they could load with the richest decorative colour; and being conscious that they could not differentiate the countenances so as to give them special character, they abandoned the attempt, adopted one mechanical type of face, and wrote the names under each figure. The proceeding was simply a confession of weakness.

Professor Formilli went on to describe what he called the work of the Cosmati in Westminster Abbey, in regard to which we may say that there is no evidence of any one of the Cosmati family being employed in the Abbey. There were Italian artists employed, for the mosaic work on the tombs of Edward the Confessor and Henry III., and the names of Odoricus and Petrus are preserved as having worked there, but there is nothing to show that they were members of the Cosmati family; it is a mere assumption. Hence, we think the title of the paper was, so far, inaccurate.

The real occasion of the paper was the fact that Professor Formilli has just been engaged in superintending the execution of facsimiles of the work of the Italians at Westminster, for the exhibition at Rome next year. These have been very well executed, and had been lent to the Institute for the evening, and were on view in the East Room after the lecture. The most interesting feature of the evening, however, was the rapid succession of lantern views of mosaics of the basilicas of Rome, and in St. Mark's at Venice. These served to bring the whole subject before the audience in a panoramic form, and were much appreciated. There was a large attendance, including a good many ladies.

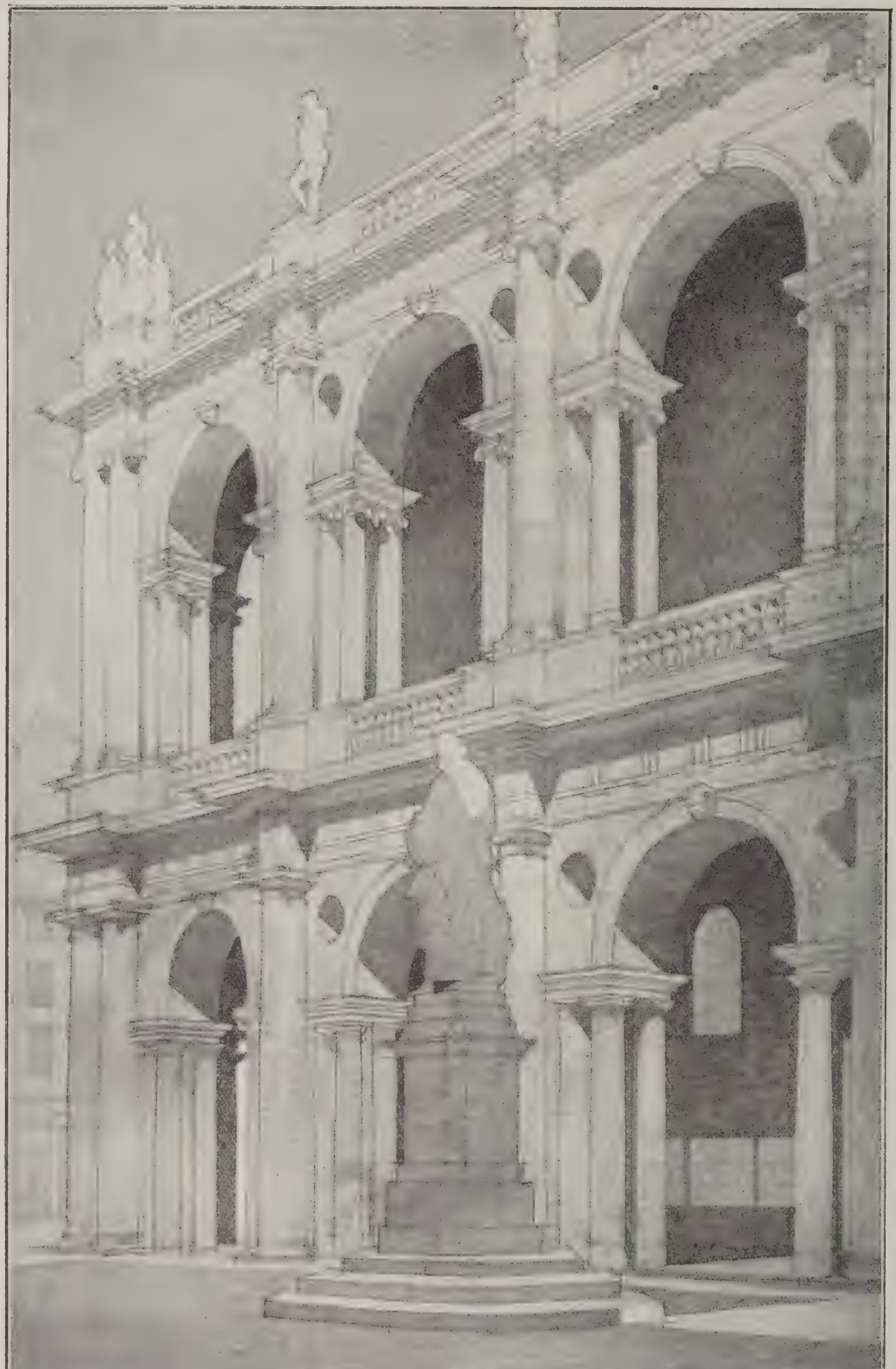
Yerbury v. T. and R. Wortley.

THE history of this case is, very rightly, fully recorded in the last issue of the R.I.B.A. Journal. The architect, who is the plaintiff in the case, in the end obtained a judgment in his favour, but had to go to the House of Lords for it, the Court of Appeal having reversed the "first instance" verdict in his favour. The case illustrates the danger of verbal agreements, and the importance to the architect of getting things clearly stated in writing. The short of the matter is that the plaintiff verbally agreed to finish the carrying out of a block of flats A, commenced under another architect, on the understanding that he should in that case be commissioned to carry out the two intended adjoining blocks, B and C, at the usual commission of 5 per cent. These blocks, however, were for the time abandoned, and the defendants then appear to have denied the validity, or the existence, of any verbal agreement with the plaintiff to carry them out; the plaintiff claiming the usual 2½ per cent. for buildings designed but not carried out. The details are long and involved; there may, no doubt, have been genuine misunderstanding on both sides; but Mr. Justice Lawrence gave the plaintiff 2½ per cent. on £24,000, the estimated cost of Block B, and 1 per cent. in respect of the extra work involved in making the plans applicable to Block C. The Court of Appeal decided that there was no binding agreement with the plaintiff of the nature claimed by him, and that he was only entitled to 1 per cent. on the estimated cost of Block B, and a sum of £210 in respect of making the plans applicable to Block C. The reversal of the original judgment seems to have arisen from a conflict of evidence as to whether the plaintiff had really executed the working drawings and specification in full, or whether he was in part working on those of the previous architect. It is significant, however, that Lord Justice Moulton, the most scientifically learned judge on the Bench, disagreed with the two other Appeal Judges, and affirmed the first judgment; and it is not surprising to find that the Lords restored the decision of the original Court, one of them making a pointed remark in regard to the opportunity which the judge of the first instance had in hearing and estimating the evidence at first hand. Mr. Yerbury may be congratulated on having been successful in the end in obtaining a verdict and saddling the costs on the defendants; but he would have been saved a great deal of delay and trouble if he had realised the wisdom of obtaining written agreements where payment of money is concerned.

THE CHURCH OF S. FRANCESA, ASSISI. DRAWN BY C. D. CARUS-WILSON, A.R.I.B.A.

Liverpool Cathedral Amended Design.

MR. G. GILBERT SCOTT'S amended design for Liverpool Cathedral was on December 1st approved by the Committee. It provides in the interior an unbroken central space of nearly 200ft. by 100ft., an area equalled perhaps by only two other cathedrals in the world, and not approached by any cathedral in England. Externally, as will be seen from the illustration on p. 580, it shows a great central tower more than 100ft. square, and rising to a height of 280ft. above the roadway and 120ft. above the transepts. The cost of the amended scheme will be £25,000 more than that of the original. Among the chief advantages claimed for the single tower are a concentration and full view of the congregation, such as are obtained, for example, beneath the dome of St. Paul's, or, on a smaller scale, in the "Octagon" of Ely. Moreover, the single tower affords greater light and superior ventilation; while it may be said to add to the unique design and dignity of the cathedral, especially upon such a commanding site as St. James's Mount, which offers many distant views. Seen, say, from Higher Tranmere, or from the bar of the Mersey, the twin towers could not secure the crowning effect which one very massive and high tower will command. Then, the belfry will be extended, and the chimes become more far-reaching. Of course, there are involved in the change some architectural, and possibly a few sentimental, points, on which controversy may arise, but no doubt both the architect and the committee are fully prepared to meet criticism. Already a correspondent of the "Liverpool Post" has expressed "great disappointment" with the new design. "Instead of the twin towers," he says, "with their solemn severity—strictly in keeping with the general design—we are treated to a single square tower, expressionless, and hopelessly out of proportion to the entire length of the building. Of course," he continues, "with foundations not originally intended to carry the enormous weight of a great central tower of dignified dimensions, it has been necessary to resort to the proposed" arrangement, which in his opinion, "spoils the character of the original design." Whether or not there is any justification for such criticism (to which, of course, we are not committed) may perhaps be apparent from the view which, by the courtesy of the architect, we are able to reproduce, together with a plan showing the interior effect of the amended design.



THE BASILICA, VICENZA, BY PALLADIO. FROM A DRAWING BY C. D. CARUS-WILSON, A.R.I.B.A., MADE FOR THE BRITISH SCHOOL AT ROME.

THE NEED FOR A TRADITION IN MAKING WORKING DRAWINGS.

BY HALSEY RICARDO, F.R.I.B.A.

IT was accepted the other night at the Architectural Association as an obvious truism that the objective of the architect's draughtsmanship was the working man who had to carry out his drawings and realise what they meant; and in these days of extreme individualism, when every architect is a law unto himself, and almost prides himself upon the fact that the drawings which issue from his office shall bear his sign manual down to the last tracing, in regard to the way these drawings are got up—one comes to pity the position of the shop foreman and the clerk of the works, who, as each new job comes up for execution, has to puzzle out and learn a new set of conventions, a new alphabet, and a new language. In past times, when the architect and the artizan were more in touch with each other, when the builder at that moment was working probably for him only, and had only to bear in mind his particular conventions, when drawings were fewer and traditional ways of carrying out features and details were largely followed, the builder's position in this respect was easier.

And the architect, taking advantage of traditional usage, took advantage also—or was content to avail himself passively—of the shop conventions. But under the present state of things there is, broadly speaking, no tradition as to construction extant. It is only in remote country places that you find the builder prepared to put in doors and windows (for example) without further particulars than as to their sizes and the positions that they are to occupy in the walls. Under the contract system, and with elaborately tabulated quantities taken out for it, and probably to serve as a basis for competitive tendering, every crevice and cranny of construction has to be explored and delineated, and a cottage that used to be erected by the village builder from drawings made on a board with a lump of chalk, requires now a treatise on the building commandments, called a specification, and a wheelbarrowful of working drawings.

If such wealth of instruction is requisite and inevitable, is it not time to consider whether something could not be done to standardise this prodigality of output, and render it more easy of digestion and assimilation by the workman who has to deal with it? It is all very well for the producer of the drawings—he has got the whole building in his mind's eye, and he is, so to speak, working down from three dimensions to two, a fairly simple task; but the builder's foreman has to create in his mind the solidity and effect of the finished building from detached representations, constructing from information presented in two dimensions a conception of the whole. And unless he has worked under the architect on previous occasions, he has the additional labour of having to acquaint himself with the particular language used graphically by the architect.

In one very important particular, and that is the matter of scale, we are pretty well agreed. The drawing of the building as a whole is done to ⅛in. scale, as a rule; details of special parts of construction and particular features to ½in. scale, fittings and so forth to 1in. scale, contours and finishings full size. It is too late in the day, I suppose, to exclaim against the universal adoption of the ⅛in. scale, as being both at once too big and too small. If the plans and elevations to this scale are to serve merely as key plans to explain and connect the separate treatment of the parts or details, it is needlessly big—whilst it is too small to delineate and make it carry upon it all the information one would like to place there, for the sake of compactness and ready accessibility; consequently a good deal of work has to be done over again to a larger scale. If only 3-16in. had been taken to equal one foot, we might have had to enlarge our drawing boards and struggle with "double elephants," but we should have saved the number of our drawings. Still, it is a great thing to have an accepted scale, and, like the pianoforte player, who can tackle his two clefs, after much drilling, as part of the day's work, it's the intrusion of the tenor clef that makes the score so hard to decipher; so an unaccustomed scale, such as ¼in. to the foot, requires a special tuning of the mind before one can put it into one's normal estimate of its size, or see where exactly it takes its place.

The matter of colouring is worth considering. Elevations should be coloured—they generally are—to look as much like the materials to be used, as, in a simple way, they can. And shadows thrown approximately accurately, according to some universally recognised and accepted canon, help the workman to visualise the object before him. But it is when we come to use colour to denote, in plan and section, the material intended to be employed, that some standard of uniformity would be of such comfort to the builder. Why should there not be accepted colours for brick, stone, lead, iron, carpenters' timber, joiners' woodwork, and so on, in section and in elevation, so that one could see at once whether the grey blotch on the section was a stone lintel, or a concrete beam, or counter-lathing to be plastered, or a roller blind, without having to hunt through that un-indexed volume, the specification, to ascertain what was made enigmatical by the colouring?

The bulk of the specification, too, might be reduced, if it were taken as an accepted axiom that it was purely supplementary to the drawings; that the drawings were to show, by careful delineation and profuse figuring of scantlings, as well as dimensions of areas and heights, everything that a drawing could be made to bear, and that the specification was to contain those things only that could not appear on the drawings. At present a great mass of information is duplicated, a needless trouble in the first instance to compile—and a lasting plague to the unhappy foreman who has to turn over page upon page of superfluous verbiage, in his hunt for the piece of information he really wants. The duties of the foreman are arduous enough as it is; he has to live in the future tense as well as in the present, with the past turning up (at best) in the watches of the night, and anything that can make the medium of communication between him and the architect more easily and quickly intelligible deserves consideration.

CLEANING LONDON'S MANSION HOUSE.

At an expense of £400, the Corporation of London are now—for the first time within living memory, it is stated,—washing and cleansing the exterior of the Mansion House. The building was begun in 1731, and finally completed in 1753, when Sir Crisp Gascoigne, an ancestor of the Marquess of Salisbury, occupied the office of Lord Mayor, and first inhabited it. One result of the work of reparation is that the numerous pigeons which have made their domicile under the portico of the Lord Mayor's residence for years past will be dislodged, for wire netting has been put up to prevent their return. Simultaneously with the exterior operations, the State apartments of the Mansion House—including the Long Parlour, which has not been redecorated for twenty years—are being repaired and cleaned at a cost of more than £1,000. The architect will note with mixed feelings the point about the pigeons. Although the birds, ever multiplying prodigiously, are on the whole a terrible nuisance, fouling and disfiguring the public buildings about which they congregate in congested numbers, they in some measure atone for their depredations by the grace and charm inseparable from creatures that fly. St. Mark's without its pigeons is almost inconceivable to the mind's eye; and the popular outburst of indignation that greeted the proposal to destroy those that infested the British Museum was a fair indication of the public love for them, in spite of the allegation that they not only deface but destroy the buildings on and about which they abound. It is said that they peck the mortar in order to get the material from which the shells of their eggs are formed, and that, being so numerous, they are in this way capable of doing very considerable damage.

THE HOMES OF QUEEN ELIZABETH'S COURTIERS.

INTERIORS.

BY J. ALFRED GOTCH, F.S.A., F.R.I.B.A.

In his fifth lecture delivered at University College, London, Mr. Gotch dealt with the interiors of Elizabethan houses, pointing particularly to the very marked development in the way of comfort and decoration.

Examples of the interior decoration of mediæval houses are somewhat scanty, very few having survived. Either the early houses have perished, or from time to time they have been modernised. What is evident, however, from the survivals is that while the rooms of the more important houses were not left unadorned, nevertheless, in the turbulent, and often dangerous, years of our early kings, decoration was but a secondary consideration.

By the period at which we have now arrived, however, people had more leisure, and more inclination to consider the amenities of life, and they had more means with which to gratify their inclinations. As on the outside, so on the inside of the houses, stateliness and display were the ruling factors in their treatment.

Lord Burghley on Holdenby.

Sir Christopher Hatton, who is said to have danced his way into Elizabeth's good graces, built the splendid palace of Holdenby, in Northamptonshire, in the years bordering on, and prior to, 1580. It happened that in the year 1579 Lord Burghley was in the neighbourhood of Holdenby, and advised Sir Christopher of his intention to visit his new mansion. Unfortunately for the guest, Sir Christopher was not at home; but his absence was fortunate for us, since it led to Lord Burghley's writing from Holdenby an interesting letter to his host, in which he records his impressions. "I found," writes Lord Burghley, "a great magnificence in the front or front pieces, of the house, and so every part answerable to other, to allure liking. I found no one thing of greater grace than your stately ascent from your hall to your great chamber; and your chamber answerable with largeness and lightsomeness, that truly a Momus could find no fault. I visited all your rooms, high and low, and only the contentation of mine eyes made me forget the infirmity of my legs. And where you were wont to say it was a young Theobalds, truly Theobalds I like as my own; but I confess it is not so good as a model to a work, less than a pattern, and no otherwise worthy in any comparison than as a foil. God send us both long to enjoy Her for whom we both meant to exceed our purses in these. . . From a monument of her majesty's bountifulness to a thankful servant—that is, from Holdenby, Queen Elizabeth's memory by Sir Christopher Hatton, her faithful servant and counsellor. 10th August, 1579. Yours most assuredly, W. Burghley." In other letters he speaks of Holdenby as "the best house that hath been built in this age," and adds that "for a gentleman's dwelling of most honour and estimation, it is the best and most considerate built house that yet mine eyes have ever seen."

Stateliness Within and Without.

It is clear from these extracts that Lord Burghley's idea of a house was that it should be not only well planned and well built, but that it should be arranged in a stately manner both within and without: that it should be a house worthy of entertaining the Queen; and we gather incidentally that one of the reasons for building the vast houses of Queen Elizabeth's courtiers was in order that she might be suitably lodged when she went on one of her stately progresses.

Unfortunately for us, this particular house of Holdenby has practically disappeared; but though we can no longer see the stately ascent from the hall to the great chamber, nor those other chambers that were so large and lightsome, we can see something of the same sort preserved in other fine though not such vast houses.

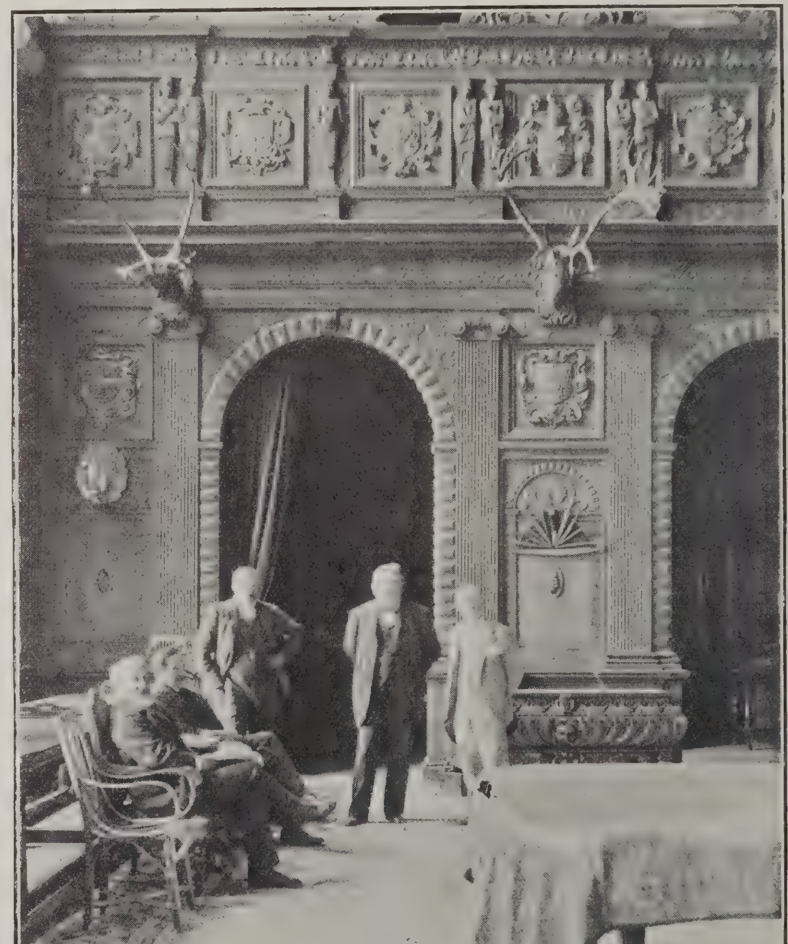
Carved Screens

The great hall—the direct descendant of the ancient halls which were at one time the rooms in which the whole household lived and slept—was still the principal living room; it was still entered from a passage through a screen; from the loft above the screen, the minstrels' notes, we may believe, still occasionally sounded. It still rose, in many cases, from the floor to the roof, thus cutting off communication from one side of the house to the other on the upper floor. The screen through which it was entered was elaborately carved, and adorned with fantastic fretwork, with heraldic shields, with all manner of fruit, foliage, and other ornament. The open roof was half hidden in the gloom, but the smoke no longer rose from a central hearth to eddy among its timbers; for in one of the side walls was a huge fireplace, large enough to hold a tree trunk, and surrounded by a chimneypiece, which in its turn was fantastically carved, and bore as its principal ornament the arms of the owner. At the further end of the hall was still the daïs, on which the heads of the household took their meals, just as up to the present time the heads of a college take theirs. The windows glowed with heraldry; along the walls they were, as of old, placed high up; but at the daïs there was a bay window, the sill of which was brought down low enough to afford an outlook.

Characteristic Examples.

From the daïs end a doorway led to the grand staircase; from the entrance passage doorways led to the kitchen and the other servants' rooms. But the present concern was to see how an Elizabethan house looked, not so much how it was planned, and to this end the lecturer showed and described a large number of views. These included the halls of Wadham College, Oxford (1610-13); Trinity College, Cambridge (1604-5); Hatfield House (1607-11); the long galleries at Knole (1605); Longleat (about 1580); Haddon (1567-84); Charlton, Wilts (1607); Hatfield (1607-11); Apethorpe (1627); the Great Chamber at Castle Ashby, Hatfield, Blickling (1619-20), Lyveden (1600); Rushton (1595); and noteworthy features at Kirby, Drayton, Boughton House, Trerice, South Wraxall, Burton Agnes, Earlshall (Scotland), Ragdale, Bradninch, etc.

The walls of Elizabethan great houses were usually covered with wood panelling, but sometimes with tapestry. At this period the panels were usually plain, but were sometimes inlaid with wood in delicate patterns. In later years the panels were arched, and at the sides imitation pilasters were introduced.



LONGLEAT: SCREEN IN HALL.

HOT WATER SUPPLY INSTALLATIONS.

By A H. BARKER, B.Sc.

A correspondent recently enquired, "How ay an architect, when writing a specification r hot-water supply, arrive at the sizes, uges, materials, etc., of the boilers, cylin- rs, tanks, and pipes? How are the various essures arrived at that the fittings ought to ithstand?"

A complete answer to these questions would volve a treatment of almost the entire sub- ct of hot-water supply.

For practical purposes, the answer will de- nd on the size of the installation and the nount of money that can be allowed for it. ith a hot water supply apparatus it is pos- ble to make a great difference in cost and ficiency without producing a very great parent difference in the apparatus.

There are many practical considerations to taken into account, for which no theoreti- l calculations can provide, and allowance n only be made for these practical con- derations as the result of considerable ex- rience. The manner in which the instal- tion is looked after is of very great impor- nce to the satisfactory working. If the ater is hard and liable to deposit scale, all zes must be increased. If on the other and the water is soft, although the sizes of ipes, etc., have not to be increased, yet the aterial of which they are made may have be more expensive, especially if the water ntains traces of organic acids.

I. A typical small installation for a small ght or ten room house having, say, one vatory basin, one bath, one kitchen sink, d perhaps one housemaid's tap, would con- st of a boiler in the kitchen range circulating a cylinder or storage tank in 1¼in. pipe. rom the cylinder a 1in. separate main circuit rculation would be carried, returning again the cylinder, and connections would be ade with a single draw off pipe from this ain circuit to the taps.

II. A larger house, or small institution or otel, would probably have in addition to e above a separate independent "dome- p" or other type of boiler, preferably with agazine feed, connecting to the same cylin- er, so that either boiler could be used when ccasion required. The circulating pipe would lso be larger, probably 1½in. instead of ¼in., and the distance of the taps from e boilers would be greater.

III. A large institution may have any de- ree of complication in the distribution of ot water, and only the roughest general ules can be given to apply to such an in- tallation. A large and scattered institution ill frequently require either a central plant om which the water is pumped through ystems of mains to the remote parts of the stitution, or a system of steam pipes carried water heaters situated near the points here the hot water is required, with suit- ble arrangements for the return of condensed ater to the boiler, and other complications. ach of these different systems requires separ- te treatment, and the way in which they an be carried out depends almost entirely n the amount of money available.

The sizes of pipes would be determined omewhat as follows:—

I. For a cheap installation, ⅜in. draw off ipe would be carried to each lavatory and ndependent tap; ¾in. pipe to each bath. f the installation consists of one bath and avatory sink, housemaid's tap, and perhaps ne other tap, the circulating pipe might be arried in ¾in. at the smallest, 1in. would be referable.

The circulation from the boiler to the ylinder should be not less than 1¼in. if the vater is at all hard and liable to deposit cale, otherwise 1in. may be attempted, al- hough it is very undesirable in any case to estrict the diameter of this part of the pip- ng. As soon as the circulating pipe begins be stopped up it is usually necessary to eplace it with a new pipe, as it cannot generally be cleaned out, so that the larger this pipe is the more economical it will be found in the long run.

DETAIL OF DINING-ROOM CEILING AT APETHORPE HALL: ARMS, FANE IMPALING NEVIL.

For a better class small installation the pipes would be increased one size throughout, and steam quality only would be used.

II. The sizes of pipes in a medium size apparatus would be as follows:—

Between boilers and cylinders not less than 1½in. The main circuit would generally also be 1½in., seldom greater (except for very large circulation), though 1¼in. is often used. The branches to the taps would be the same size as in the smaller installations and the feed supply to the boiler 1in. or 1¼in.

III. For a widely extended installation a more scientific method of determining pipe sizes is required. In these cases the calculations of the amount of water flowing through each pipe per minute must be made, and the pipe size determined according to the pressure available for forcing the water through the pipe. Strictly speaking, the size will vary widely for the same delivery according to the length of the pipe required and the pressure available for forcing the water through the pipe, and the loss of that pressure in the pipe owing to friction. Such calculations, however, need a good deal of technical knowledge, and the following figures give a rough idea of the magnitudes of pipe calculated for a loss of pressure of about 5ft. per hundred ft. run.

A 1in. water pipe, when continuously running full bore, will carry 375 gallons, 1¼in. pipe 750 gallons, 1½in. pipe 1,200 gallons, 2in. pipe 2,400 gallons, 2½in. pipe 4,000 gallons; 3in. pipe 6,000 gallons per hour, each with a loss of head of about 5ft. per hundred ft. run.

The sizes of pipes actually adopted depend on the number of taps which are likely to be required to run at full bore simultaneously, and also on the pressure of water behind them.

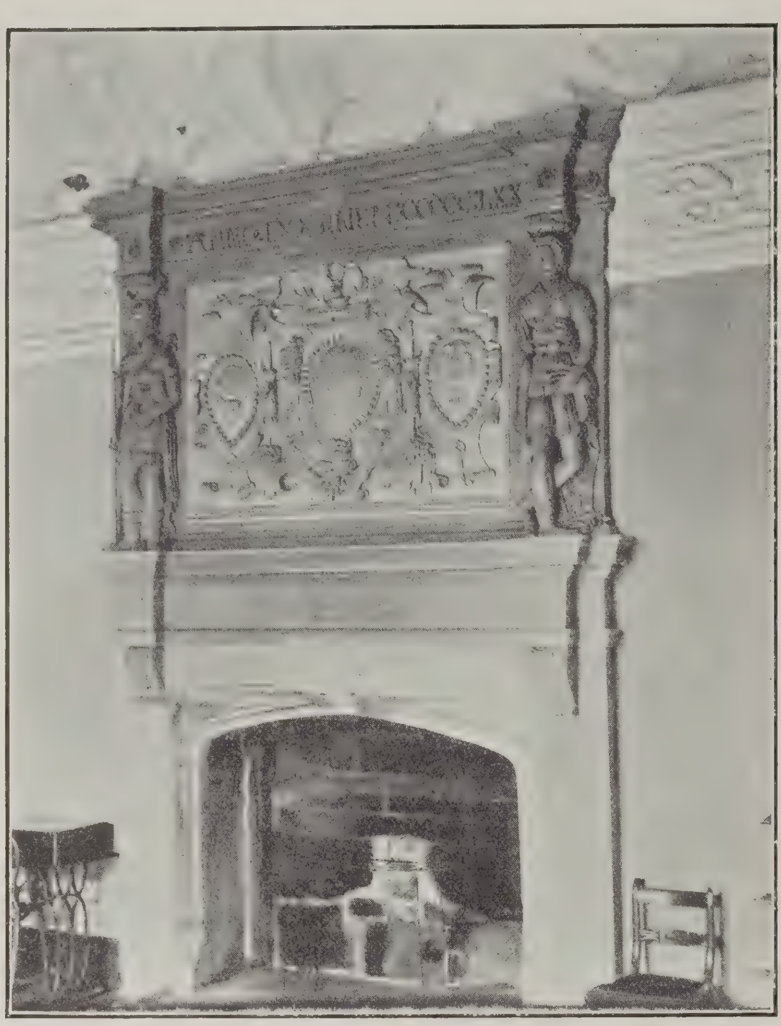
In a one storey house or bungalow where the tank can only be some 10 or 12 ft. above the draw off taps, the size of pipe must be larger than if the tank is situated at the top of a two or three storey building. The size of pipe also depends on the rapidity with which it is desired to fill the baths. In large public baths, where the bathers follow one another in rapid succession, the time of filling the bath must not be more than 20 to 30 seconds from the time the valve is opened, whereas the bath in a private house may require two minutes. The difference between an installation provided with rather small pipes and the same installation provided with larger pipes may make a difference of 2 to 1 or more in the time required to fill the bath.

If a large installation consists of steam pipes carried to calorifiers or water heaters, each such calorifier forms part of a separate system, and the sizes of pipes for each of those separate systems would generally be calculated as under heading II. The sizes of the steam pipes required is again a highly technical matter for which accurate general rules cannot be given in a short article. An idea may be obtained, however, from the following:—

1in. steam pipe at a pressure of 10lbs. per sq. in. 200ft. long, would supply heat for 150 gallons per hour; 1¼in. pipe, 250 gallons per hour; 1½in. pipe 400 gallons per hour; 2in. pipe, 750 gallons per hour. If there is a larger steam pressure available, these deliveries could be greatly increased.

Cylinders.

A rough general rule for determining the sizes of cylinders for a small cheap job is to allow 10 gallons of storage capacity for every



TRERICE, NEAR NEWQUAY: CHIMNEYPIECE IN DRAWING-ROOM.

tap provided for. More accurate calculations can only be made after calculation of the amount of water which it is estimated will be drawn off at any one particular time. The storage cylinder should be sufficient to provide for the whole of the water which may be required to be drawn off within a short time. The larger the cylinder the longer is the time necessary to raise the heat and the less the probability of boiling over.

In a dwelling house or institution the size of the cylinder depends principally on the number of baths which it is required to draw off in rapid succession. Each bath may be counted on as consisting of 15 gallons of really hot water, or 30 gallons of water at 110 deg. If, therefore, two baths have to be provided in one hour, and if the boiler is capable of producing, say, 20 gallons of hot water per hour, the cylinder should be of not less capacity than 30 gallons, although 40 would be preferable; but smaller cylinders than this frequently give satisfaction if the arrangement of pipes is good, and firing judiciously done.

Generally, in order to determine on an intelligent principle of the capacity of a cylinder, an estimate must be made of the maximum quantity of hot water and its temperature likely to be required in any one hour, and the average that probably will be required throughout the day. If several baths are required first thing in the morning, the cylinder must be (1) large enough to hold the necessary hot water, and (2) coated well enough to keep it hot during the night. Thus a comparatively short time in the morning will bring its contents up to the required temperature. In this case the capacity of the cylinder should be equal at least to the full quantity of water which is likely to be required first thing in the morning. Generally speaking, the amount of water actually required is considerably less than the estimate.

Powers of Boilers.

If this is to be determined on an intelligent principle, it is necessary to make a preliminary estimate of the time in which a given quantity of water must be raised up to a certain temperature. It is not always possible to put in a size of boiler strictly according to the work it has to do, and the inevitable discrepancy is made good, as far as possible, by over-firing the boiler or forcing it when necessary, which of course results in its speedy deterioration. The size of boiler for a small house job is determined by the size of range in which it is put. Each size of range has its own particular size of boiler, but no range should be accepted which does not provide liberally for cleaning facilities in the boiler, without removing the boiler from the range.

The capacity of the boiler can only be estimated when its heating surface is known. Every square foot of a range boiler exposed to the direct action of the fire, if the boiler is clean and properly mounted, may be relied on to produce 10 gallons of water at 160 deg. per hour, which is generally sufficient for one ordinary bath. The accumulation of scale in a boiler enormously reduces its heating power, and promotes its speedy destruction.

II. An important point in the determination of the size of an independent boiler is to know its fuel capacity, and how long one charge of fuel will keep the water hot. A really first-rate installation will frequently provide all the hot water required in a large establishment on one charge of fuel per 24 hours, the boiler not being touched in the meanwhile. Hot water can be provided for in quite an extensive establishment with a boiler of this kind for an absurdly small sum per day, two or three pence in fuel.

III. Large installations of course require separate calculations for each case. Briefly, in large installations each square foot of boiler heating surface would give five or six gallons of hot water per hour after all losses have been taken into account.

Material and Gauge.

Pipes.—If the pipes are of wrought iron they should in all cases be galvanised to avoid staining the water with rust and consequent deterioration of the pipe. Wrought iron pipes are made in three qualities—1, Gas quality; 2, water quality; 3, steam quality. Of these, gas quality cannot be recommended for any but the cheapest work, and if used there is not always an economy even in first cost. The water quality is most commonly used, but the steam quality is the best. If the architect specifies one or other of these qualities he need not trouble about the actual thickness of the material, because this will be unalterable.

In certain districts, especially in Lancashire and Yorkshire, the ordinary quality of water has a very injurious effect on wrought iron pipes, whether galvanised or not, and causes its speedy deterioration. In these cases pipes should be made where the available money will allow of it, of copper. The gauge of the copper is then a matter of importance as affecting the cost. The best gauge to use, which is strong enough for all ordinary purposes, is what is known as 16 wire gauge. Pipes of half that thickness, namely, 20 wire gauge, are sometimes considered sufficient where price is an important factor, whereas when price is of no account 14 gauge is used.

Cylinders.—The material of cylinders is determined by the same considerations as that of pipes. Copper cylinders are more expensive, but more durable, and, if well kept, of better appearance than galvanised wrought iron.

The thickness of wrought iron cylinders should never be less than ⅛th of an inch, and for good class work 3-16th of an inch. If thinner than this they are liable to collapse if at any time steam is generated in the boiler, though copper cylinders are frequently made 1-16th in. thick.

Boilers.—The boiler, if of wrought iron, should have a thickness of ¼, 5-16, or ⅜ of an inch, according to the quality desired, and special provision should be insisted on for thorough cleaning by one or two inspection doors, preferably two, if the boiler is of the boot pattern, as this type of boiler cannot properly be cleaned with one inspection door only.

Boilers are generally made of wrought iron, though copper boilers are becoming more frequently used in the better class work. The thickness of the copper boiler is generally ⅛ to ⅜ of an inch.

Care must be taken that a copper boiler is mechanically protected from blows with a poker.

Test Pressures.

The fittings ought to withstand test pressures 10 times the actual pressure which they would be subjected. To determine the latter it will be sufficient to divide the height of the expansion tank above the bottom of the boiler by 2. This gives a margin on the safe side, and may be taken to be the maximum dead pressure in the entire system. Shock pressures, owing to the sudden stoppage of flow of water in any pipe, sometimes arise when a cock pattern of valve is suddenly closed. Such pressures may occasionally reach five or six times the maximum static pressure. The high factor of safety employed (10) will be sufficient to provide for these shock pressures. There is generally no lack of strength in pipes and valves to resist any pressures to which they are likely to be subjected. If a cylinder is made too thin, and if the water is at any time allowed to boil, and steam finds its way into the cylinder, a thin cylinder less than ⅛ of an inch is liable to collapse. The bursting of a wrought iron boiler is of very rare occurrence, except when it is burnt through owing to deposit being allowed to accumulate, or unless the pipes are stopped up with ice or scale, a high steam pressure accumulates in consequence. All kitchen boiler explosions are probably caused by this. The usual theory of kitchen boiler explosions, viz., that the boiler becomes red hot and a sudden inrush of cold water causes rapid generation of steam and consequent bursting, is probably wholly wrong, as all the steam which could be generated would easily escape through a pipe of quite moderate size, unless it were stopped up by scale or otherwise.

MANCHESTER SOCIETY OF ARCHITECTS.

The Kalendar of the Manchester Society of Architects (Incorporated), 1910-11, contains a list of past presidents, from Mr. Isaac Holden, F.R.I.B.A., 1865-7, to Mr. Paul Ogden, F.R.I.B.A., 1907-9; the president now holding office being Mr. P. S. Worthington, M.A., F.R.I.B.A. The Society has an hon. secretary and treasurer, Mr. Isaac Taylor, F.R.I.B.A.; an assistant hon. secretary, Mr. Gerald Saxville, A.R.I.B.A.; and a secretary, Mr. Arthur S. Brewis, F.C.A., Canada Chambers, 36, Spring Gardens, Manchester.

In the annual report it is stated that the aggregate membership is 268, made up of 105 Fellows, 113 Associates, and 50 students. The Council record the deaths during the year of two past-presidents, both of whom had been members of the Society since its foundation in 1865—namely, Mr. J. Medland Taylor, and Mr. Thomas Worthington. The deaths of two Fellows, Mr. William Owen and Mr. Jesse Horsfall, are also recorded. A particularly practical item contained in the report is as follows: "The Manchester Chamber of Commerce informed your Council that it had adopted the following resolution arrived at by the Cement Manufacturers and Merchants:—'That this meeting of Cement Manufacturers and Merchants agrees forthwith to quote, sell, load, and deliver Portland Cement according to the standard ton of 2,240lbs. only, and to load such cement, when supplied in bags, so that the ton of 2,240lbs. is contained in a certain number of bags. This resolution to apply to cement quoted for and supplied in Great Britain, but not to cement delivered in casks when quoted for and sold by a specific weight per cask.' It appears that, as regards the number of bags in which a ton of cement is delivered, the practice varies according to locality, and your Council passed and sent to the Manchester Chamber of Commerce the following resolution on this matter: 'That, in the opinion of this Council, it is important that the number of bags of cement to the ton be standardised, and it is suggested that 10 bags to the ton is the most convenient quantity.'"

In October last, Mr. Paul Ogden was elected the colleague of the President to represent the Society on the Advisory Committee of the Manchester School of Architecture.

The attention of the Competitions Committee has been largely directed to the revision of the regulations and suggestions for architectural competitions in consequence of the proposals of the R.I.B.A. to deal with this question. With a view to putting competitions upon a more satisfactory basis, and to working with other societies, the Committee has been in communication not only with the Institute, but also with other allied societies whose areas adjoin. The Liverpool Society has taken the matter up with great interest, with the result that, after much correspondence and several joint meetings, the two committees have agreed upon what appear to them to be good standard regulations for competitions, and also a standard set of conditions. This has been placed before the R.I.B.A. Competitions Committee, and to that Committee the R.I.B.A. has referred the revised regulations back, and is adding representatives of allied societies to the committee for the final revision of the regulations and suggestions. With regard to several local competitions in which the Committee saw fit to take action, it is noted with satisfaction "that the local Association of Master Builders has supported the architects in this matter of recommending its members not to tender for the work on the ground of the unfair conditions."

Among the purchases for the library we note vols. 21-25 of the "Architectural Review," and "Recent Domestic Architecture," edited by Mr. Mervyn E. Macartney. The total number of volumes now in the library, exclusive of societies' calendars and reports, is 1,002.

The Practice Committee report that they have had several instances of tradesmen offering commissions to architects brought before them, and have forwarded the cases to the Council to be dealt with. Questions of discount to builders on provisional sums included in quantities; also with regard to the period of maintenance required from builders by architects, and the time limit for final payments, raised by the Manchester, Salford, and District Building Trades Employers' Association were con-

EDINBURGH LIFE ASSURANCE BUILDING, EDINBURGH: GENERAL OFFICE. J. M. DICK PEDDIE, ARCHITECT.

sidered, and reports submitted to the Council, who adopted the following resolution: "1. That architects be advised to make it clear in the bills of quantities that the contractor is to add his profit in provisional sums included in quantities. 2. That a time should be stated in the conditions of contract fixing the period of maintenance required from the builders. 3. That the general feeling is in sympathy with the question of a time limit for final payment, and that as far as possible the conditions of contract re final payment should be adhered to.

The Town Planning Committee record that the information gleaned by the President during a tour through the chief German cities has been of considerable service to the members. From a map brought up to date with information furnished by the City authorities, a plan was got out to show how a portion of the southern outskirts of Manchester might be developed with advantage. This was illustrated by means of a plan and two bird's-eye views, and has been placed before the public at exhibitions held in Manchester and elsewhere. The Committee have now under consideration the preparation of a larger plan dealing with the main lines of extension on the northern side of the city; and they have also placed their honorary services at the disposal of the City authorities with respect to the laying out of 150 acres of land at Blackley.

OUR PLATES.

House at Beaconsfield.

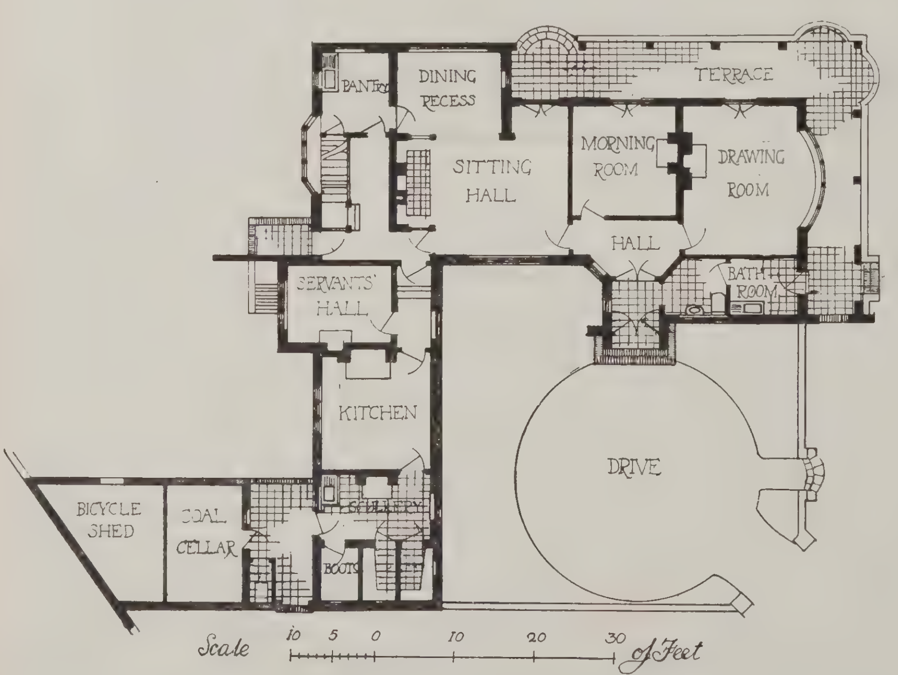
This house is proposed to be erected for Mr. R. M. C. James from designs by Messrs. Collcutt and Hamp, architects, of Bloomsbury Square, W.C. The ground-floor accommodation is shown by the accompanying plan. It will be seen that leading off the entrance hall are the drawing-room, morning-room or study, and sitting-hall. The drawing-room has a large segmental bay looking on to the verandah. The morning-room and sitting-hall also open on to the verandah. The sitting-hall has at one end a dining recess, adjoining which is the pantry and passage leading from the kitchen. On the first floor are five bedrooms, bathroom, and two servants' bedrooms. The principal corridor has four linen wardrobes, easily accessible from the bedrooms, and the servants' bedroom corridor is cut off from the main corridor by swing doors. The exterior is to be of red brick, rough-cast, with old tiles on the roof, and oak half-timber to gables. Extending the whole width of the house on the south-west side is formed a terrace 60ft. by 25ft., with steps leading to a formal garden. An approach is arranged from the main road by means of a sloping path to the side entrance. A rose pergola is provided to fit in with the general garden plan.

"Highfields," Marlow.

This house is now being erected. The drawing reproduced was exhibited at this year's Academy.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

At the meeting of the Society held on November 24, Mr. Arthur Marshall, A.R.I.B.A., gave an interesting account of an Eastertide tour in Spain. Starting at Bayonne, he "conducted" his audience, by means of an excellent series of photographic slides, through the picturesque towns of the plateau to the capital. Madrid itself, save in its night life, did not inspire enthusiasm. The interest of the lecture, therefore, lay chiefly with the districts en route. The snow-capped grandeur of the Pyrenees, the rude charm of the Basque country, the old-world towns with their picturesque gateways and market squares, the gorgeous sea-side palaces of San Sebastian—all afforded subjects for picture and discourse, while the national sport was illustrated in a series of views which most realistically suggested the thrilling incidents of the bull-fight. The increasing use of electricity, even in the smallest towns, was a feature of no small significance, the cables and insulators contrasting strangely with the almost mediæval quaintness of the cottages and crooked streets, while worthy of notice was the architectural consideration with which the plane trees were disposed in avenue and market-place, their interlocking branches and dense foliage affording shade and shelter from sun and heavy rain-storm. Mr. Marshall was, at the close, cordially thanked for his address, on the motion of Mr. Percy Robinson F.R.I.B.A., and, in seconding the vote Mr. H. E. Henderson briefly referred to the architectural interest of many of the slides illustrating bits of the old Spanish towns. The next meeting will be held on Thursday, December 8, when Mr. Mowbray A. Green, F.R.I.B.A., will lecture on "The Architecture of Bath."



HOUSE AT BEACONSFIELD.

COMPETITIONS.

Douglas—"Villa Marina."

It is announced that the President of the R.I.B.A. has nominated an assessor in this competition, whose name, however, has not yet been published.

Proposed Concert Pavilion for Leicester.

A special committee of the Leicester Town Council have presented a report recommending the erection of a concert pavilion on land belonging to the Corporation adjoining Victoria Park and Regent Road. A substantial hall, capable of seating 3,000 persons, with retiring, cloak, refreshment and other rooms, can be erected for £15,000 exclusive of architect's commission, and the committee advise the erection of such a building, and that local architects be invited to submit designs and estimates, the following prizes being offered for competition: First prize £100, second £50, third £25.

LIST OF COMPETITIONS OPEN.

DEC. 14. DOUGLAS (ISLE OF MAN).—Competitive designs and plans for the laying out of the grounds of Villa Marina, Douglas. Particulars in our issue for October 12.

DEC. 31. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A., in our issue of November 2nd.

JANUARY 21, 1911. SCHOOL FOR TAUNTON.—The Education Committee of the Borough of Taunton invite architects practising in that borough to submit designs for a provided school for 440 children. No premium is offered, but the author of the selected design may carry out the work at the commission of 5 per cent. Address George H. Kite, Town Clerk, Municipal Buildings, Taunton.

FEB 1, 1911. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

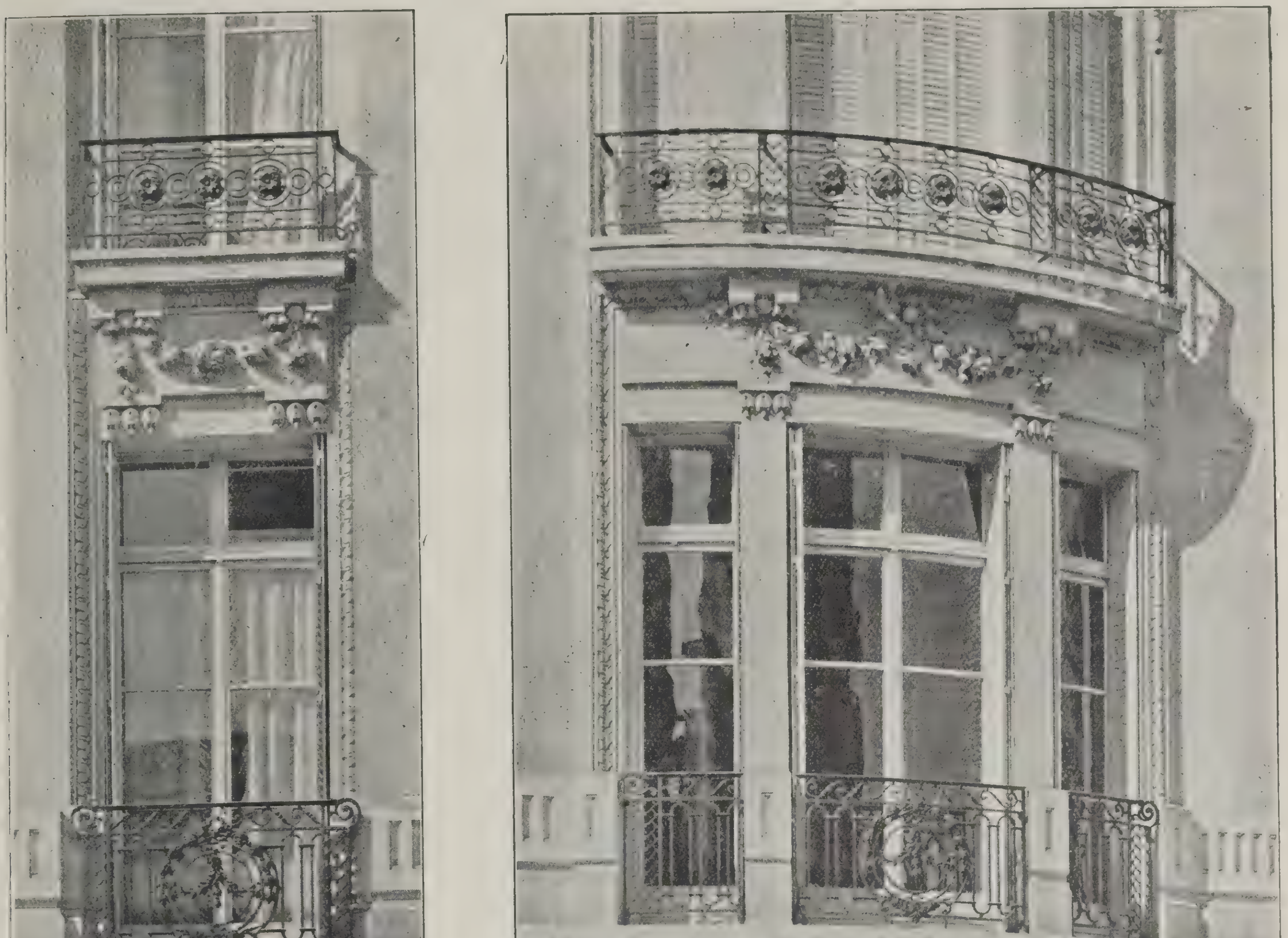
FEB. 8, 1911. PENRITH SECONDARY SCHOOL. The Governors of Queen Elizabeth's Grammar School, Penrith, are prepared to receive competitive designs for the erection of a new secondary school, accommodating 200 students, with provision for the conduct of technical and evening classes. The following premiums are offered: 1st, £50; 2nd, £25; 3rd, £10. The designs must be sent in not later than February 8th, 1911, to James Cropper, The Vicarage, Penrith, Clerk to the Governors.

MARCH 1, 1911.—MUNICIPAL OFFICES, COVENTRY.—This competition is open to all architects, and the assessor is Mr. E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry. See our issue for November 23rd.

MARCH 15, 1911. THEATRE AT SAN SALVADOR.—Particulars in our issue for October 26.

NO DATE. TREDEGAR (MON.). MODEL VILLAGE.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

NO DATE. SOUTHPORT ELEMENTARY SCHOOL.—Local architects (including those residing in Birkdale) are invited to compete. Particulars from Mr. J. Ernest Jarratt, Town Clerk, Town Hall, Southport.

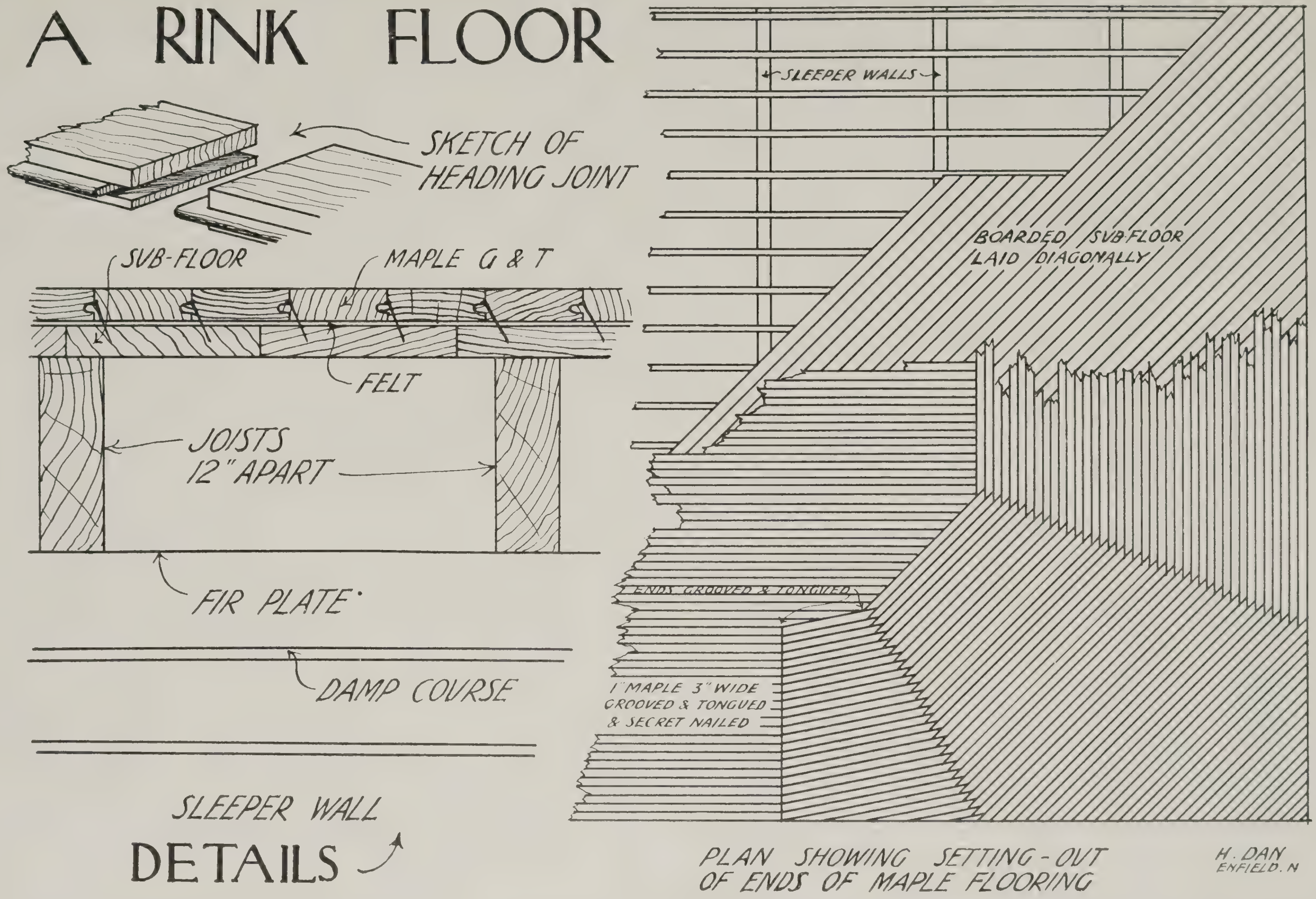


The treatment of these windows is essentially French. The manner in which they are framed in, the carved enrichment, and the ironwork all show that grace and appropriateness which are characteristic of good French work. The building is a large block of flats, and is carried out in the very fine quality white stone which is so extensively used in Paris.

WINDOWS IN APARTMENT BUILDING, AVENUE MALAKOFF, PARIS. ANDRÉ ARFVIDSON, ARCHITECT.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

A RINK FLOOR



This illustration shows the most modern way of laying the floor of a roller skating rink. Upon an ordinary joist floor, boarding is laid diagonally and covered with felt or other deadening material. Upon this, 1 in. grooved and tongued maple flooring, in about 3 in. widths, is secret nailed. All heading joints, mitres, etc., must be grooved and tongued where the boards follow the curve of the skaters at the end of the rink.

IS A DAMP WALL "DEFECTIVE"?

At the West London County Court recently, a considered judgment was delivered by Deputy-Judge Gurner in the case of Mintern v. Sir John Wolfe-Barry and the L.C.C., which turned on the question as to whether a wall which was damp and admitted damp into adjacent rooms as to make them uninhabitable was defective. The trial came before the County Court by way of an appeal under the London Building Act, 1894, from an award by Sir Alexander Stenning. In this case Miss Minturn was the freeholder of 14, Chelsea Embankment, and the London County Council the freeholders and Sir John Wolfe-Barry the tenant of No. 15, the adjoining house. It appeared that the premises suffered from damp, which plaintiff alleged came from the party wall between the defendant's premises and hers, and made several rooms in the basement of her house uninhabitable. In consequence of this she, on June 2nd, 1910, gave to the defendants notice with reference to the party structure between the two houses, stating that she intended, at the expiration of two months, to exercise the rights given her under the London Building Act, 1894, section 88, sub-section 1-11, that she proposed, inter alia, to enter upon his premises and take down creepers, trellis, etc., and dig down to the foundation of the party wall, and should it be found needful to insert a horizontal damp-proof course for the full thickness of the wall, and also on his side to build upon his premises a vertical damp-proof course 2½in. thick, and to do other work on defendant's side of the building. This proposal came before Sir Alexander Stenning, who decided that the party wall was not so far defective or out of repair as to necessitate any work to be executed under the party structure notice. Judge Garner said: It appears that by section 88 the party owners have the following rights:—(a) sub-section 1: The right to make good or repair any party structure which is defective or out of repair; (b) sub-section 11 gives power to perform any other necessary works incident to the other sub-section. It was argued that notice given by the plaintiff was not a party wall notice within the terms of the London Building Act, on the ground that there were no allegations in it that the wall was defective or out of repair, and that there was no work required under the notice which might be described as "making good or repairing." It was also alleged that the demand to take 2ins. of the defendant's freehold property for the purpose of making a damp-proof course was in itself an outrageous demand, and one which was not to cure damp, but to improve the property, and not to "make good or repair within the meaning of the section." Mr. Dickens, for the plaintiff, contended that in order to say that the wall was defective or out of repair it must be non-effective, and that it was not in good repair when it was not fulfilling one of the requirements of a wall, *i.e.*, to keep out damp, and that a non-effective wall was a defective one. Having given consideration to the points urged on behalf of the plaintiff, he had come to the conclusion that the party structure notice was bad on the ground that it practically amounted to rebuilding the plaintiff's premises with modern improvements, which were not in existence when the houses were built, such as inserting a damp-proof course. The view which Mr. Dickens asked him to take, that defective meant something that was non-effective, seemed to him to be too wide, and one involving additions and alterations which had, since the Act was passed, been considered desirable and necessary. The view he took of the word "defective" or "out of repair" was of a much more limited character, and the work required to be done under the notice was not of such a character as could be called "making good" or "repairing." In these circumstances he had come to the conclusion that this party structure notice was bad on the face of it, and that in consequence of the character of the work required to be done it was not a notice within the powers or provisions of the Act. On these grounds he gave judgment for the defendants, with costs on the highest scale.

SOME POINTS ON THE DESIGN OF COTTAGES IN GARDEN SUBURBS.*

BY HENRY R. ALDRIDGE.

The past twenty years have witnessed a striking development in regard to both the building and equipment of cottages. The chief honour for this development is due to the pioneers in modern garden village construction, Mr. George Cadbury, of Bournville; Mr. W. H. Lever, of Port Sunlight; Mr. Rowntree, of York; and the Garden City Company at Letchworth. Not content with laying out these estates on model lines, a definite attempt has been made in all these successful experiments to break away from the dull monotony of the long road, and the featureless planning of the "brick box with the slate lid." It would not be too much to say that, amongst the hundreds of thousands of workmen's cottages erected between 1850 and 1890, not five per cent. were made the subject of any definite architectural thought and skill. A builder saw what, in his opinion, was a desirable plan, set a draughtsman to copy it, and then reproduced it in street after street and in district after district. Variety of treatment was regarded as quite unnecessary. Lines of houses were broken only when the bylaws required a cross street, and in some cases long rows were erected, with upwards of 70 houses, without a single gap. The desire to make the most of land acquired at a heavy cost produced not only the monotony of the long building line, but was directly responsible for a most mischievous blunder in construction, namely, the extension of outbuildings—often carried beyond the first storey—with the result that working kitchens and back rooms were robbed of direct light; whereas with ordinary care in planning they might have been made cheerful work places for housewives.

During the past few years there has happily been a welcome awakening of interest in the designing of cottages for workmen. The Cheap Cottages Exhibition at Letchworth gave an opportunity to many young architects to try their 'prentice hands at the almost impossible task of designing £150 cottages. This exhibition was followed by others at Sheffield (1907), Letchworth (1907), Newcastle (1908), and the present exhibition at Swansea (1910). In all these exhibitions most interesting examples of cottage building were to be seen, and incidentally it has been made clear that, except in areas of exceptional cheapness of building materials, a suitable workman's cottage cannot be produced for less than £200, or £50 per room—apart from cost of land and road-making charges.

When it is necessary to rigidly limit the cost of a cottage the desirability of wisely using every available square foot of space becomes apparent. In most workmen's houses there are usually on the ground floor three small rooms—namely, parlour, kitchen, and scullery. Of these the kitchen is used for cooking and also as a living room. It is the best-used room in the whole house, and is generally the worst-planned room. More often than not it is over-shadowed by a rear extension building. As regards bedroom accommodation, the strong demand of practically all thoughtful workmen and their wives is for three bedrooms. This demand is one which carries with it much weight, since it is based on a close knowledge and clear recognition of family needs. A bath also should always be provided. Some few years ago the criticism that the bath—if provided—would only be used as a receptacle for potatoes or dirty clothes, was often raised when the desirability of making such provision in a workman's house was urged. These critics, however, have been silenced, for whilst there are cases in which working class families have not appreciated the addition of this means to bodily cleanliness, the great mass of them have most cordially welcomed its provision. In cases where economy of construction has rendered a separate bathroom impossible, the placing of a bath in the scullery has been adopted with much success.

Then with regard to the height and ventilation of rooms, what should be the normal height of a room? This question has perplexed many architects desiring to cut down the cost of building, and the matter is still one on which two views can be held with much justice for each. On the one hand, some architects say that 8ft. is quite sufficient, and that every inch above this is wasted. They rightly point out that, given proper ventilation, there is no need for a great amount of waste space. On the other hand, the advocates of more head-room point out that even with good ventilation lofty rooms are much more pleasant to live in, and lack that feeling of oppression which often characterises the room with a low-pitched ceiling. For small cottages the happy medium would seem to be the building of rooms 9ft. in height on the ground floor, and rooms 8ft. 6ins. in height on the upper bedroom floor.

In all cases ventilation should be adequate, and in this relation it may be pointed out that the almost universal adoption in garden villages of the more picturesque casement window should not be accepted as the "last word" in cottage building. The great temptation of the architect in this respect arises from the fact that he has to rely mainly for success in his elevation on the treatment of roofs and windows. It may be admitted that a cottage with a modest expanse of roof and plain sash windows does not strike the eye as favourably as the cottage with an expanse of red-tiled roof and old-fashioned window panes. It may, nevertheless, be found that with the growth of the idea that beauty in use is superior to the beauty of architectural elevation, the more hygienic sash window will be largely used in garden villages.

Some complaint is also made as to the spoiling of bedrooms by the building of these in the roof. Where this is done to secure economy in wall construction there is much to be said for it, but when the shapes of the rooms thus obtained are irregular and the windows are so placed as to render ventilation difficult, then the economy becomes unwise.

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*Abstract from the Official Catalogue of the South Wales Cottage Exhibition at Swansea.

CONCRETE AND STEEL SECTION

(MONTHLY.)

Reinforced Concrete.

There are certain general aspects in which we may view reinforced concrete, and one of these is its nature—namely, whether it is to be regarded as a material or as a form or system of construction. One often sees it referred to as a material, probably because of the word "concrete" in this combination. We prefer, however, to regard the word "reinforced" as modifying the other word, so as to convert the term into a description of a method or system. The point affects the way we are to regard the whole subject. The basis of all the applications of reinforced concrete is that the two materials entering into its combination—namely, steel and concrete—shall be used to assist and strengthen each other in those properties and directions in which one or the other is deficient. And the most important of these is that concrete, which is a cheap material, shall be used to display its characteristic property of compressive strength and steel to take the tension in which the concrete is weak. Concrete will bear a larger crushing load, but it is brittle and will break across if loaded as a beam. However, steel is not only used to resist tension—it is often used to strengthen the concrete in compression. The two materials possess as a combination properties which are seemingly different to those of either alone. It is this result which led some persons to acclaim that reinforced concrete was a novel material, and deserving of a new name. The name "Ferro-concrete" was given to it by the late Mr. L. G. Mouchel, and the term is still used by the Hennebique contractors, and a few others, but it is not generally accepted, because it suggests its literal interpretation of iron-concrete, which would imply a concrete in which the aggregate was bound together by a rust-cement, such as that made with iron filings and sulphur, or that the ingredients were united by iron rust simply. The French early called it "Beton Armé" or "Cement Armé." The latter is inappropriate for concrete, because it only refers to cement; the former title is better, and its nearest English rendering is "Reinforced Concrete," though another translation sometimes used is "Armoured Concrete," which is quite inadequate, for the concrete is not protected by a sheathing or armour as the name suggests. Then we have the American term, "Concrete-Steel." This is, however, a hybrid that does not signify in any degree the nature of the combination—it might mean anything to do with concrete or steel. Reinforced concrete is, of course, not quite happy, for it gives undue importance perhaps to the concrete, though that is the most striking feature of the dual material, but still it seems the best we have, so it meets with most favour.

Expansion and Contraction.

One peculiar property of both steel and concrete is deserving of note in giving the combination preliminary consideration. That is the practical equality of the coefficients of expansion and contraction under changes of temperature. This equality ensures that with such variations of temperature the materials shall work together and not unduly stress each other internally, while it has the further practical importance that in case of fire we have the whole construction expanding equally without any of the tendency so noticeable in other building construction of the steel expanding and pushing the walls out, or buckling and spalling the encasing brickwork or terra-cotta. We all know the disastrous effects resulting from the inequality of expansion evidenced in fires, and how structures are wrecked thereby. The fire-resistence of reinforced concrete is pre-eminent. We do not, however, by such argument avoid the consideration of expansion and contraction, which is a very serious problem, more especially the latter. The subject contains difficulties that are too often unsuspected, and experimental investigation is needed, but if sufficient steel is introduced concrete can be prevented from revealing unsightly cracks by contraction in setting and lowering of temperature.

Adhesion.

The foregoing reference to equality of the coefficients of expansion and contraction of steel and concrete shows the importance in respect to adhesion and friction bond that it is so necessary the concrete should have with the steel in order to develop the required stress therein, for as the materials, by reason of their different elasticity do not bear the same stresses, we can only duly distribute the forces within reinforced concrete structures by depending on the quality of adhesion or bond. In the major part of the works that have now been executed in this system of construction the adhesion has been solely relied upon and resort has been had to mechanical bond to only a very few. This viewed in another way may be said to prove nothing, except that the importance of mechanical bond has not been realised. That may be granted for the sake of enlightening discussion in many cases, but experiments have been sufficiently conclusive, and the amount of practical work done without it is such that we can confidently assert that in very many ordinary cases the adhesion and friction bond is sufficient.

Irregularity of Adhesion.

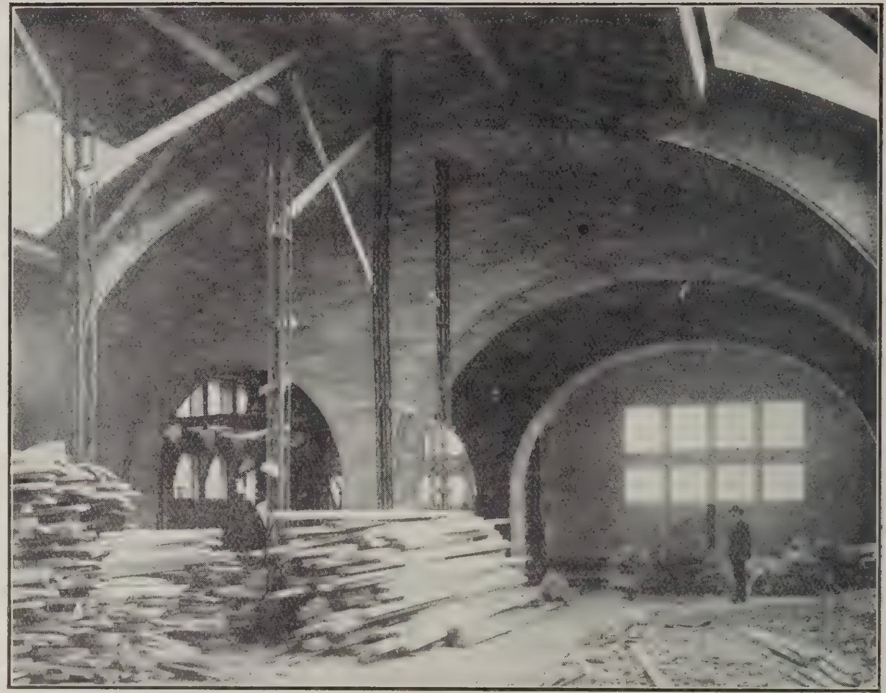
The adhesion is certainly irregular, being dependent upon the pores or cavities in the surface of the steel, the wetness of the concrete, and the contraction in drying out and hardening. Experiments have shown the adhesion varying from 100 lbs. to 700 lbs. per sq. in. and to vary along the length of a rod, at some places adhering, and at others coming away from the surface of the metal. A wet concrete gives greater adhesion than a dry mixture, because it gets the cement right round the steel, which is also advantageous as regards protection against corrosion. It has also been found that rods afford a greater adhesion when rusty than when polished, so that instead of the rustiness of the rods being a detriment it is an advantage in reinforced concrete work. It is a mistake to suppose that the rusting once started goes on inside the concrete. Oil or paint on the rods destroys the adhesion and is dangerous moreover because it tends to cause corrosion by reason of the paint or oil perishing in time and providing a cavity next the steel where moisture could do its work of decay without being prevented by the cement forming a chemical compound with the steel on the surface. The mechanical bond usually found in practice consists of hooking or bending over or splitting the ends of bars (this latter being termed "fishtailing" from the resemblance of the split end of a rod to a fish's tail) and by the bends in rods made for various purposes, as, for instance, where rods in beams are discontinued from running on the under side and carried to the top over the support. Hooked ends should be large and well done, turned to a good radius, when the rods are of fair size, but in the smaller sizes it is sufficient to bend them round squarely and sharply. Small rods have a greater proportionate surface than large rods; the adhesion is therefore greater per unit of sectional area, and small rods are, for that reason, preferable to large for securing adhesion, though there may be other advantages in large rods which lead to their general use. For example, we may compare the sectional area to surface area as follows:—

Size of Bar.	Perimeter.	Sectional Area.	Ratio Perimeter. / Area.
1″ round bar	3.141	.7854	4
½″ ditto	1.57	.1963	8

Prof. Bach's Experiments.

Some most valuable experiments were made by Prof. Bach at Stuttgart in 1905 to find the adhesion of concrete to steel. He employed square prisms measuring 8.7 ins. a side with heights of 4, 6, 8, 10 and 12 ins., composed of concrete mixed in the proportion of 4 parts Rhine sand and gravel mixed (the aggregate consisting of 3 parts sand measuring .2 ins. down in size and 2 parts pebbles varying in size from .2 to .6 in.), to 1 part of Heidelberg Portland cement. The experiments were made to ascertain the influence of the amount of water, quantity of sand, of jarring the specimen before the concrete had set, and the influence of time up to three months. It was found that the best working percentage of water was 12 per cent., at which the specimens made were satisfactory. Varying proportions of sand and gravel had little effect so long as the percentage of water was proportionately small when small amounts of sand were used. Resistance to sliding was increased by jarring the finished specimen before setting was completed. The sliding resistance was greater in tests conducted at high rates of speed than at slower ones where the loads acted for longer periods at each step of the loading. Also tests with rods pushed through the concrete were somewhat higher than those where pulled through.

By reason of wooden centering absorbing water, any excess of moisture would not be so deleterious in practice as in labo-



TELEGRAPH AND TELEPHONE BUILDING, GOTHENBURG: THE TELEPHONE ROOM.

ratory work. And as the forms get shaken we may take for practical consideration the highest values obtained in these tests. It was established by these tests that for stresses in the steel at less than the elastic limit the unit adhesion diminished with the length of rod embedded. This may be explained as follows: The tensile stress in a rod will decrease from the outside of the concrete to the innermost end of the rod because the stress is transmitted from its surface to the concrete by the adhesion. Now, because of the elasticity of the steel, the rod will stretch under the tensile pull, while the concrete on the other hand will be thrown into compression and will shorten. Consequently, even under small tensile stresses, because of these changes in length in opposite directions in the two materials a sliding effect will be produced along the rod near its outer end so that the tensile stress in the steel will not be uniformly distributed over the whole embedded length of the rod. The stress will first be taken up by the adhesion at the outer end and only after that is exceeded and a slight displacement takes place will the distant parts of the concrete be stretched. It follows from this unequal disribution of stress that the values for adhesion as observed in tests without making allowance therefore are too small, and the values would more properly be termed frictional resistance. The shorter the embedded rod the smaller the tension and elongation and the more nearly equally distributed will the effect be over the whole surface. When rods are pushed through, much the same conditions exist, but in a lesser degree, because the steel and concrete are loaded in a like way. Even then a slight sliding will occur very early along the outer portions of the rod. This slight sliding explains the influence which the rate of application of the loading has upon the resistance developed. It is easily seen that with a higher rate the sliding does not have time to develop and that the adhesive stress is then more uniformly distributed over the embedded area of the rod. Bach's tests went to show that making due allowance for these factors, the tone value for his concrete was about 540 lbs. per sq. in.

Calculating Length of Rod. The following is the formula for calculating the length of rod it is necessary to have embedded to prevent slipping.

Let t = tensile or comp. stress in steel per unit of area.
d = diameter of bar in ins.
f = friction or adhesion per unit of area.
l = length needed to be embedded.

The area of surface $= l \times \pi d$ or $l \times 4d$.

Then A section of rod $= d^2 \times \frac{\pi}{4}$ or d^2.

$$\therefore tA = l\pi d\, f \text{ or } l \times 4d\, f.$$

$$\therefore \frac{t\, d^2 \pi}{4} = l\pi d\, f \text{ and } f = \frac{td}{4l}.$$

$$\text{Again, } td^2 = l4d f \text{ and } f = \frac{td}{4l}.$$

TELEGRAPH AND TELEPHONE BUILDING, GOTHENBURG: DETAIL OF EXTERIOR OF TELEPHONE ROOM, SHOWING DORMERS.

CONCRETE WALL BUILT WITHOUT FORMS.

In extending the exercising grounds of the Alleghany County Workhouse at Clairmont, Pa., it was desired to use a type of construction for the new walls which would allow their erection by the prisoners. The walls are 23ft. high, and have an aggregate length of 710ft. In the scheme adopted, neither wood nor metal forms are required in building the wall, though simple forms are used for moulding the concrete slabs which act as forms, and at the same time become part of the permanent wall construction.

The slabs are 2ft. wide, and 4ft. long. They are cast on open wooden moulds laid on the ground. The sides and ends are readily removable, so that completed slabs can be taken from them with ease and the moulds used again. A small wire loop is placed on the forms, 6in. from each corner, so that its ends will project up into the concrete. Concrete made of one part Portland cement, three parts sand, and five parts gravel, is spread in the form 1½in. thick. On this layer is placed a 2ft. by 4ft. sheet of triangular mesh reinforcement, upon which a second layer of concrete is poured to make a slab 3in. thick. This top layer forms the exterior of the wall, and is made of sand and fine gravel so as to give a fairly smooth finish when struck level with a straight edge.

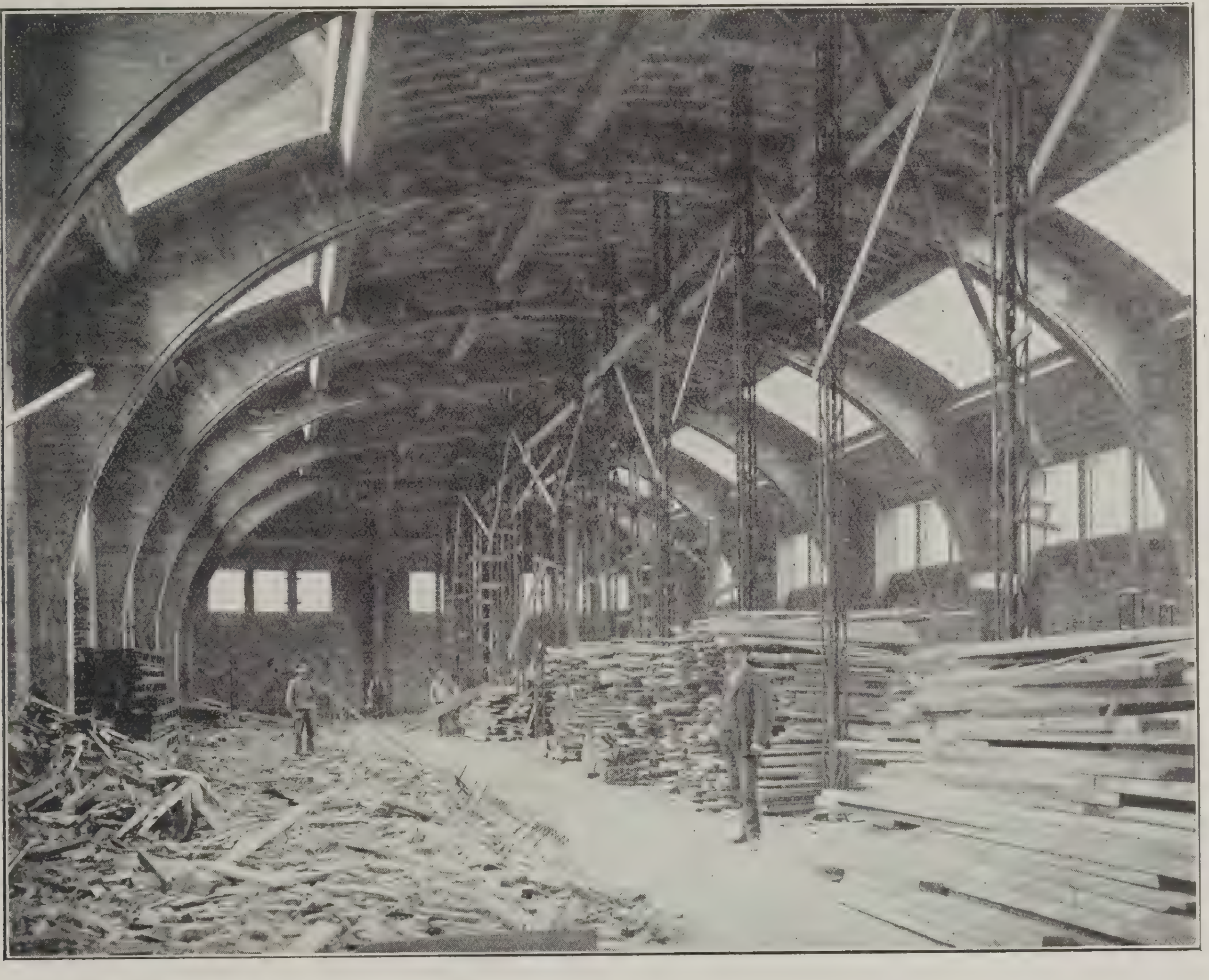
When the slabs have attained a sufficient hardness they are set in mortar on end with a clear width of 30in. between them, so that the wall is 36in. thick. They are fastened together by passing wire through the loops on the backs of the slabs, and wooden spacers are inserted to keep them the proper distance apart until the concrete is placed. The concrete filling is mixed with Universal Portland cement, the proportions used being 1 :3 :5.

In one case the wall retains a fill, and here its thickness was increased 7in. at every 2ft. step, until a maximum of 9ft. 5in. was attained at the bottom.

The cost of the wall per cu. yd. was between 1.90 dollars and 2.00 dollars, exclusive of labour and superintendence.

REINFORCED CONCRETE IN SWEDEN.

We illustrate in this issue the new telephone and telegraph building which has been erected at Gothenburg, in Sweden, on the Kahn system of reinforced concrete. We regret that we have not been able to obtain detailed particulars of the building in a form serviceable to English readers, but the accompanying photographs give a very good idea of the construction, while the section of the roof reproduced on the next page serves to explain some points which would not otherwise be understood. The roof, it will be seen, is double.



TELEGRAPH AND TELEPHONE BUILDING, GOTHENBURG, SWEDEN: GENERAL VIEW OF TELEPHONE ROOM.

THE COLLOIDAL THEORY OF THE ACTION OF CEMENT.

Instead of the usual theory that the hardening of cement is due to a crystalline growth which locks and interlocks the sand or aggregate, Dr. Michaelis, from his 40 years' experience of cement testing, conceives the hardening of cement to be due to the formation of a glue-like or gelatinous coating round each grain of a colloidal hydro-silicate of calcium, which he calls "hydrogel." This, by evaporation without absorption within, *i.e.*, giving up part of water to atmosphere and part to enclosed grain, coagulates, becoming finally a dense, opaque water and air-proof solid. The coagulation or hardening process—the set proper—begins when the water vanishes from the surface of the mixture, and it assumes a dull face. The action is just this: The grains first dissolve in water and disintegrate, the water associating with whatever loose or liberated lime there is. The solution thus becomes speedily alkaline, limy, and begins to attack the silica, alumina, and iron, forming insoluble colloidal hydro-silicates, aluminates, ferrates, and probably also simple hydrates of these substances.

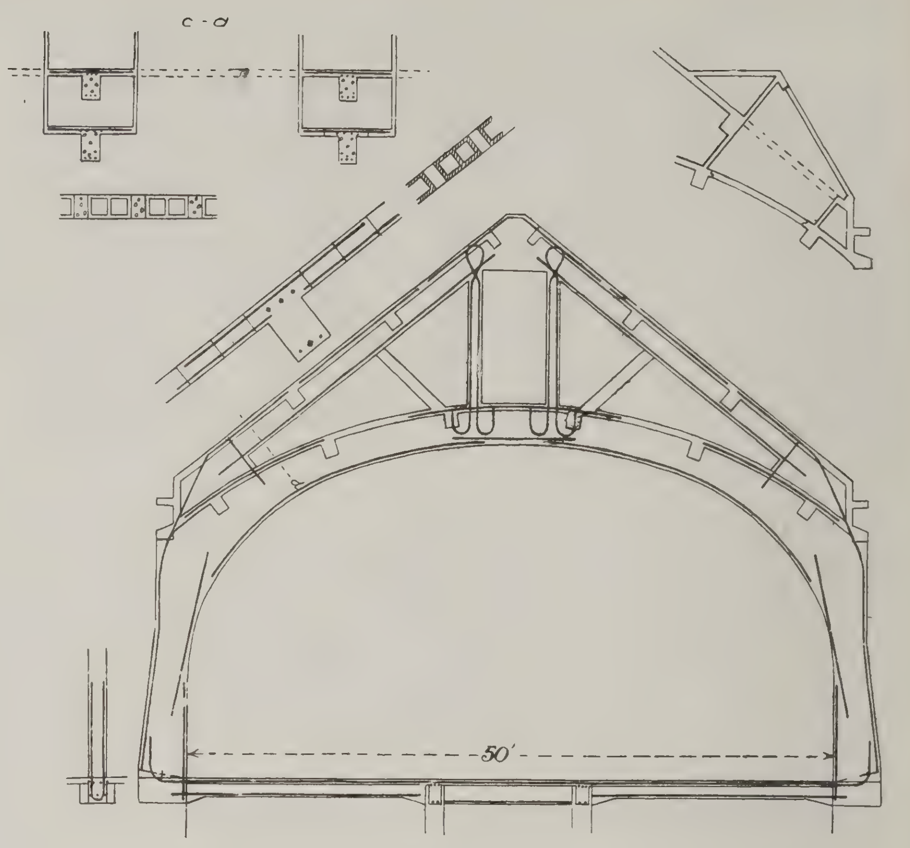
The process goes on for years, and accounts for the hardening when cement is reground. The cement grain contains free lime to surrender, because it is impossible by calcining to effect a perfect combination of all the lime, and, as a result, cement is always heavily overlimed. Clinker is really a solid solution of lime partly dissolved and partly enclosed in fused silicates or puzzolanic matter (which is fused calcium and silica). Water dissolves the lime, the lime water in turn dissolves the silica forming insoluble colloidal hydro silicate of calcium or hydrogel —which is at first only semi-impermeable to lime water, *i.e.*, allows water to penetrate, but retains the lime. Hence there is continuous absorption of lime from the interior of the cement grain and surrender of water to same, by which exchange hydrogel grows more opaque, solid and impervious, and the cement grain is hydrated.

The crystalline growth seen in microscopical examination of cement is due to the formation of hydrates of calcium, aluminium and iron, and, if gypsum (calcium sulphate) be present, calcium sulphoaluminate also. All these in solidifying from a lime solution take on a crystalline structure, having slender, needle-like crystals, soluble in water. Thus by themselves we see that such substances would not set under water, and would be dissolved out of it, were it not for the hydrogel.

This theory explains the blowing of cements by suggesting that the blowing is due to coarse particles disrupting the hydrogel envelope by absorbing water and expanding; hence it is not found with fine grinding.

If too much water is used, the colloidal formation is retarded, and the weaker crystalline structure results, for in an oversaturated solution hydrogel forms, whereas in only a slightly over-saturated solution large crystals slowly form. This is the explanation of overmuch water weakening the cement or concrete made therewith.

The theory is also suggestive in explaining the action of retarders. Gypsum and calcium chloride retard setting by quickly forming crystals, and counteract the formation of colloids. Sodium silicate, on the other hand, tending to colloidal condition, accelerates the set. Alkali-carbonates also by reacting with the lime to form lime carbonate, prevent the solution becoming over-saturated, and delay colloidal formation thereby, and dissolve the silica and alumina instead of precipitating them. We see, therefore, that retarders are dangerous by delaying and preventing the formation of that colloidal structure or hydrogel upon which the hardness and resistance of cement is ultimately dependent. Where the formation of hydrogel is prevented, the mass becomes pervious to water, and the structure is broken up by its solubility, and this shows us why retarders can do the mischief it is well known they do in salt water.

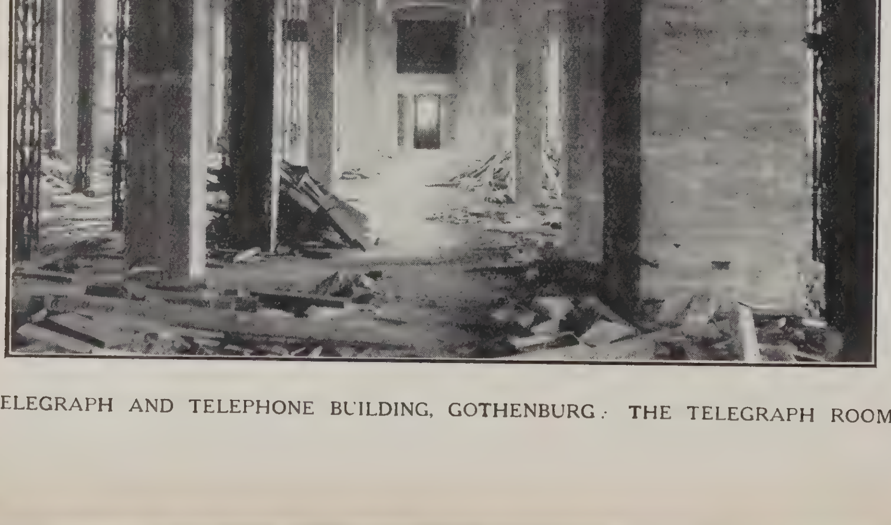


TELEGRAPH AND TELEPHONE BUILDING, GOTHENBURG: SECTION OF ROOF AND DETAILS.

REINFORCED CONCRETE AND CORROSION.

Referring to a statement of the alleged rusting of reinforcement in armoured concrete, a correspondent of the "Manchester Guardian" says there is no doubt that water does percolate to a certain extent into ordinary concrete, the penetration being determined by the nature of the matrix and the care which is exercised in proportioning the bulk of the matrix, the sand, and the cement so as to yield a void free mixture. Even where the percolation of water is not entirely prevented, he declares, it is doubtful whether rusting takes place on the surface of the iron or steel. If such reinforcement is kept as far from the surface of the concrete as rational design would suggest, it is questionable whether there is any better method of protecting iron from corrosion than by covering its surface with an adequate layer of cement. He points out that, as readers of this journal are very well aware, steel bars freed from old concrete are found to have the surface not only not rusted, but even to have portions of the surface originally oxidised made perfectly clean. The physical and chemical reasons for this protection of the iron are fairly obvious. Oxidation of the iron can only take place when oxygen is brought to its surface in the presence of moisture. Assuming, let us say ½in. of concrete, the opportunity for the diffusion of air through such a thickness of a material with very minute capillary passages is exceedingly restricted. Moreover, although there is some controversy as to the necessity for the presence of carbon dioxide before oxidisation can take place in the presence of iron, water, and air, there is no doubt whatever that this gas enormously accelerates the chemical action. Since cement undoubtedly takes up a small quantity of carbon dioxide, the selective filtering effect exercised by the moist cement in the long capillary passages will tend to prevent its penetration to the metal surface.

With regard to the question of supposed unequal expansion of steel and concrete, the writer (Mr. W. R. Ormandy) observes that a good deal of experimental work has been done with a view to determining the behaviour of steel and concrete under conditions which might be expected to lead to breakdown due to the varying behaviour of these substances. The evidence so obtained points to the fact that steel and concrete in the form of reinforced concrete have a temperature coefficient of expansion so nearly alike that for practical purposes they may be regarded as equal. The secret of success in reinforced concrete work, Mr. Ormandy says, granted efficient design, lies principally in the use of well-matured and fine cement, of concrete the mixing materials of which are so graded that the least possible voids are left, the use of a suitable matrix for the purpose required, and the exercise of the utmost care that the materials are thoroughly mixed with a correct amount of water and rammed into position before the preliminary set has taken place. As regards protection from the penetration of water, it seems to have been proved fairly conclusively that ordinary tar with a large percentage of creosote oil will not do. Any material containing oil acts deleteriously on concrete. On the other hand, it has been found that absolute protection has been gained by coating the exterior of the concrete with suitable bituminous paint employed in varying degrees of concentration, so that the first thin coat penetrates the concrete for a considerable distance and the thick coat which follows renders the surface completely resistant. Concrete tanks so treated have been employed to hold concentrated hydrochloric acid with entirely satisfactory results.



TELEGRAPH AND TELEPHONE BUILDING, GOTHENBURG: THE TELEGRAPH ROOM.

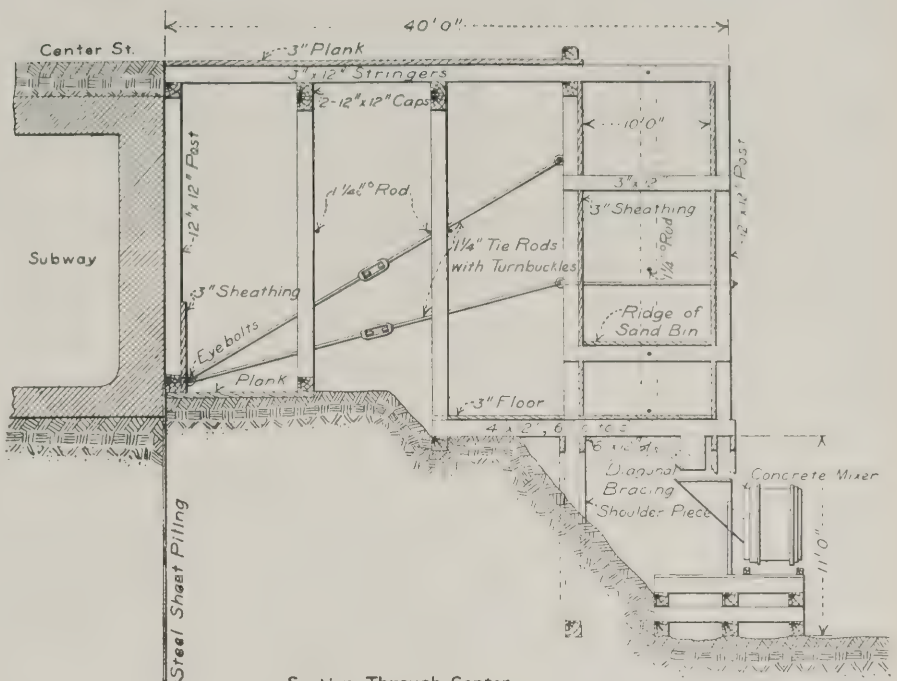
FOUNDATIONS FOR THE MUNICIPAL BUILDING, NEW YORK.

Foundation work costing about 1,500,000 dollars for the new 11,000,000 dollar municipal building, near the New York end of the Brooklyn Bridge, was commenced in August, 1909, and was finished in September, 1910, by the completion of the last of 106 pneumatic caissons, some of which were sunk to great depth. The 164 by 374ft. building will be 337ft. high to the top of the twenty-fifth storey, above which there will be a large tower extending 15 storeys higher, the whole having an estimated weight of about 165,000 tons, which imposes foundation loads of 15 tons per square foot on the rock and 6 tons on the sand footings at depths of 87 to 150 ft. below the curb.

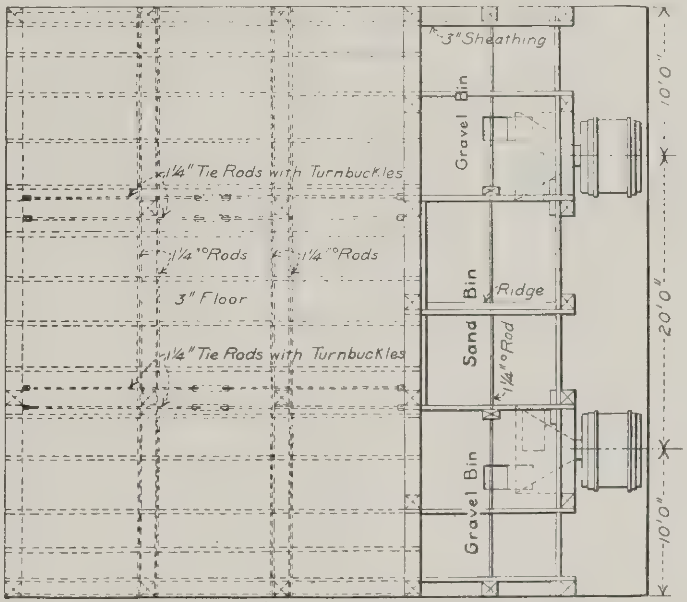
The soil consists of fine and coarse sand containing boulders and overlaying an irregular sloping rock surface at a maximum depth of 210ft. below the curb, and at an average depth of about 130ft. for two-thirds of the area of the building.

Explorations, says the "Engineering Record," were made by preliminary wash borings and by subsequent diamond drill borings, and were supplemented by special tests which showed very small settlements under loads up to 15 tons per square foot, and were considered to justify the increase of pressure from 4 tons to 6 tons per square foot on foundations where the underlying rock was too deep to be reached by the pneumatic caissons.

The general excavation of the lot was carried to the original ground water level, 32ft. below the curb, by pick and shovel work, and the spoil was removed in wagons, hauled up an incline at Duane Street. The sides of the excavation were retained by 3in. wooden sheeting and by corrugated steel sheet piles driven, as the excavation progressed, to a depth of about 4ft. below water level, braced with 12 by 12 in. rangers and inclined struts. Both the general excavation and the foundation operations were made more difficult and expensive by the danger involved to the adjacent double-track railroad structure on Park Row, by the necessity of maintaining heavy traffic on Chambers Street, which crosses the full width of the lot, by the proximity of the four-track subway in Centre Street, and by the presence of important sewers, water mains, and conduits, in service, which cross the lot below the surface of the street.

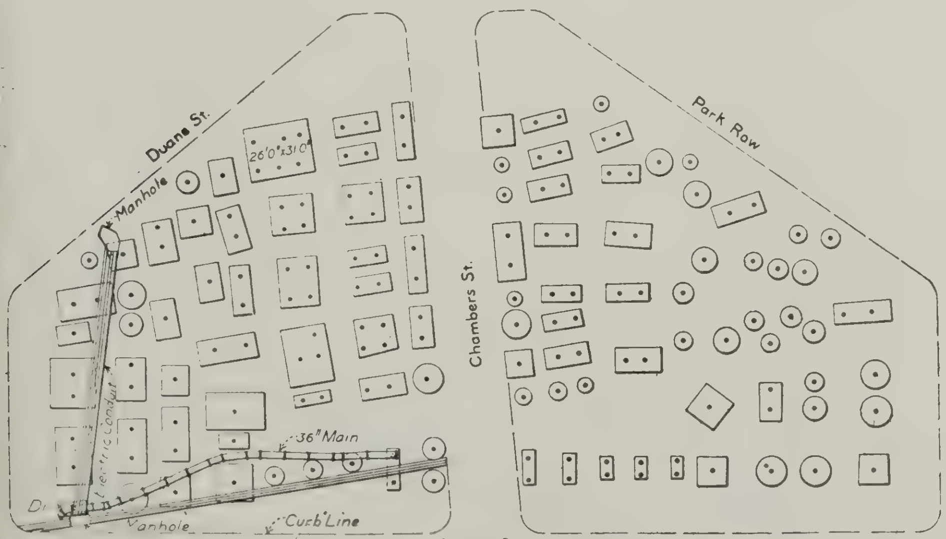


Section Through Center



Plan

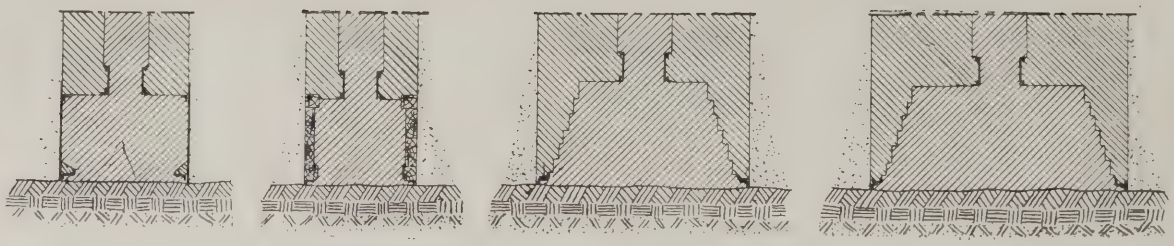
Concrete Mixing Plant.



Caisson Plan.

NEW YORK MUNICIPAL BUILDING.

Chambers Street was carried across the excavation on a temporary bridge with two lines of plate girders 4ft. deep and 25ft. apart on centres, supported by wooden trestle bents on concrete foundation piers built in sheeted pits before the general excavation was made. Twelve-inch I-beams 32ft. long were suspended from the girders, and carried a heavy wooden floor for the driveway between the girders and for two cantilever sidewalks partly supported on wooden extensions of the floorbeams. The cars on the single-track line in Chambers Street were carried across the bridge, and transverse beams were suspended from the floorbeams and thoroughly braced, to carry a number of large gas and water mains, the former under considerable pressure. The bridge trestles were supported on their piers by jack screws, and accurate level observations were taken daily to determine any settlement due to sinking caissons and excavating in the vicinity of the



Steel Working Chamber. Type A.
Wood Working Chamber. Type B.
Concrete Working Chamber. Type C.
Concrete Working Chamber. Type D.

TYPICAL CAISSONS.

piers. As fast as the smallest settlement was observed it was compensated by operating the screws, which in one case required over 3in. adjustment.

About 175ft. of 36in. water main under 50lb. pressure, 160ft. of 200lb. pressure fire-service water mains and about 150ft. of a 4 by 6 ft. concrete electric conduit, which serve a large section of the city, were located about 5ft. below the surface of the ground, as shown in the caisson plan. During the excavation and caisson work they were maintained in position supported on timber trestles, very carefully wedged and inspected to prevent any danger of interruption to their service.

About 280 lin. ft. of elevated railroad structure adjacent to the excavation was underpinned on concrete piers installed by the city to support the columns and girders. Adjustments to take up any settlement as fast as it occurred, and maintain the alignment of the track were installed by the railroad company.

About 450 lin. ft. of one wall of the subway was exposed by the excavation. It has a steel and concrete rectangular cross-section extending about 24ft. below the surface of the street. The sand under the subway structure was retained by steel sheet piling driven in the excavation flush with the subway wall, and notwithstanding the vibration from the frequent elevated railroad and subway trains, and the deep excavation adjacent to it, the maximum settlement of this structure did not exceed ⅜in.

Heavy falsework trestles braced together in pairs were erected in the excavation on both sides of Chambers Street to carry 24ft. gauge tracks at about street level for three rectangular tower travellers with four booms each. These travellers were supplemented by derricks shifted from place to place as required, providing altogether a total of 26 booms 40 to 60 ft. long, with capacities of 8 to 15 tons, which commanded the entire area of the lot and handled all machinery, plant, caissons, and materials.

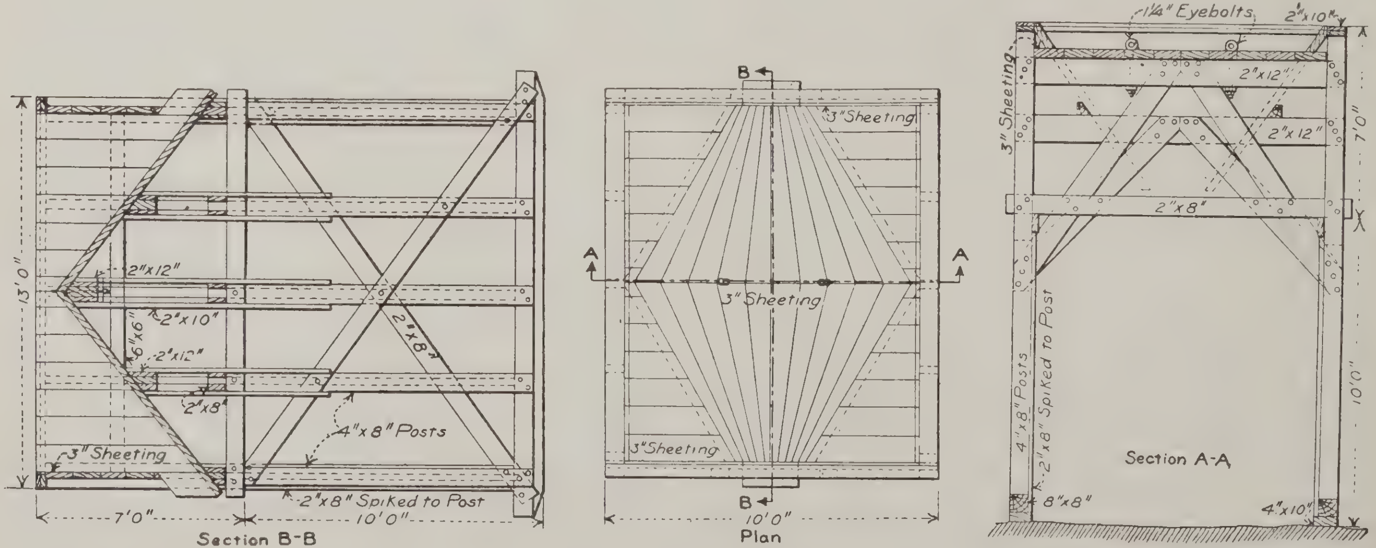
The caissons are of two classes, one in which the working chamber forms part of the pier concrete and one in which it is separate from the pier concrete. They are of four types, A, B, C, and D, all of which have permanently attached to them a 3ft. lower section of airshaft receiving the collapsible upper sections. Type A has steel working chamber from 6½ to 8½ ft. in diameter, and 6½ ft. high. The walls are made with ½ and 7/16in. plates shod with a 4½ by ⅜ or 6 by ⅜in Z-bar cutting edge. The ⅜in. slightly domed steel deck plate had flange connections to the airshaft, and was flange-bolted to the walls, and removed after the concrete above it had hardened. These caissons were used for eighteen of the smallest piers in order to secure the greatest economy of space and materials in the limited area of the working chamber.

Type B is a rectangular wooden caisson, 5½ to 7½ ft. wide, in walls made of solid horizontal courses of 12 by 12 and 8 by 12in. timber. It is provided with angle-iron cutting edges, and with a temporary deck of 2in. planks notched into the walls and removed after the first layer of concrete above had set and formed a permanent deck to carry the load of the wet concrete in the pier. This type of caisson has formerly been standard for all except the smallest sizes, and was here used for piers, varying from 5½ by 11 ft. to 7 by 22 ft.

Type C is a reinforced concrete caisson with a working chamber made integral with the body of the pier. The working chamber, 7ft. high, has the walls off-set by 12in. steps, shod, in some cases, with two angles, riveted together to form a Z-shaped section, and in other cases with a horizontal channel, having an angle riveted to the web at one edge. This type was used for twenty-two caissons, with diameters of 9ft. to 14ft. 2ins. The walls are reinforced by vertical and horizontal square bars, some of the former extending up above the deck of the working chamber. Type D is also of reinforced concrete without any permanent wood or structural steel, and is like type C except that it is rectangular instead of circular. It was used for fifty-six of the largest piers, with dimensions of 8 x 8 to 26 x 31 ft., the maximum being, it is said, the largest yet constructed for a building. Most of this type of caissons support two columns, but some of them have four and one has six columns, substituted for two smaller caissons that were at first intended to be sunk to rock. When additional borings showed the rock to be located too deep for pneumatic caisson work, the design was modified as above stated, and the area of the footings was enlarged to reduce the pressure to a satisfactory amount on the sand 72ft. below the curb.

Caissons of type A and B having a maximum weight of about ten tons, were delivered complete on wagons, and were set in the required positions on the bottom of the excavation by the derrick booms. Forms, in courses, 4ft. and 8ft. high, were built up on them to an average height of 30ft., except when obstructed by the Chambers Street bridge or other obstacles. Some of the larger ones were built up to a maximum height of 60ft. below sinking.

When necessary the verticality of the smaller caissons was maintained by wedged bearings against a greased horizontal yoke braced on all four sides by inclined shores, a precaution which prevented any divergence of more than a few inches from vertical. From 12 to 30 ins. of 1 : 2 : 3 Lebigh Portland cement concrete was placed on the deck on every caisson, and was reinforced with a single layer of 1in. square bars near the lower surface.



MOVABLE SPOIL HOPPER.

After the concrete had set 24 hours or more, so as to be capable of sustaining a heavy load of wet concrete above it, the steel or wooden deck was removed. The collapsible airshafts and air locks having been connected to the permanent bottom section of air-shafts, the space between the latter and the forms was filled solid with 1:2:4 concrete, made with 1in. stones and deposited in courses of convenient height, usually about 8ft., ordinarily laid every successive day or second day as was most convenient for the operation of the derricks and mixers.

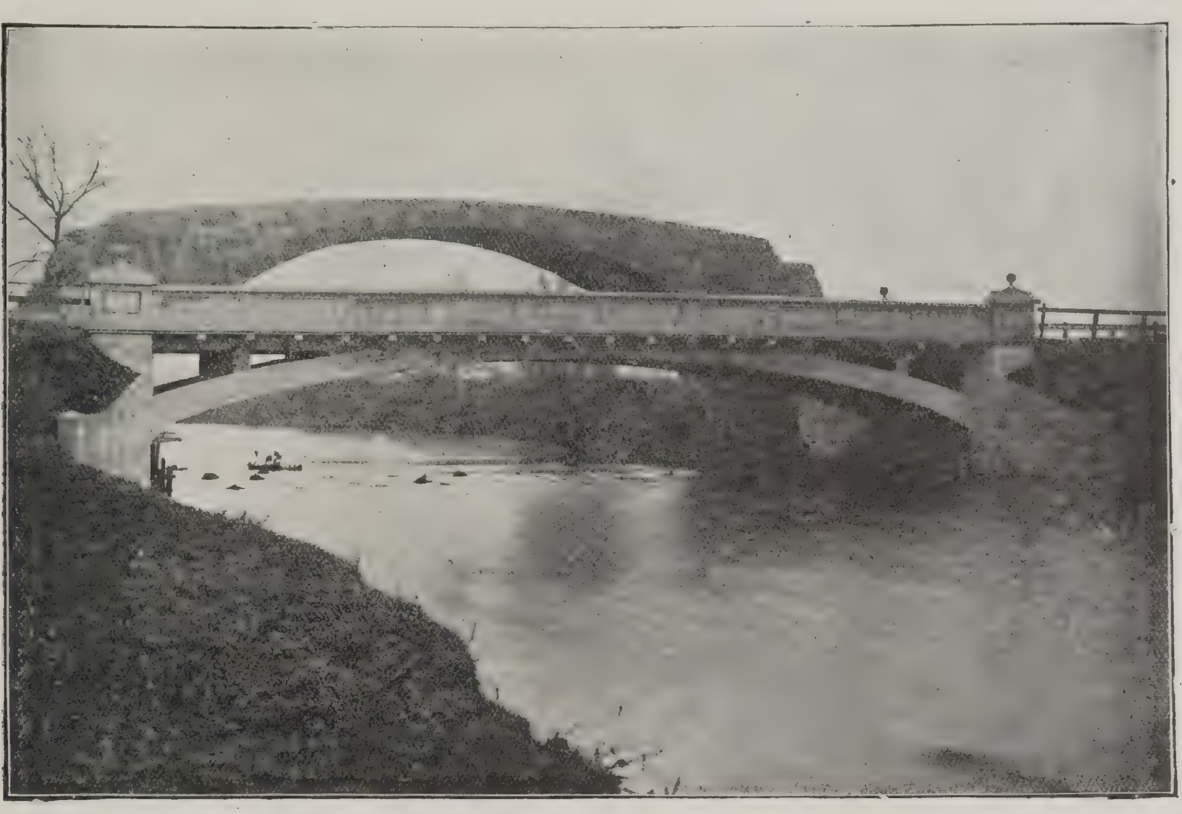
The forms for type A and B were made of ¼in. steel plates, bolted together through outside vertical and horizontal flange angles. All other forms were made with 2in. planed horizontal boards with exterior rangers and vertical studs, to which they were spiked, forming large panels, easily released by slacking the bolts. The circular piers were built with one or two courses of steel forms, which were merely slacked off and moved up as the concrete was deposited and set, while the rectangular pier forms were built up of semicircular steps and risers supported on notched radial vertical frames. The interior forms for type D were similar, except that they were rectangular with adjustable sections in the long sides.

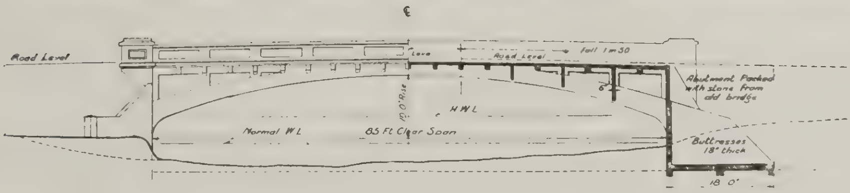
The design and execution of the work is under the direction of the Department of Bridges (City of New York), Mr. Kingsley L. Martin (commissioner), Mr. Alexander Johnson (chief engineer), Mr. F. W. Perry (engineer-in-charge). McKim, Mead, and White, were the architects, and the Foundation Company, of New York City, were the contractors for the substructure.

BRIDGE AT THORVERTON, DEVON.

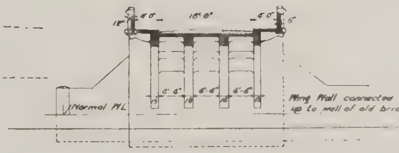
The reinforced concrete bridge at Thorverton here illustrated was built for the Devonshire County Council to the general designs and under the supervision of Mr. S. Ingram, surveyor for the Northern Division of the County. The new bridge has a much smaller rise than the old one, which it displaced, as will be seen in Fig. 1.

The bridge was designed for the heaviest vehicular traffic, and in addition to a roadway 16ft. wide, has two footpaths each 4ft. wide. The foundations of the new bridge are 9ft. below normal water level, above which a headway of 10ft. 6ins. is provided, this being 15ft. above the river bed. The foundations stand on

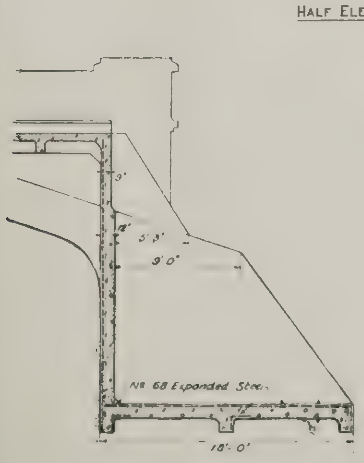


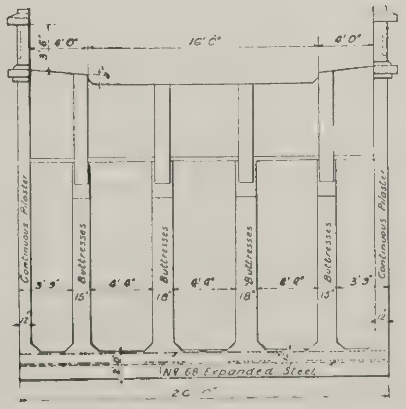


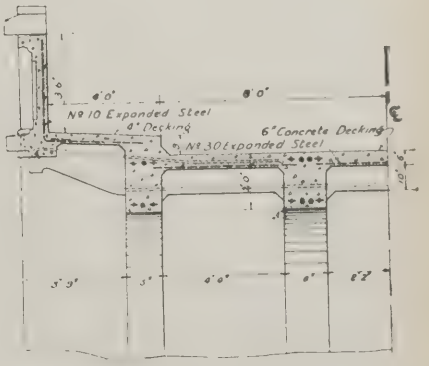
HALF ELEVATION HALF LONGITUDINAL SECTION



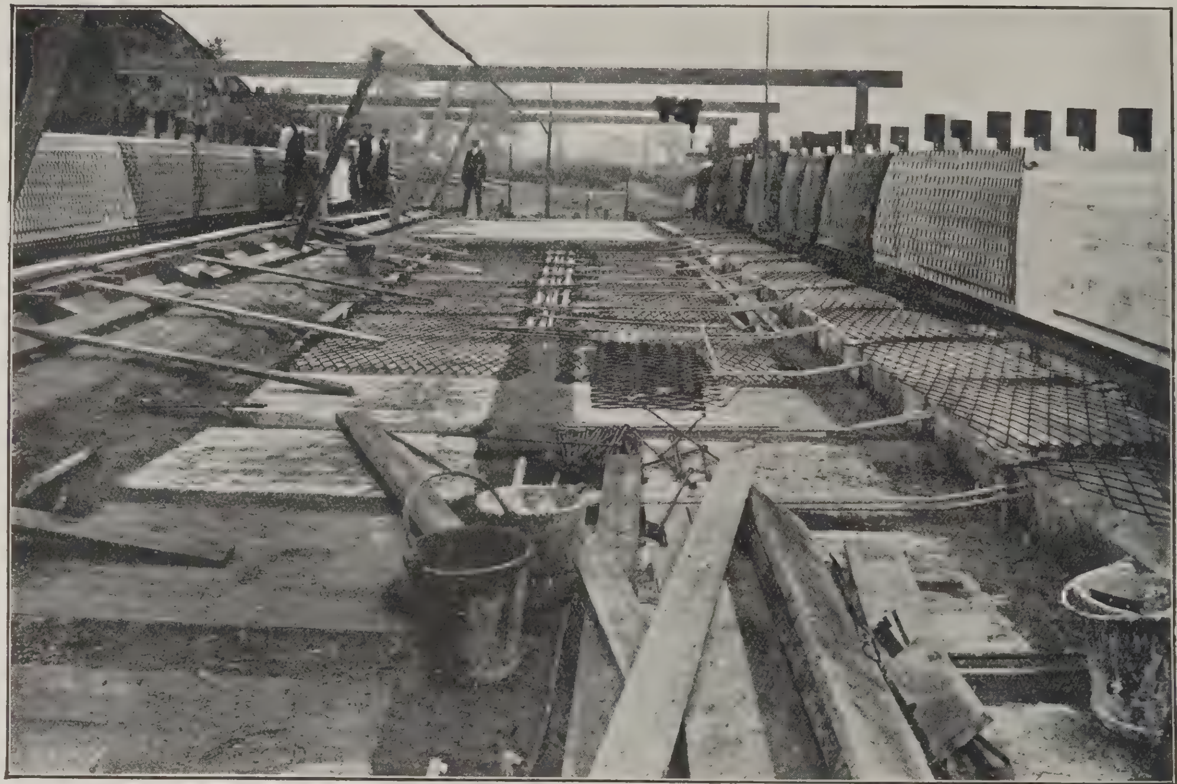
CROSS SECTION THRO CROWN OF ARCH







REINFORCED CONCRETE ARCH BRIDGE OVER THE RIVER EXE AT THORVERTON, DEVON.



REINFORCED CONCRETE ARCH BRIDGE AT THORVERTON: GENERAL VIEW OF WORK IN COURSE OF CONSTRUCTION.

a stratum of hard red marl of the Old Devonian red sandstone formation, the foundation platforms, abutments, and wing walls all being monolithic with the main arch.

The foundation platforms and abutments, it will be observed from the diagrams, are cellular in form, the main arch ribs, which support the crossbeams carrying the bridge decking, being carried through the face wall of the abutments and continued as buttresses to the main ribs, down to the foundation platforms, the pockets or cells thus formed being filled in with stone work from the old bridge. The parapet walls are carried on the cantilevers supporting the footpaths, the cantilevers being a continuation of the cross beams supported by the main arch ribs. The materials used were Teign Valley chippings, with "J. B. White" brand of Portland cement for the concrete, and mild steel in the form of expanded metal, plain round bars and "Trussed" bars for the reinforcement. The general contractor was Mr. Hubert Berry, of Crediton, while the Expanded Metal Co., Ltd., of York Mansion, York Street, Westminster, carried out the reinforced concrete work.

WHITEWASH FOR CONCRETE SURFACES.

Common whitewash has been used on concrete surfaces, particularly of residences and small buildings, in order to give a white rather than the grey cement tone. It is frequently lacking in durability, however, and the suggestion has therefore been made that better results where greater adhesion is desired may be obtained with the whitewash used by the American Government on its lighthouses. The following formulæ for whitewash and cement wash have been furnished by the U.S. Department of Commerce and Labour. The formula for whitewash, the Department states, has been found by experience to answer on wood, brick, and stone, nearly as well as oil paint, and is much cheaper:—

Slake half a bushel of unslaked lime with boiling water, keeping it covered during the process. Strain it and add a peck of salt, dissolved in warm water; three pounds of ground rice put in boiling water, and boiled to a thin paste; half a pound of powdered Spanish whiting, and a pound of clear glue, dissolved in warm water; mix these well together and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used put it on as hot as possible with painters' or whitewash brushes.

Cement wash for the outside of lighthouse towers. Take of fresh cement 3 parts, clear sand 1 part, and mix them thoroughly with fresh water. This will give a grey or granite colour, dark or light, according to the colour of the cement. If a brick colour is desired, add enough Venetian red to mixture to produce that colour. The cement, sand, and colouring matter must be mixed together. If white is desired, the walls, when new, should receive two coats of cement wash and then whitewash. After the work has received the first coat, a single coat every three or four years will be sufficient. It is best to dampen thoroughly the wall with clean, fresh water, and follow immediately after with the cement wash. This course will prevent the bricks from absorbing the water from the wash too quickly, and will give time for the cement to set. Care must be taken to keep all the ingredients of the cement wash well stirred during the application of it. The mixture must be made as thick as it will admit of to be conveniently put on with a whitewash brush.

BONDING SUCCESSIVE LAYERS OF CONCRETE.

Satisfactory joints between successive layers of concrete have been obtained by the following treatment: The approximately horizontal surface of the concrete which is to be bonded to a subsequent layer is allowed to stand until any water which may have flushed to the top disappears. Then, while the mass is still moist, the surface is covered with about ½in. of a 1 : 1 dry mixture of cement and sand, and protected if necessary with tarpaulins or boards. The moisture still remaining in the concrete suffices to produce a partial set in the dry mixture immediately adjacent to the surface of the concrete and above that to affect the mixture in a diminishing degree, the upper part of the mixture being unchanged. When it is convenient to apply the next layer of concrete the moisture in it completes the set through all the unhardened dry mixture, interlocking the two courses, as it were. The joint between the two layers of concrete, although visible, is stated to make a much stronger bond than is usually secured.

A number of briquettes have been made of cement mortar cast in two parts, and connected by a joint formed in this manner, and when tested developed a strength of more than 50 per cent. of the normal briquette of the same mixture made in a single piece.

This form of bond between successive layers of concrete was devised, and has been extensively used in Canada, in the construction of a reinforced concrete elevator, a reinforced concrete conduit 10½ft. in diameter, and 8,000ft. long, working under 33ft. head, and for other works.

SPECIFICATION FOR REINFORCED CONCRETE CONSTRUCTION.

Mr. Ernest McCullough, in an address at the Armour Institute of Technology, Chicago, recommended the following specification to architects when sending out plans for competitive designing of reinforced concrete construction :

The ratio of deformation between steel and concrete shall be 15. The steel fibre stress shall in no case exceed one-third the elastic limit of the steel, and a maximum fibre stress shall be 20,000lb. per square inch, even if this limit is less than one-third the elastic limit.

Concrete in beams and slabs shall be stressed in the most remote fibre from the neutral axis not to exceed the following : Best broken stone or washed gravel concrete mixed with one part Portland cement, two parts clean coarse sand, four parts clean broken stone or washed gravel, not to exceed 750lb. per square inch. Such concrete tested in 12in. cubes at the end of 28 days must show a strength of not less than 2,500lb. per square inch. Concrete made of ready mixed bank gravel or of a 1 : 3 : 5 broken stone or gravel, and testing not less than 2,000lb. in 12-in. cubes at the end of 28 days can be used with a fibre stress of not to exceed 600lb. per square inch. Cinder concrete made of one to seven mixture of clean washed screened cinders can be designed with a fibre stress not exceeding 250lb. with a ratio of deformation between the steel and concrete of 30. Concrete in columns reinforced with longitudinal rods or bars shall be stressed not to exceed 500lb. per square inch. Columns reinforced with wire or fabric having the same hooping effect as wire may be designed so the concrete may be stressed in compression not to exceed 1,000lb. per square inch. No column reinforced only with longitudinal rods or bars can contain more than 3 per cent. of reinforcement. There shall not be more than 5 per cent. of longitudinal reinforcement in wound or hooped columns, and the wrapping or hooping shall never be less in amount than the longitudinal reinforcement. Columns reinforced with longitudinal bars or rods must have the same tied together at intervals not greater than their distance apart, with wire not smaller than a 10 gauge. No deformed or twisted steel can be used in columns. No columns can be made of cinder concrete. No broken brick or burnt clay will be permitted in reinforced concrete work unless it is used under the specifications for cinder concrete.

For one span slabs shall have a bending moment figured as $wl^2/8$; for two and three spans $wl^2/10$ and for more than three spans $wl^2/12$. Beams and girders shall never be figured other than as freely supported with $M=wl^2/8$. Panels perfectly square may be considered as having $M=wl20$, but panels having one side longer than the other, and where the proportion of width to length is less than 1.5, may be calculated as follows : Let r = proportion of load carried by the sides ; L = length of panel ; B = breadth of panel. Then $r=L^4/(L^4+B^4)$

Having found the proportion of load to go each way use $wl^2/12$ to obtain bending moment. In all cases where the moment is figured for other than freely supported spans there must be adequate reinforcement provided for reverse bending moments at supports. All beams and girders must be reinforced over supports for negative bending moments. Proper reinforcement for internal and web stresses must be provided in all cases where such stresses may exist.

Safe superimposed loads shall be as per the schedule hereto attached. All the live load and dead load on the roof must be carried to the columns. For the first floor below the roof the dead load must all go to the columns, but the live load may be reduced 5 per cent. The live load on each succeeding lower story may be reduced an additional 5 per cent. until a floor shall be reached where the proportion of live load carried to the columns is 50 per cent., after which only 50 per cent. of the live load on the floors below shall be considered as going to the columns.

Beams shall carry the full dead and live load, but girders may be designed to carry all the dead load plus 85 per cent. of the live load except in storage warehouses.

Thirty days after the forms are removed the superintendent may have the floors, or any portion of them, tested with a load that shall be equal to twice the live load plus the dead load, and after said load has been in place 24 hours the deflection shall not exceed 1-900 of the span.

CONCRETE BULKHEAD WITH PILE FOUNDATION.

A bulkhead wall about 1,100ft. long is being constructed for the Department of Docks, New York City. The foundation consists of piles 40ft. to 60ft. long in seven-pile bents 4ft. apart. Before the piles were driven an area of 25ft. behind the front face of the finished wall was dredged to a depth of 18ft. The pile caps carry a deck of 4in. by 10in. longitudinal planks supporting a concrete wall 6ft. 7½ins. wide at the base, 3ft. 6ins. wide at the top, and 7ft. 10ins. high, with batters of 7½in. and 30ins. respectively on the front and rear faces. The wall is designed to resist the thrust of an embankment on the shore side. The construction was somewhat unusual on account of the omission of the spur of bracing piles, which were considered unnecessary on account of the width of the base, the very firm soil in which the piles were driven, and the general stability. The wall will contain about 100,000ft. of piles, and 1,850 cubic yards of 1 : 3 : 5 Portland cement concrete. The excavation was done with a dipper dredge, and the piles were driven by floating machines with a 3,000lb. drop hammer in leads 60ft. high. The piles penetrate hard clay and sand for about 35ft., and required an average of 100 to 125 blows. The work was performed at the average rate of ten piles in eight hours. The pile tops were cut off 1ft. above low water-level, and on them was laid a timber grillage forming a permanent bottom for the concrete forms, which were built in sections 16ft. long. A layer of 3ins. of 1 : 2 mortar was placed on the front face to resist the action of frost and sea water, and to make a smooth finish. The concrete plant was installed on a wooden barge, and the mixer was located at an elevation, and discharged the concrete directly through an inclined chute into the forms. All handling was thus eliminated, and it was possible to proceed with the work rapidly, the speed being limited only by the ability of the men in the forms to receive the concrete.

TRADE AND CRAFT.

Concrete Paving and Construction.

Although the firm of Hubert Todd and Co., specialists in concrete pavings and construction, 53, Victoria Street, Westminster is still in its first year, it has already completed a number of contracts of considerable importance. The whole of the floors of the Standard Motor Works Extension at Coventry (Messrs. Brown and Barrow architects) were paved with their granite concrete, as were the floors of the new Humber repair shops at Kilburn (Mr. J. A. J. Keynes, architect); and they have nearly completed the floors at the British Motor Cab Company's Garages, Pimlico (Messrs. Clayton and Black. architects). These three contracts embrace about 15,000 yards of pavings. They have also paved the boxes and stalled stables of the large new hunting establishment at Pitsford Hall, Northants (Messrs. Dunn and Watson, architects); while for the Right Hon. Lord Sherborne they have paved the large stable court at Sherborne House (1,500 yards), and are still engaged on about 2,000 yards of similar pavings in new model farm buildings at Upper Slaughter, Glos., for Captain Brassey, on Lord Sherborne's estate ; and they have recently obtained the order for paving two stables at the Royal Mews, Buckingham Palace, for H.M. Office of Works. In reinforced concrete they have constructed a flat roof at Fulham, to be used for the storage of vans and carts, which are hoisted thereto by a lift (Mr. J. F. Wetherell, architect), and also a mill floor at Leek, Staffs ; and they are now engaged on reinforced concrete in situ stairs in London, Southampton, and Tunbridge Wells. The firm also make a speciality of dealing with damp cellar walls, and they have just completed their treatment of the walls, floors, and arched roofs of three vaults under a footway in the West End, which were formerly very damp, but which are now to be converted into handsomely decorated showrooms. Mr. Hubert Todd was connected with the firm of W. B. Wilkinson and Co., Ltd., of Newcastle-on-Tyne, and London, for 25 years, during the last 12 months of which he was their London manager, and his experience with regard to all kinds of concrete work is therefore a very wide one.

NEWS IN BRIEF.

New Theatre at Windsor.

The new Theatre Royal, Windsor, is now completed, and will be opened on December 13th. Mr. Frank T. Verity, F.R.I.B.A., is the architect.

* * *

A Fresh Translation of Vasari.

Next autumn the Medici Society hopes to issue the first two of ten volumes of a new edition of Vasari's "Lives," translated by Mr. Robert W. Carden, A.R.I.B.A., under the editorship of Mr. Edward Hutton and Mr. F. M. Perkins. The edition for England will be limited to 1,000 copies, price £21 net per set.

* * *

London Survey Committee.

A general meeting of the Committee for the Survey of the Memorials of Greater London had been arranged for Monday in last week at Crosby Hall, Cheyne Walk, Chelsea, when the chair was to have been taken by Lord Curzon. Owing, however, to Lord Curzon being obliged to attend elsewhere on that day, the meeting has been postponed.

Proposed New Town Hall for Marylebone.

Marylebone Borough Council have had under consideration a fresh proposal to acquire from Lord Portman a site (35,600 square feet) in the Marylebone Road for the purpose of erecting a new Town Hall. The cost of the site is £39,200. The committee in charge of the matter have recommended the Council to seal the draft agreement with Lord Portman.

* * *

Birmingham Art Gallery Extension.

Important recommendations for the extension of the Birmingham Art Gallery by the addition of three picture galleries, and the provision of a museum of casts are made in a report by the Museum and School of Art Committee for presentation at the next meeting of the Birmingham City Council. The committee quote a report by Messrs. H. V. Ashley and Winton Newman, architects, who have submitted sketch plans showing how the vacant portion of the site of the Council House extension could be utilised by adding further galleries and rooms to those now being built. They estimate the cost of this further extension from the first floor upwards at approximately £20,000.

* * *

A Quick Building Feat.

It is less than a year since the disastrous fire occurred at the shop premises of Messrs. Arding and Hobbs, at Clapham Junction, yet the new building erected on the site from designs by Messrs. Gibson, Skipworth and Gordon, has just been opened. Mr. James Carmichael was the builder. The structure is thoroughly up-to-date in every particular, reinforced concrete, on the Kahn system, having been extensively adopted throughout. The interior is decorated in Adam style.

* * *

Turkish Baths.

The Savoy Turkish Baths are now open day and night, Sundays and holidays included. These baths (under the management of Mr. William Cooper) are already established at Brixton, King's Cross, London Bridge, Elephant and Castle, Camden Town, and Savoy Street, Strand, and others will shortly be opened at Kensington High Street, Clapham Junction, Kilburn, Dalston, Finsbury Park, etc. This should prove a boon to persons arriving at all times during the night, either by boat or train.

* * *

Books on Architecture, the Allied Arts, and Building Construction.

Mr. B. T. Batsford, of 94, High Holborn, W.C., has just issued a new catalogue of books relating to architecture, the fine and decorative arts, building construction, sanitation, etc. Among new books announced are the following :—"Old Cottages and Farmhouses in East Anglia," by Horace Dan and Basil Oliver; "English Ironwork of the Seventeenth and Eighteenth Centuries," by J. Starkie Gardner; "The English Fireplace," by L. A. Shuffrev and W. Galsworthy Davie; "The Colleges of Oxford," by Aymer Vallance; "English Staircases," by Walter H. Godfrey; "The Development of Building Estates," by Tom Bright; "Civic Art," by Thomas H. Mawson; "Modern Architectural Construction and Design," by Herbert Y. Margary. The third and final part of "The Domestic Architecture of England during the Tudor Period" will be issued early in 1911, and a new and revised edition of Millar's "Plastering—Plain and Decorative," is in hand, but will not be published for some time.

YORKSHIRE FEDERATION.

The monthly meeting of the Executive Council was held at the Talbot Hotel, Kirkgate, Bradford, Nov. 17th. Coun. W. G. England, J.P. (President), occupied the chair, and fifty-two delegates were present from the affiliated associations.

The President reported that the Finance and Emergency Committee had received special quotations for personal accident insurance from the Federated Employers' Insurance Association, Ltd., and recommended the proposals to the careful and favourable consideration of the members. It was decided to issue a circular setting forth the proposals, in order that members might have the full particulars before them.

Sundry accounts having been passed, it was resolved to invest the sum of £150 in Huddersfield Corporation Stock in the names of the existing trustees.

The President reported that the tender for the work on which correspondence had taken place with the West Riding County Council as to the rate of wages payable had been re-let to a member of the Federation.

Attention was drawn to the fact that the contract of the West Riding County Council provides that "all provisional sums and Prime Cost items (and, where the Committee have exercised the option of direct employment, of sums which may have been added for profit, carriage, fixing, etc.), will be deducted from the account of contract in all cases, and the Committee will pay the same direct." On the motion of Mr. P. Rhodes, seconded by Coun. J. W. Sugden, the Emergency Committee were requested to arrange for a deputation to interview the County Council with respect to the above matter, and also other grievances with respect to the form of contract used in connection with County Council works.

A further resolution was unanimously passed strongly recommending members to object to sign, or in the alternative that they strike out, the before-mentioned paragraph as to provisional sums and prime cost items, included in the West Riding County Council Form of Contract; under which the County Council claim to have power to deduct builders' profits on prime cost sums.

It was reported that H.M. Office of Works were causing careful investigation to be made into the representations made by the Federation with respect to enquiries being made by a Clerk of Works with a view to obtaining information as to the name of the contractor who had supplied information. A very satisfactory and cordial letter had been received from H.M. Office of Works, and the Committee were confident that they were anxious to have the matter thoroughly investigated and properly cleared up.

A letter was read from the Secretary of the Chancellor of the Exchequer relative to the effect of the Finance (1909-10) Act, 1910, in regard to the work of conveying land direct from the landowners to the purchaser of a house erected thereon, without any intermediate conveyance to the builder; and the secretary was desired by the Chancellor of the Exchequer to inform the Federation that the suggestion that this practice will not now receive legal sanction is without foundation. If members met with any difficulty in regard to this matter, it was suggested that a copy of the minute should be submitted or, if necessary, the secretary of the Federation will be pleased to produce the original letter.

It was reported that a supply of the shorthand writers' report of proceedings of the recent Conference of Representatives of the National Federation with the Chancellor of the Exchequer had been printed, and that members who are interested in land will be able to obtain a copy on application to their local secretary.

Attention was drawn to the recent injunction against the Leicester Corporation, restraining them from exercising wiring powers without express authority of Parliament. It was pointed out that these powers are usually obtained and exercised by electricity companies, but in the case of local authorities they can at present only be obtained under authority of an Act of Parliament.

It was suggested that it would be in the mutual interests of local authorities and electrical engineers if a compromise could be effected on the general position. If local authorities would give an undertaking, when applying for powers, that the actual work would be carried out by electrical contractors this would promote and safeguard both interests. The present position whereby the cost of wiring in most cases has to be found by the owner has been prejudicial to electrical development, and a solution somewhat on the lines suggested would certainly be in the interests of electrical contractors as well as of local authorities. It was resolved, on the motion of Mr. J. Dawson, seconded by Mr. R. Finch, to refer the question to the Administrative Committee of the National Federation, and that they be requested to take steps to safeguard members, and also enlist the sympathy and co-operation of the Employers' Parliamentary Council.

The minutes of the Northern Centre meeting held on the 31st October were read and considered.

Mr. Sinclair reported that a deputation of the National Federation had been favoured with an interview with the Council of the Society of Municipal Engineers, and he had since heard that the Council agreed to the principle of the insertion of an arbitration clause, and would recommend its acceptance and use to all their members.

The Federation gave careful consideration to the resolution passed at the Northern Centre meeting with regard to the re-allocation of the subscriptions to the National Federation from the three Federations forming the Northern Centre. On the motion of Mr. Ledgard, seconded by Mr. A. W. Sinclair, the Emergency Committee were requested to take this matter into careful consideration, and bring up a recommendation to the Council in due course."

It was reported that 100 copies of the proceedings of the recent Conference of Secretaries had been ordered, and that a copy would be forwarded to each Local Secretary and Representative at the earliest possible date.

It was reported that the next meeting of the National Administrative Committee will be held in London on Tuesday, December 13th, and that the annual general meeting of the National Federation will be held at the Trocadero Restaurant, London, on Wednesday, January 25th, 1911.

The recommendation of the Emergency Committee with respect to officers for ensuing year were considered, and the following nominations approved for submission at the annual meeting: President, Mr. A. J. Forsdike, Sheffield; Senior Vice-President, Mr. J. Townsley, Hull; Junior Vice-President, Coun. J. W. Mallinson, Huddersfield; Treasurer, Mr. W. T. Ledgard, Leeds; Administrative Committee, President, Sheffield. Nominations were also made for appointment of Committees and Representatives for the ensuing year.

A discussion took place as to whether it was advisable to hold the annual dinners of the Federation during the month of January, when members are usually much pressed with business or social engagements, or during the month of February. On the motion of Mr. A. J. Forsdike, seconded by Mr. J. Dawson, it was resolved that the annual dinner should, under ordinary circumstances, be held during the month of February in each year. The arrangements for the annual dinner were referred to the officers of the Federation with power to add to their number.

Mr. W. H. Dews invited the Federation to hold the annual meeting in Leeds, and it was resolved to accept the invitation, and to hold the meeting on Thursday, December 15th.

After tea, facilities were afforded to members of inspecting the extensions to the Bradford Town Hall.—J. DAVIDSON, Sec.

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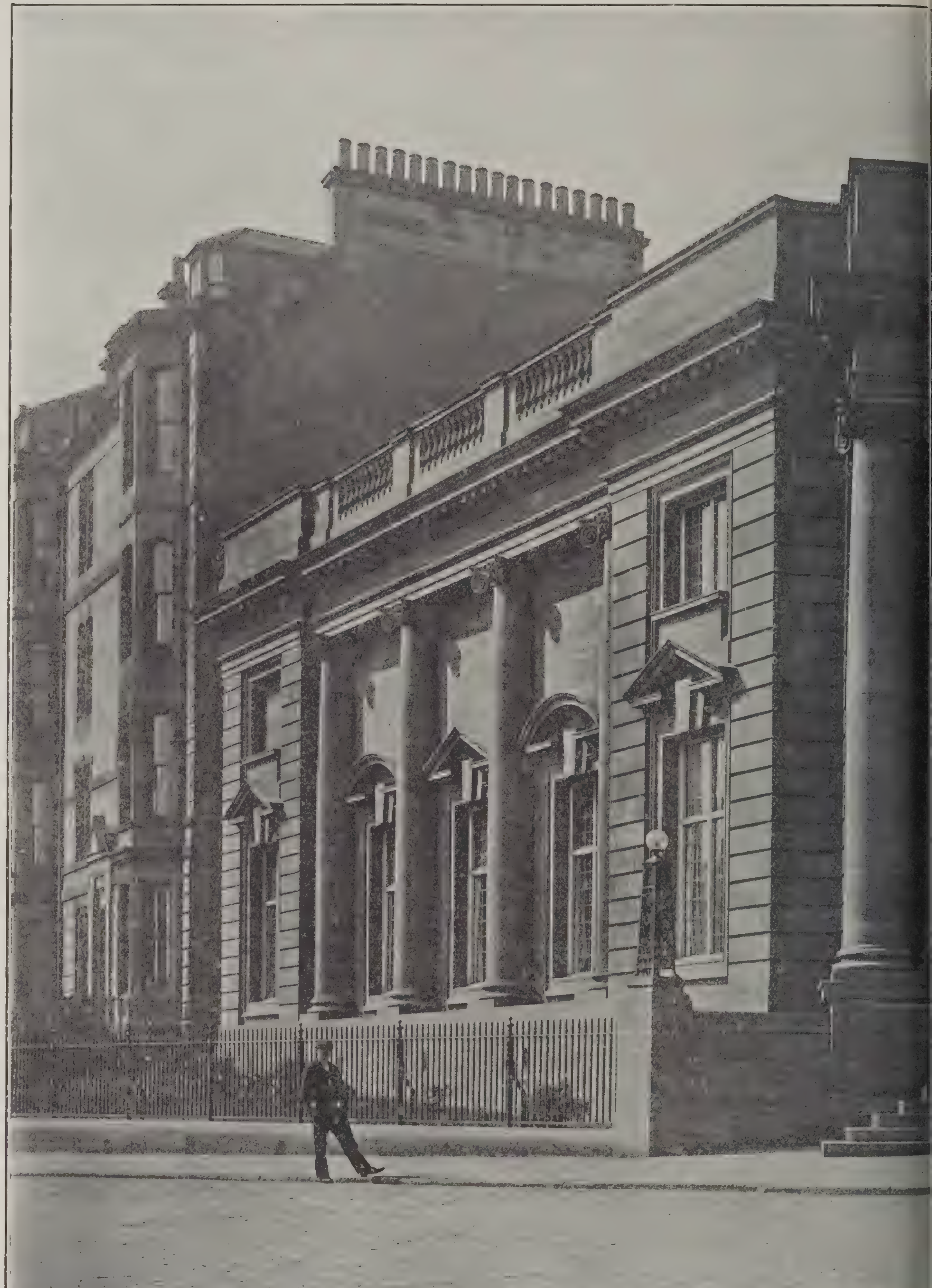

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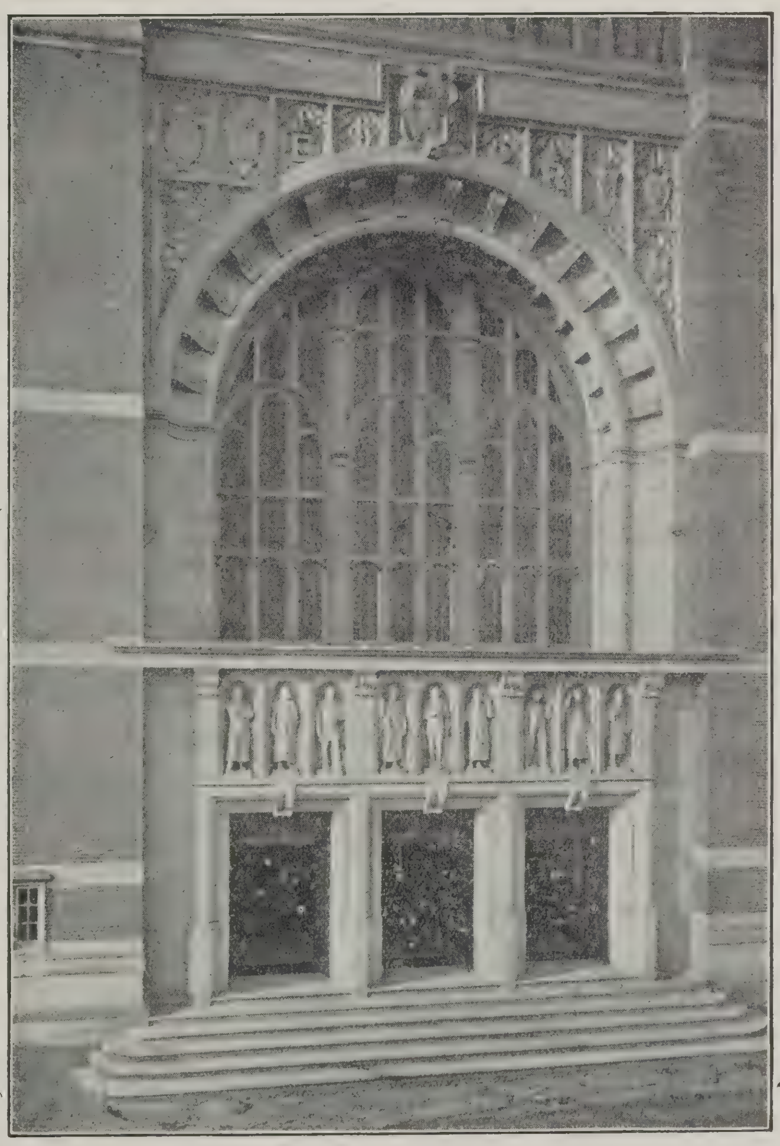
THE ARCHITECTS' & BUILDERS' JOURNAL

WEDNESDAY, DECEMBER 14th, 1910.

Volume XXXII. No. 828.



The new buildings of Birmingham University are at Bournbrook. The stone figures over the main entrance doorways, shown above, are by Mr. H. Pegram, A.R.A. The stone carving is by Mr. W. S. Frith.

BIRMINGHAM UNIVERSITY: MAIN ENTRANCE. SIR ASTON WEBB, C.B., R.A., AND E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

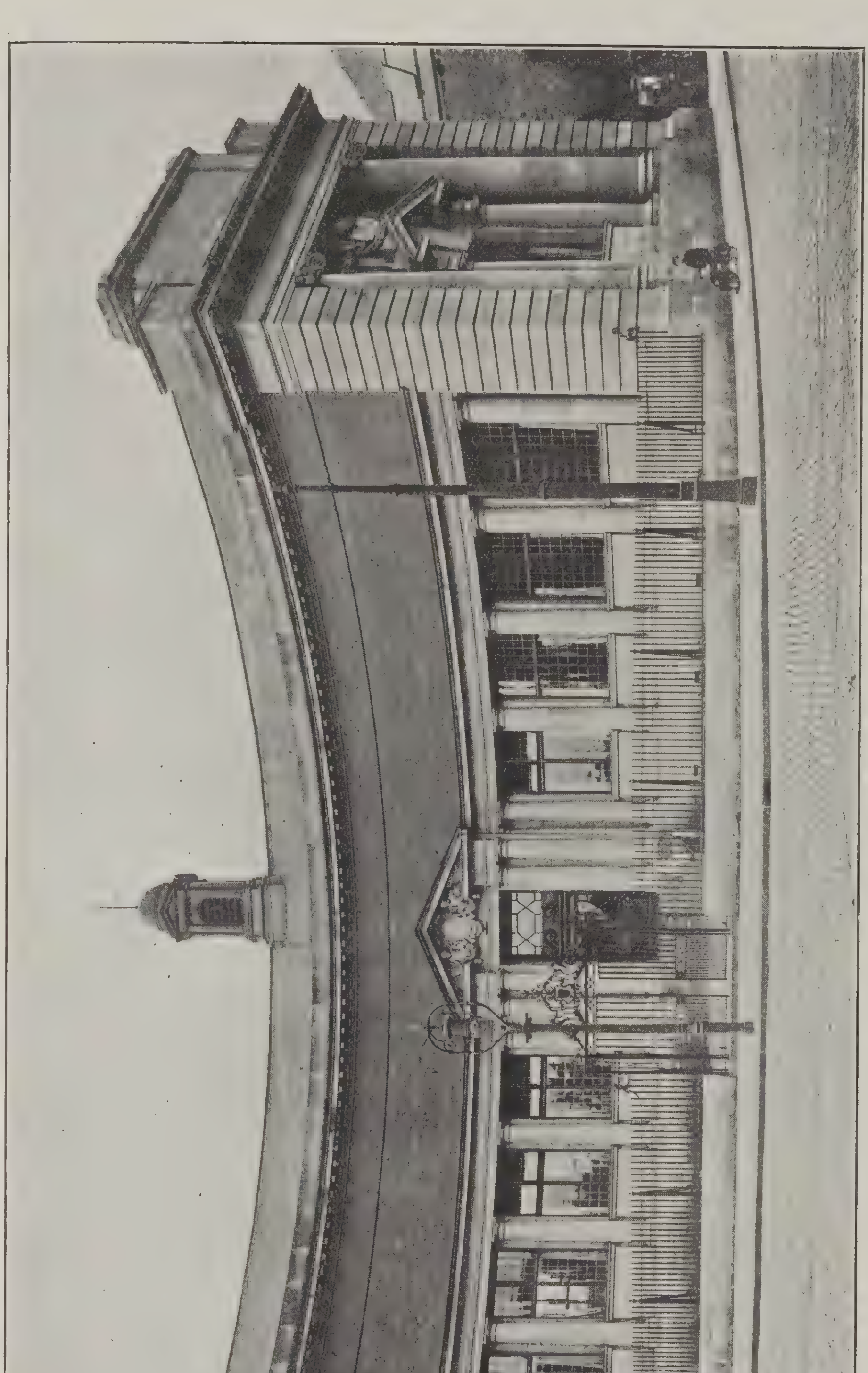


Photo: Thomas Lewis.

This library is one of a series given to Dundee by Dr. Carnegie. Some particulars and a block plan will be found on page 613 of this issue.

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THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 14th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 828.

Note: The List of Contents will be found on Page IV. of the front advertisements.

Architecture in the Making.

THE realisation of any architectural design in a form likely to be durable depends upon a number of processes of construction, which tend to become more delicate and complicated as time goes on, and the demands of civilisation become more exacting. There are a number of practical works on various branches of construction now in existence, specialist works, many of them, which are practical text-books for a considerable period, though the best of them, after a time, are liable to become out of date, as fresh knowledge and experience are attained. Almost all such books, however, have this in common, that they keep rigidly to the practical side of materials and construction, and take no account of architecture as an art, any more than the manufacturer of a piano takes account of music as an art. The latest publication on building construction, of which the first volume was recently issued,* adopts a rather new position. According to the Prefatory Note by the Editor (whose name does not appear), the aim of this book is, while treating the subject in a practical manner, to give to it also architectural expression. "Existing books on Building Construction are in most cases excellent in some respects, but too often fail to place before students the treatment which is necessary if buildings are to be not only sound, but also architecturally satisfactory. Building construction in itself is merely a skeleton; its effective covering is architecture."

A definition of architecture as the covering of construction is rather risky, at all events not comprehensive enough; Roman and Renaissance architecture might be so defined, but hardly Gothic; the spirit of the remark one quite understands, but its expression is not fortunate. The idea of a book on construction which should be written with a direct reference to the bearing of construction on architectural effect is fascinating, and it might be done; but with regard to a considerable portion at least of this volume one cannot recognise that the programme of the preface is carried out or even attempted. Mr. Searles-Wood's short chapter on "Carpentry," and Mr. Sprague's full and lengthy treatise on construction in metal, are both excellent in their way, but they are both purely practical engineering treatises, with no reference whatever to ultimate architectural aims; Mr. Sprague, of course, being a professional engineer, writes naturally from an engineer's point of view. Mr. Baggallay, in his excellent and learned treatise on stonework, makes one or two brief references to questions of effect, and he gives at the close of his article one of Viollet-le-Duc's illustrations of a French mediæval buttress, to show the reason for the position of the flying buttresses; also he gives some illustrations of different styles of rustication, which is a matter of effect; but with those exceptions it is a practical treatise on the nature and the handling of building stones. In the first section of the book, by Professor Pite, we find (as we should have expected) rather more reference to the artistic element in building; passing criticisms on things that the writer dislikes, etc., and we are inclined to think that he is the influence under which the Preface, already referred to, was written. And while his section of the work is more imaginative, in this sense, than the rest of it, we cannot help thinking that he has also been a little too imaginative over some technical matters.

The first point in architecture in the making is naturally the securing of a solid foundation for the building; this is referred to on the first page of the book, with the remark that the selection of a good foundation "is a test of character in the builder." The word "builder" may have been used in the wide sense and not in the trade sense, but we should have preferred to read "a test of character in the architect." The general remarks on foundations and footings are excellent, and very well illustrated; the latter praise may be extended to the whole of the book, the illustrations being all drawn with the greatest care and in the most practical manner. It is when we come to the chapter on "Walls, piers, and arches" that we cannot profess to understand some of the theories put forward. What is the meaning of saying that "a detached wall of indefinite length in proportion to its height would require strengthening on a scale that might eventuate in a thickness . . . equal to the great wall of China"? The author contradicts this curious remark immediately afterwards by saying that "the length of a wall . . . is the length of that portion which is unbuttressed or unsupported," which is the correct way to state it, and the view taken of it in the Building Act. One of the remarks in Professor Pite's portion of the work which bears on the æsthetics of architecture is that "the architectural effect of thickness in doorway and window recesses is sufficiently important to receive consideration," a remark which reminds us what a curious change in practice there has been in this respect in England during the last thirty or forty years. There was a time within living memory when depth of external reveal was almost an architectural fetish, and window-frames were kept as far back as possible to obtain even in ordinary houses a brick or stone reveal of nine inches; and then we saw that succeeded by a taste for getting the window frames flush with the outer wall-surface, or as near that as possible; such are the caprices of fashion in architecture.

When we come to the subject of arch and lintel, we meet with some very curious statements. The author appears to consider that a stone lintel contains a concealed arch line (which he dots upon one of the diagrams), "and this arch line will receive and deal with all the weight that comes directly upon it, allowing none to pass through it to the core or underside of the lintel." Then what is the value of the lower part of the lintel? There is actually indeed a half-suggestion that it might be cut away, and that the lintel is really a flat arch. What does that very high authority Mr. Ira Baker say, in his book on "Masonry Construction"? "The ability of a stone to resist as a beam depends upon its tensile strength, since that is always much less than its compressive strength." As with a wooden or an iron beam, the upper portion of a stone lintel, above the neutral axis (which exists, though it is somewhat indeterminate), is in compression, the lower portion, under transverse strain, is in tension. And then in the next sentence Professor Pite seems half to recognise this in the curiously worded remark that "the safety of stone beams depends on the tenacity of the material and its ability to hold up the unsupported matter below the invisible arch line." In other words its ability to hold itself up, by tenacity, i.e., by resistance to tension. There seems an extraordinary confusion of ideas here. Another remarkable statement is that "the Greeks discovered that by hollowing their lintels on the inside, making them, in fact, like modern box girders, the risk of failure in the lintel was diminished by the reduction of its weight." Where is the example of this extraordinary treatment of a stone lintel by the Greeks? The architrave of the Parthenon is indeed divided into three thicknesses (placed close together); but this was probably done not under the delusive idea that they were stronger that way, but in order to render the blocks more manageable for hoisting into position. We must question also the statement that "a semicircular opening cut in a slab of stone . . . creates an arch, and though not built of concentric blocks, carries weight upon the same principles." It does not; it is a lintel with a weak centre, and if it cracks at the top (which is what it would do if over-weighted), it will crack at a point subject to tension, and because it lacks tensional strength. We find nowhere a suggestion of the reason why the arch is so especially suited for stone building, viz., that the voussoirs, if properly proportioned (their length considerably greater than their width), are entirely under compression, the condition in which stone is strongest; a point which certainly ought not to have been overlooked.

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*Building Construction (The Architects' Library). In two volumes. Vol. I., by Beresford Pite, F.R.I.B.A. (Professor of Architecture, College of Art); F. T. Baggallay, F.R.I.B.A.; H. D. Searles-Wood, F.R.I.B.A.; E. Sprague, A.M.Inst.C.E. London: Longmans, Green and Co., 1910. 18s.

So far from having any wish to criticise Professor Pite, we may say that we regard him, from the point of view of architectural design, as one of the few architects of the day who possess really original genius. But in regard to some of these constructional problems it seems to us that he has not expressed himself very intelligibly. All his remarks on brickwork we are disposed thoroughly to endorse. We do not understand, however, his apparent uncertainty as to the action of sand in mortar; "there does not seem to be anything in the sand itself which creates or imparts coherence." Not chemically, certainly; it is the centre round which the lime particles, enlarged by the imbibing of carbonic acid, lock themselves; why else is it so desirable to have "sharp" sand? For the same reason that a sharp and angular aggregate is best for concrete; the combination is mechanical; mortar is concrete on a minute scale. A good deal of space is devoted to the treatment of hollow walls, in regard to which all the recommendations are good in themselves; the question is whether hollow walls are desirable at all; you never know what may go on in those inaccessible spaces. This is almost admitted in the advice that the cavity should be covered in the course of construction by a slip of wood to prevent any extraneous matter falling in, the slip being moved up with each course of brickwork (or masonry). How many eyes will a clerk of works need, to see to that being done?

We can only mention two or three other points we have noted. We quite agree in the opinion (here we touch on æsthetics again) that chimney-stacks should not have heavy projecting capping, "so as to look like a column with a capital." The whole of Mr. Baggallay's long section on stonework is excellent, including his demonstration of stereotomy, a subject which, like perspective, is often made to appear much more mysterious and puzzling than it really is. There is a salutary caution against allowing the masons, in ashlar-faced walling, to fill in the interior of the work in a careless and perfunctory manner. Also the remarks on the building of stone-faced walls with brick backing (pp. 253-4) should be studied by architects and clerks of works. In regard to the sections of mortar joints for rubble walls (page 262), we are inclined to think that the projecting joints A and B in the diagram, which seem to be preferred, have their own disadvantages (as indeed seems to be suggested on the next page). In connection with the diagrams of different forms of arches (page 279), there is no suggestion as to the possible reason for the adoption of the horse-shoe arch by the Moorish architects. We are inclined to believe that it was from a vague idea that by partly returning the arch back on itself in that way they extinguished some part of its thrust. It is a better reason than that suggested by Choisy, at all events.

Taken as a whole, this is a remarkable book, and should be very useful to the younger generation of architects, to whose attention we recommend it.

The Safety of St. Paul's.

It has been a duty of the surveyors to the Dean and Chapter of St. Paul's, from time to time for 80 years past, to enter protests against subterranean operations which endanger the foundations of the cathedral. It used to be only sewers; now there is added the separate danger of railway and tramway tubes. The situation is, as Mr. Macartney once more warns the public in a letter in the "Times" of Tuesday last week, that below the comparatively thin bed of marl on which the foundations are directly laid, is a stratum of more than 40 feet thick of loose sand and gravel, holding a good deal of water. As long as this is confined it is safe, but any disturbance of the adjacent ground, below the level of the foundations of the building, which would have the effect of tapping the water in this loose stratum, might lead to a subsidence—in fact, almost certainly would do so—which would bring down part of the building. Of course the defence of the engineers is that their tube is quite capable of resisting all pressure, but there is always the dangerous interval while the tube is being inserted, and before it is closely packed up. The danger is a real one, whatever the engineers may say, and the warning of the St. Paul's surveyor ought to have serious attention.

Builders and Increment Duty.

ATTENTION is called by Mr. E. Evans, chairman of the Building and Allied Trades Committee of the Land Union, to the statement by Mr. Lloyd George, through his secretary, that increment value duty will not be payable on a builder's profit, where he has developed land for building purposes, as the whole value attributable to the house would be deducted. This statement, Mr. Evans says, has since been qualified by such phrases as "unless there were extraneous causes tending to produce an increase in the value of the bare site," and "the probability" is that no duty would be payable, etc. Mr. Evans seems to fear that platform or conference speeches are one thing and inland revenue administration is another, and that therefore the onus of proving what amount of profit is attributable to expenditure of a capital nature will be thrown upon the unfortunate trader in land and buildings. He therefore urges "that building land must be exempted altogether whilst under development, or building operations will be stopped, with the result that the rents of existing houses will increase, whilst thousands of workmen in the building trade will be thrown out of emplayment." "It is within my knowledge," he adds, "that a large number of contracts for purchases of building land, as well as agreements with builders, are hung up and cannot and will not proceed unless and until the gross injustice inflicted upon the building trade is finally removed from the Statute-book." With reference to the "conferences" mentioned by Mr. Evans, we have received a verbatim report of Mr. Lloyd George's conference with the National Federation of Building Trades Employers on October 6th, with respect to the Finance (1909-10) Act, Part I., Duties on Land Values, when, as was reported in this Journal at the time, the deputation, which consisted of Mr. S Smethurst (president), Mr. J. W. White (vice-president), and

Mr. A. G. White (secretary), received strong assurances that the grievances which they pointed out should be given "the most favourable consideration." The report is issued by the National Federation of Building Trades Employers of Great Britain and Ireland, Koh-i-Noor House, Kingsway, W.C. It should in many ways possess considerable value; but nevertheless it seems desirable to point out that the representatives were called upon at very short notice to meet Mr. Lloyd George, and that consequently they were not in a position to put before him anything like a complete statement of the case, although, in the circumstances, they undoubtedly did very well indeed.

Isaac Ware.

THOUGH one of the prominent architects of the eighteenth century, very little is known of the life of Isaac Ware, and on that account especially it is interesting to read the excellent biography which is given in a concise form in the December issue of "The Architectural Review." The year of Ware's birth is unknown, but it obviously lies close to the end of the seventeenth or the beginning of the eighteenth century. But it is not until a quarter of the new century has run that his name emerges from obscurity. Not a lightning emergence, but just a slight lifting of the veil. Among the subscribers to Kent's "Designs of Inigo Jones" (1727), Ware's name appears, and bears witness at least to a certain attained *aisance*. By this time, too, probably his academic education was at an end; for the next year, 1728, he was appointed clerk of the works at the Tower of London, and a year later at Windsor Castle. In 1735 he was draughtsman and clerk itinerant to the Board of Works, and within the next twelve months was made secretary. He also took the place of Nicholas Hawksmoor as draughtsman to the Board at Windsor and Greenwich. Meanwhile Ware was doing independent work, and had in 1733 converted Lanesborough House into St. George's Hospital. In 1738 he was still holding the office of Secretary to the Board of Works. When Flitcroft was promoted Ware was appointed clerk of the works to His Majesty's palace. His most important work is Chesterfield House, which was finished about 1749. In 1751-2, and again in 1757-8, he was employed as draughtsman at a salary of £100 per annum on the building of the Horse Guards from Kent's designs. It will be seen from these successive appointments that Ware was a busy man, and of some consideration. Besides the performance of his duties in connection with his numerous public appointments and his private practice, he was able to make a considerable contribution to the literature of his subject. The most important is of course the folio volume published in 1756, and entitled "A Complete Body of Architecture, Adorned with Plans and Elevations from Original Designs." A second edition was published in 1767, the year after his death. "The Designs of Inigo Jones and Others," a small volume of fifty-three plates of chimneypieces, ceilings, the staircase from Ashburnham House, etc., was published in 1743. This also ran to a second edition. In 1760 he issued a large folio, in conjunction with William Kent, giving the plans, elevations, etc., of Houghton in Norfolk, designed by Thos. Ripley. These volumes make quite a good appearance for a man who, besides his numerous public appointments, was engaged in a fairly wide private practice. His master in the art was of course Inigo. His work is always marked by a leaning to the older traditions—to a certain manly expression that in architecture was almost dead.

In the December issue of "The Architectural Review" are also included some delightful pencil sketches of Lyme Regis by Mr. Harold Falkner; photographs of a lovely garden at Shottesbrooke Park by Messrs. Dunn and Watson; an important article on S. Ambrogio, Milan; an illustrated article dealing with a discovery at Winchester House, Southwark; and an excellent article on "The Euston Road," by Mr. Paul Waterhouse.

Lescot and Jean Goujon.

ALL who have read Professor Blomfield's various books on architecture, and have noticed the thorough manner in which he investigates the facts connected with any subject that he has taken up, would have been prepared to find that his paper on Lescot and Goujon at the Institute last week would have contained some new facts or thrown some new light on the subject. It was rather surprising to find that Lescot was a good deal discredited, and the surmise thrown out that he was only able to do anything when he had Jean Goujon to help him, but the recorded facts seem to support this idea. It seems to have been made out that wherever we find Lescot credited with anything Jean Goujon's name is coupled with his; and that where there is no Jean Goujon there is no Lescot; and it is obvious from various records that Goujon began as an architect, before he acquired fame as a sculptor. However it was evolved, the south-west portion of the Louvre courtyard is a fine piece of architecture, and possibly Lescot had more to do with the general line and proportions of the building than Professor Blomfield credited him with. In regard to the want of force and depth of reveal in this part of the Louvre, a speaker in the discussion made a good point in reminding the meeting that when Lescot's portion of the quadrangle was built, it was only intended that the court should have been half its present width—in other words, one quarter of its present area—and therefore Lescot's architecture, on the side towards the quadrangle, could not be looked at from the distance from which we can now see it, from the opposite side of the quadrangle; a remark which the lecturer admitted to be to the point. Though the main object of the paper was to investigate the real artistic relations between Lescot and Goujon, incidentally it was of value in affording an opportunity of promoting acquaintance with the work of Goujon, and giving a series of illustrations of his principal works. Among the French sixteenth-century sculptors Goujon stands alone in regard to style, and in the manner in which he harmonised his work with the architectural detail. In regard to one of his finest and most celebrated works, the four figures in the "Salle des Cariatides" in the Louvre, which have such a curious appearance of being French reminiscences of the Erechtheion figures, it is a point worth note that Goujon's attention must have been much drawn to the design of caryatide figures, as it is known that he drew a considerable number at least of the illustrations to Jehan Martin's first French edition of Vitruvius, published in 1547, which contains several studies of caryatide figures; and that there were many similar studies in Caporali's Italian edition, published in 1536, and which must have been known to Martin and his collaborators. So that Goujon must have been familiarised with the study of caryatide figures for some years previous; but how he came to execute figures so interestingly reminiscent of those at Athens, when he had certainly never been to Athens, and when photography did not exist, is rather a mystery. Is it possible that he had seen some kind of drawing of them? About this same "Salle des Cariatides" there is a fact not generally known—viz., that it was not originally built with the vaulted ceiling now seen. It is shown in an engraving by Du Cerceau as having a flat ceiling and a pediment over the colonnade at the upper end, which pediment would have been cut off by the section of the present vault. An engraving in Perrault's Vitruvius, dated 1674, shows the vaulted ceiling, so that the change must have been made by that time. This is worth mention, because the vaulted ceiling has been attributed to Napoleon's architects, Percier and Fontaine, in 1806. All that they did, however, was to decorate the existing vault, and to flute the columns and complete the capitals. There is a rather uncomfortable suspicion that they may have meddled with Goujon's figures, and that these are not as the great sculptor left them; but it does not seem probable that any material restoration of them has been made. An abstract of Professor Blomfield's paper appears on page 610.

PIERRE LESCOT AND JEAN GOUJON.

By Professor REGINALD BLOMFIELD, A.R.A.*

In his paper read before the Royal Institute of British Architects on December 5th, Professor Reginald Blomfield recalled a remarkable Sixteenth-Century partnership and an interesting phase of architectural history.

PIERRE LESCOT, sieur de Clagny, abbé of Clermont, canon of Notre-Dame, and official architect of the Louvre, was born at Paris about 1510, and came of a legal family of some distinction. Of his early life nothing is known except what can be gathered from a poetical epistle addressed to him by Ronsard. Beyond this, and a complimentary reference to his skill as a painter, in a treatise on money by Jean Bodin (1578), nothing is known of Lescot's training; there is no evidence that he went to Italy, nor did he produce any works in architecture. He first appears on the scene in charge of Jubé or rood loft of St. Germain l'Auxerrois, which was being built between 1540 and 1544.

It will be found that in every work in which Lescot was engaged he never failed to associate with himself Jean Goujon. The only contemporary mention of Lescot in connection with the Jubé is the solitary entry in the Comptes, which makes no reference to any design prepared by him, and in no way warrants the assumption that he did in fact design the screen. The Jubé was destroyed in 1745. Piganiol de la Force describes it as having been formed with three semi-circular arches, divided by piers of engaged Corinthian columns.

Lescot and Goujon were also associated in the famous "Fontaine des Innocents," which was built in 1550 at an angle formed by two streets, the Rue aux Fers and the Rue St. Denis, next the Church of the Innocents. The fountain abutted against the church, and was built as an open loggia with two arches at the sides and one at the end. It was taken down in 1785, and rebuilt more or less in its present form, as a detached square pavilion, with a new plinth and additional sculpture, in a manner which gives an entirely false impression of the original design. Lescot, as the best known man at the Court, was appointed architect of the new buildings at the Louvre and the royal buildings in Paris, with full power to conclude all contracts and arrange for the execution of the works. Lescot started the work immediately after Easter, 1547; but in 1549 a change of plan was decided on. Lescot was commissioned to prepare a new design and specification and to pull down so much of the work already done as was necessary to carry it out.

Lescot's design is believed to have provided for the entire rebuilding of the rectangular court of the mediæval Louvre. The work was begun on the west side, facing towards the Tuileries, and was carried towards the river southwards from the present entrance, returning eastward along the river front in the direction of St. Germain l'Auxerrois and Notre-Dame. Though he was not disturbed in his charge of the building, his work was probably limited to the superintendence of the south wing; and the curious thing is that when the little gallery was built at the south-west angle, and the great gallery crossing from the Tuileries along the river front to join the Louvre, Lescot does not appear to have been consulted, and the work was placed in other hands.

Palustre laid it down as almost certain that Lescot designed the Chapel of the Valois. The work was carried on by fits and starts. Lescot is said by Palustre to have superintended it till 1570, when he was superseded by Bullant.

The Hôtel Carnavalet has been attributed to him, but probably the only ground for this suggestion is that Jean Goujon undoubtedly executed some of the sculpture here. The Louvre and the Jubé of St. Germain are the only works with which Lescot is known, on authentic evidence, to have been connected.

In regard to the designs for the Louvre, the plan was not particularly original. It was to follow the lines of the old Louvre in general outline, and the wings were to be in single thickness; that is, there was no attempt to provide independent access to the various rooms. The Hall of the Caryatides, with the Tribunal, some forty-five metres by thirteen, was a splendid room, and some very elaborate work was carried out in the King's room. In Lescot's design there is a distinct reminiscence of the ground-floor arcades of Ancy le Franc. There is some ground for believing that Ancy le Franc was designed by Serlio, and the story that Serlio prepared a design for the Louvre which was set aside in favour of Lescot's has never been proved or disproved. How was it possible for a man who, so far as is known, had not been in Italy, and had certainly not studied architecture from his youth up, as De l'Orme had done, to arrive *per saltum* at this perfection in detail? It is evident that the designer was more intent on sculpture than architecture, for there is no attempt to keep the two in scale and relation to each other. The niches are too small for any figure that could possibly stand up against the colossal figures on the upper storey. That, perhaps, is not the fault of the original design, as these figures were carried out after Goujon had fled to Italy. The master-hand that might have kept the scale and balance of the design was no longer there, and Lescot, left to himself, was powerless to control the exuberance of inferior men. Lescot's design for the Louvre (I call it so for convenience) is very much what one would expect of an amateur whose ideas are translated into practical shape by a skilful sculptor, with an unusual knowledge of architectural detail and a keen eye for opportunities of sculpture. But it is not a great composition. It shows no sensibility to light and shade, to the possibilities of mass and outline. Considered as architecture, it is timid and commonplace, only redeemed by the perfection of its workmanship and Goujon's magnificent sculpture.

Goujon, whose fame now rests entirely on his sculpture, was, as a matter of fact, an architect of admitted reputation and attainments, and was perfectly capable of supplying that technical knowledge, the absence of which I cannot help suspecting in Lescot. Nothing is known of his early training. He is first heard of at Rouen, where he was employed at St. Maclou and in the Cathedral (1540-42). At St. Maclou he carried out the black marble columns supporting the organ-gallery, and parts of the famous doors at the west end. In the Cathedral he made the figure of Georges d'Amboise the younger for the d'Amboise monument in 1541-42. This figure was destroyed, ten years later, in order that d'Amboise might figure on the tomb in his Cardinal's robes. The Brezé monument was being put up at the same time on the opposite side of the choir, and tradition has always credited Goujon with part of this work.

In 1544 Goujon was in Paris working on the rood screen of St. Germain, with Simon le Roy and Laurence Regnauldin, and appears in the Comptes as "tailleur d'ymages." It must have been about this time that he, or Ponce, carved the splendid panels of lions on either side of the entrance to the Hôtel Carnavalet, and the figure with the cornucopia on the keystone. Goujon must also have been employed in the Château of Ecouen before 1547. In that year a translation of Vitruvius by Jean Martin was published at

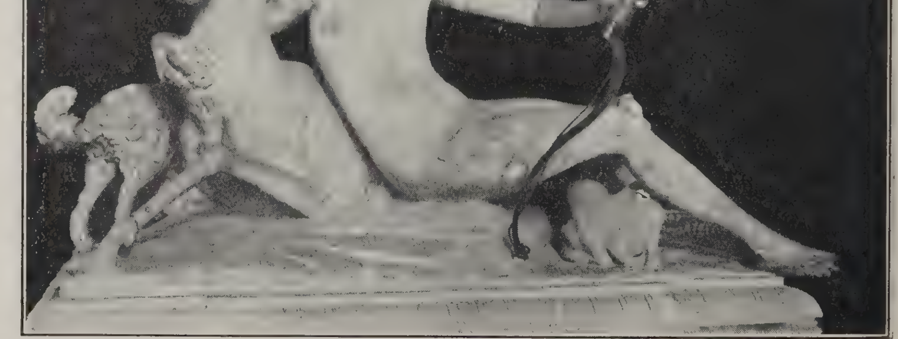

FIGURE OF "DIANE" IN THE LOUVRE. BY JEAN GOUJON.

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*Abstract of a paper read before the R.I.B.A., on December 5th.

Paris with illustrations and an introduction by Goujon. Martin in his dedication to Henry II., described Goujon as "naguères architecte à Monseigneur le Connétable, et maintenant l'un des vôtres." Goujon himself, with characteristic modesty, only called himself "studieux d'architecture."

With De l'Orme his relations were probably the normal ones of architect and sculptor, except that, judging from the evidence, they were not particularly friendly. De l'Orme employed him at Anet, where Goujon executed the Fames in the pendentives of the dome of the Chapel, and the figures of children carrying the emblems of the Passion on the soffits of the north and south arches. But his most famous work here was the group of Diana and the Stag, which once surmounted a lofty fountain standing in the court at the back of the Chapel. The figures and upper part of the pedestal are now in the Louvre.

After Anet, Goujon devoted himself to the sculpture of the Louvre. In September, 1562, he receives payment of 716 livres for works that he has done and will do at the Louvre. After that he disappears from the accounts and from France. Legends grew up of his having been murdered in the Massacre of St. Bartholomew when at work on the Fontaine des Innocents, and almost the memory of him was lost in the early part of the last century. Goujon, who was of the Reformed religion, had already got into trouble at Etampes in 1555, when he was arrested, but let out on bail. Had he turned on Lescot, and so lost his protection? Or was it impossible for a man of his known opinions to remain in Paris?

Discussion.

Mr. A. E. Rickards, in proposing a vote of thanks to Professor Blomfield, referred to the lecture as a delightful variation from the usual form of entertainment at the Institute. Studies such as these lent invaluable assistance in making one's own work sublime. His disappointment, however was very real. He had expected to listen to the story of an ideal partnership, such as existed between Brunelleschi and Donatello. It was, at any rate, something to Lescot's credit that he insisted upon being associated with Goujon. He (Mr. Rickards) had always regarded the Fountain of the Innocents as an original work, and not as a compilation as he now learnt from Mr. Blomfield's lecture. This again demonstrated the value of such studies as helping to correct understanding of the works that were taken as standards in architecture.

Mr. F. W. Pomeroy, A.R.A., supporting, said it was rather gratifying to find that an architect was willing to give some credit to the sculptor. He (the speaker) valued Goujon as being the first to break away from the crudities of debased Gothic and the influence of equally crude Flemish Renaissance. The more architects knew of sculpture, he continued, the better both for the art of sculpture and of architecture. The young sculptor, too, should have some training in architecture for the benefit of his future.

Mr. H. H. Stratham said he was rather surprised that Lescot had been knocked on the head so much. He had always heard of him as being the architect of the first portion of the Louvre. One part of this building seemed much superior to the rest. He referred to the small attic on the top, which was in far better proportion than the later work, with its three nearly equal storeys. Jean Goujon's style was a peculiar adaptation of Greek feeling translated into French, in which Goujon stood quite alone. The caryatides in the Louvre have remarkable resemblance to those on the Erechtheion—the same general composition imbued with a totally new feeling. It was not in the least probable that Goujon had ever been to Greece, but he had possibly seen drawings or casts. Goujon really began as an architect.

Mr. Statham then referred to the problem of fitting sculpture to architectural bounds and conditions. The lesson to be learnt, he said, was that if sculpture was to be satisfactorily combined with architecture, the sculptor should know something of architecture in the first instance, and his work would not then be merely something extraneous fitted into an architectural frame.

Mr. W. H. Ward observed that with all Professor Blomfield had said about Goujon he felt in perfect agreement. From the personal standpoint it was interesting to learn that in the year 1542 Goujon was arrested as a Protestant in connection with a sermon preached by a Lutheran pastor. The speaker then referred to a number of Goujon's works still *in situ*, and mentioned a white and black marble altar, since removed to the Château de Chantilly. Professor Blomfield's treatment of Lescot hardly gave him the full credit of being an architect. Lescot, it should be borne in mind, was in charge of the works at the Louvre some years before Goujon came on the scene. Lescot, in 1541, was probably the only one who had knowledge of Vitruvian teaching; and there was nothing to prove that he did not make a journey to Italy. In the last few years of his life Lescot's advice was sought with respect to the building of a new bridge, and his evidence was of a practical nature—of construction rather than of design. Lescot might very likely have made the general design of the Louvre, and have been influenced by Goujon in the detail. The speaker then referred to Professor Blomfield's criticism of the façade of the Louvre when seen from the upper side of the court. The criticism was somewhat unfair when the fact that the court was now twice its original size was taken into account. The court, as designed by Lescot, was intended to be much smaller, rather in the nature of a large hall, and the detail, consequently seen from a much nearer standpoint, was quite appropriate.

Mr. F. Derwent Wood, A.R.A., said that Goujon very probably saw the fountain by Ammanati, in Florence, and he must also have seen some Greek or Early Renaissance panels, as shown by his angles, which were always cut back so that the shadows were well defined at any distance. He might possibly have seen some fine examples of relief, such as the Parthenon frieze, to which his work was in many respects similar.

Mr. Edward Warren said that Goujon always seemed to express riotous joy in his work; he revelled and rioted in beauty. Goujon, the speaker believed, must have been in contact with the Italians or their work. His own work was so full of native French spirit, and his art was never hampered by attempting to "Italianise" it. There was nothing remotely contemporary in Europe that could compare with it. It was remarkable that his influence did not steal across the channel.

Mr. Leonard Stokes said they had listened to a critical literary essay, such as was not often heard at the Institute.

Professor Blomfield, replying, admitted the justice of Mr. Ward's criticism of his remarks about the courtyard of the Louvre. The two lions on the Carnavalet could be attributed to Goujon; and there was no evidence to show that Goujon had been in touch with Greek work. Referring to the relationship between architect and sculptor, Professor Blomfield said he wanted the two to work together, the sculptor to supplement the architect in monumental work.

"LICENTIATE R.I.B.A."

At a meeting of architects held at Cardiff on the 5th inst., with Mr. Wilson, F.R.I.B.A., the President of the Cardiff, South Wales and Monmouthshire Society, in the chair, Mr. A. W. S. Cross and Mr. George Hubbard, representing the Council of the R.I.B.A., addressed the assembly in explanation of the policy with regard to the formation of the new Class of Licentiates of the Institute. The proceedings terminated in a hearty vote of thanks to the Council of the R.I.B.A. for the efforts it was making in the cause of the unification or registration of the profession. Almost every architect present who hitherto had remained unattached to any society, filled up the application forms for Licentiates. Already about 500 architects have been admitted as Licentiates, or have been approved as such by the Council. There are many hundreds of architects who still remain unattached to any society, and the facilities which are now afforded of joining the Royal Institute should not be neglected. Only twelve months from the 23rd of March last are allowed, under the by-laws of the R.I.B.A., to architects to join the Institute as Licentiates, and the Council is to be congratulated upon its action in sending representatives into the provinces to explain the particulars of this class of membership.

Messrs. Cross and Hubbard also attended, with the same object, a meeting held under the auspices of the Birmingham Architectural Association, on Wednesday evening, December 8, the president, Mr. A. S. Dixon, M.A., in the chair. Applications for membership were received from twenty-five gentlemen, and the proceedings were brought to a conclusion with a cordial vote of thanks to the R.I.B.A. Council for sending delegates to explain its proposals with regard to the statutory qualification of architects.

THE "SMOKE CURSE."

At the London Institution, Finsbury Circus, last week, Professor Vivian B. Lewes, lecturing on "Smoke and its Prevention," said that one of the greatest benefits that could possibly be conferred upon the country would be the abolition of the smoke curse. Much of the smoke of to-day was accumulated poison. It had been generally admitted that during the last ten years the effects of coal smoke had not been quite so bad as during the previous twenty years. At the present time less smoke was being registered than in the eighties and nineties. Dr. Shaw had estimated that 70 per cent. of the smoke given off was due to the domestic grate. That might be true of London, but at Sheffield or Birmingham the factories would produce 70 per cent., and the domestic grate the smaller quantity. During the last 20 years vigorous efforts had been made to reduce the smoke trouble. Where firms had taken up the question some of the best results had been obtained. They had not only done away with the smoke, but had saved thousands of pounds by doing so. The introduction of gas cookers and gas stoves in the home had also materially contributed to smoke abatement. They were extremely fond of their open fire-places and he for one would be sorry to see them superseded. It was really a habit of heaping up the fire with coal that caused the smoke. By putting on the coal the top surface was deadened, and the radiation of the fire was cut off. At first there was a white cloud, and finally a dense mass of smoke, which escaped without combustion up the chimney. If they adopted a grate and arranged it in such a way as to bring a sharp draught of air close on the surface of the burning fuel much might be done to abate the smoke nuisance.

CONSTRUCTING A SPORTS STADIUM.

In Tacoma, U.S., there has just been completed a High School stadium with an estimated seating capacity of 30,000. The plan was finally aranged in the shape of a U with diverging legs, the open end overlooking Puget Sound. At the bottom of the seats was placed a walk, and at the top a promenade, both running entirely around the stadium. The running track, having five laps to the mile, was arranged so as to have easy turns; and with a straight-away at the open end of the stadium, to accommodate the 100-yd. dash and the 120-yd. hurdle race. With E street above the stadium at an elevation of about 240ft. above sea level, the finished field was arranged at an elevation of 140ft. and the level of the promenade 50ft. higher. Around the stadium the earth was sloped, with an inclination of 1½ to 1, to the parapet wall of the promenade. At points where the height was too great to allow of the inclination in the available run, retaining walls were provided. At the open end of the field the earth was sloped from the level of the field with an inclination of 1½ to 1. This was only a temporary arrangement. When the proposed boulevard is built, a retaining wall will be built at its outer edge, and an ornamental iron fence will be built at the open end of the field between the stadium and the boulevard.

The water falling on the seats was drained to the lower walk, in which outlets were provided at intervals of about 39ft. on the straight, and 30ft. on the curved part. From these outlets the water was carried in 3in. pipes to a sewer pipe just inside the inner parapet wall. Tile drains were placed behind all retaining walls. These drains were carried under the superstructure down to the field, there joining the field drainage system.

In the field the drainage is very simple. All around the outside of the field was carried an 8in. sewer pipe, which receives all the water from behind the retaining walls and the drainage from the seats. In the middle, and running the full length of the field, was run a straight line of drain tile varying in size from 3 to 6in. On either side, eight branches of 3in. tile were carried to the edge of the field. At the open end of the field, all drainage was carried to the extreme eastern part of the stadium, there passing through a sand trap, and joining the drainage system of the High School building. This was done in order to leave all drainage undisturbed when the boulevard with its retaining walls is built. The sewage from the toilet and dressing rooms has a separate system of drainage, and was similarly disposed of.

In the inner wall of the promenade were placed 28 ornamental iron posts, each carrying a torch lamp with a powerful reflector. On cables stretched across the field were suspended 12 other lamps of the same type.

A large portion of the ground upon which the stadium was built was a cemented gravel, but in other parts a very deep fill was found. In the filled parts it was necessary to drive piling for a foundation. The piles were well seasoned fir with a minimum diameter of 10in. at one end, and 14in. at the other. In driving the piles a penetration of 5in. was allowed under the last five blows of a 1-ton hammer falling 20ft. The ends of all piles were treated with carbolineum.

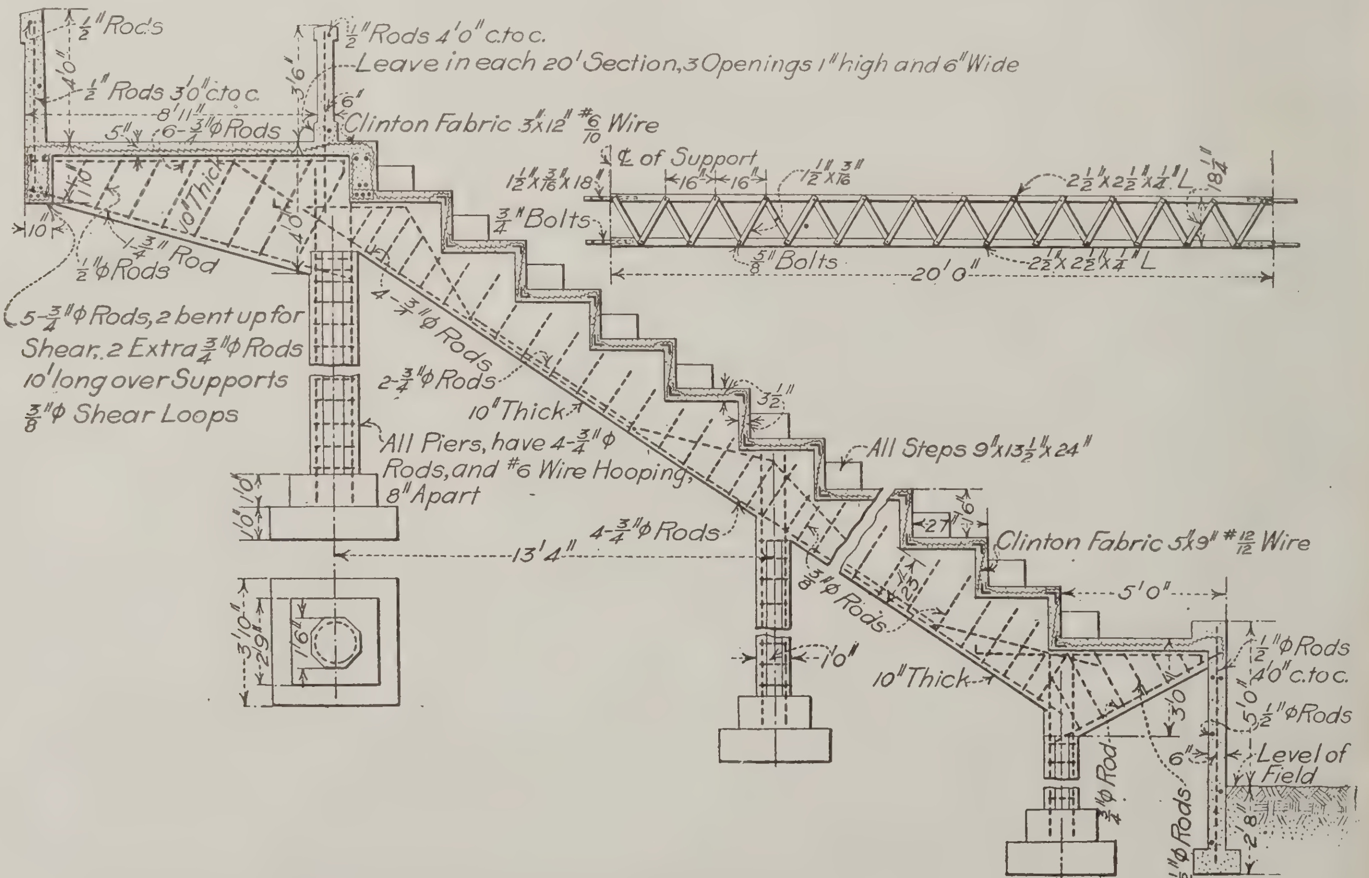
The superstructure was carried on piers, of which there are six in a row, spaced as shown on the sectional drawing. The cemented gravel has a safe bearing value of 8 to 10 tons per square foot, but on account of the shape of the structure, this was not a factor in designing the footings, which were made of plain concrete.

All concrete was of a 1 : 6 mixture, using sand and gravel, the aggregate being so proportioned as to obtain the maximum density. In the stadium proper mild steel rods, Clinton fabric, and latticed steel beams were used as reinforcement. In the retaining walls it was thought better to use bars having a mechanical bond, and in these corrugated bars were used. In the stadium proper, with these conditions, the following assumptions were made :

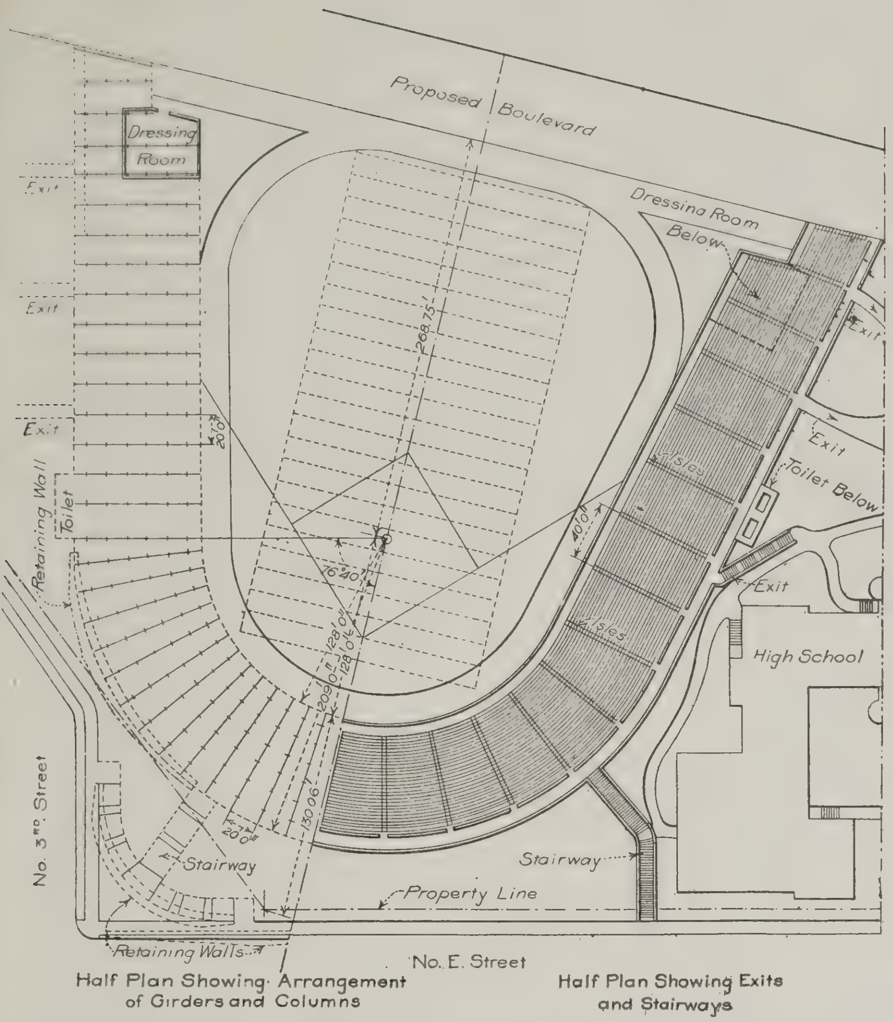
The live load on the seats was taken to be 80lb. per square foot, and on the promenade and lower walk 100lb. per square foot. Full dead and live loads were figured on all members.

Concrete in tension, 0; concrete in shear, 50lb. per square inch; concrete in direct compression, 400lb.; extreme fibre stress in bending, 700lb.; adhesion between concrete and steel, 70lb. Steel in tension, 16,000lb. per square inch; steel in compression (in columns), 6,000lb.; steel in shear, 10,000lb. Ratio of moduli of elasticity of steel and concrete was taken to be 15.

The columns being short, it was unnecessary to design them for fixture; and in their design they were increased in size to better withstand any sliding tendency that might develop in the ground. In calculat-



THE TACOMA STADIUM: SECTION SHOWING REINFORCEMENT OF SEATS AND SUPPORTING COLUMNS.



THE TACOMA STADIUM.

ing bending stresses, the straight-line formula was used. The girders were figured as simple beams, and maximum bending moment was taken as $W\,l/8$.

The beams under the extreme outer edge of the promenade were not figured as being continuous, but the maximum bending moment was assumed to be $W\,l/10$.

The beams forming the risers of the seats were latticed, being built of steel angles and flat bars. They were set directly on the girders and the ends bolted together over the girders by means of fish-plates. They were figured as simple beams, and sufficiently strong without the aid of enclosing concrete to bear safely the assumed load. Over the beams were laid strips of Clinton wire fabric 5in. by 9in. mesh 12/12 wire, the wires on the 5in. spacing being laid normal to the beam. Where two layers of fabric joined they were securely wired together. It was at first intended to construct the beams of reinforced concrete, but it was found that by substituting beams of structural steel a comparatively large saving could be made. This was accomplished, first, by a saving of time in erecting, and, second, a saving of time and money in form work. The latter was accomplished by hanging the forms from the steel beams, thereby making unnecessary expensive shoring below.

In some cases, especially in massive work, expansion joints are provided from 25ft. to 50ft. apart throughout the length of the structure. In this case, however, it was considered better for two reasons to provide sufficient steel in the concrete to take up the contraction and expansion; first, because expansion joints would be almost as unsightly as cracks, and, second, because of the thin section of the concrete subjected to temperature stresses. The amount of steel required depends on the range of temperature to which the concrete is subjected, and to the position of the steel in the concrete.

The principal quantities used in the construction were approximately as follows: Excavation, 185,000 cu. yd.; concrete, 10,000 cu. yd.; steel, 160 tons; Clinton fabric, 130,000 sq. ft.

The seating capacity of the stadium is estimated by the architect to be 30,000, but by using the available standing room 35,000 people have been in the stadium at one time, and none of them on the field. It is planned, should necessity arise, to build additional seats on the terraces. In this way the seating capacity could be increased by 12,000 to 15,000. The entire cost was about 135,000 dollars.

Messrs. Weatherall and Green, surveyors and auctioneers, 22, Chancery Lane, announce that they have taken into partnership Mr. Sydney A. Smith, F.S.I., who has been their principal surveying assistant for the past fifteen years. The style of the firm will be unaltered, remaining as for the past fifty years.

* * *

Messrs. George Jennings, Ltd., hydraulic and sanitary engineers, Lambeth Palace Road, S.E., announce that they have been honoured by the receipt of the Royal Warrant appointing them Sanitary Engineers to His Majesty King George V. Messrs. George Jennings also held the warrant of appointment in the same capacity to his late Majesty King Edward VII.

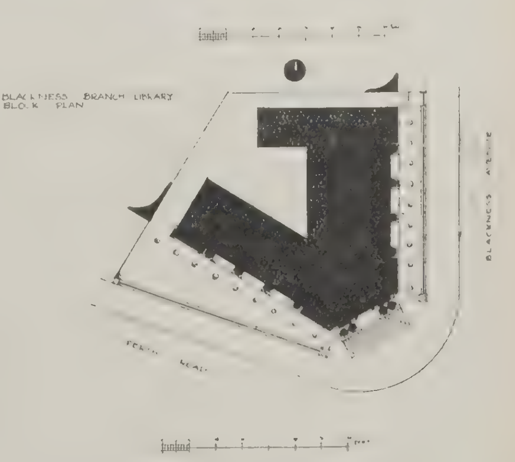
TWO DUNDEE LIBRARIES.

Blackness Branch Library, Dundee.

This branch library (illustrated in our centre plate) is one of a series of five buildings presented to Dundee by Dr. Carnegie, and occupies a triangular piece of ground at the junction of Perth Road and Blackness Avenue. The basement is entirely occupied as storage rooms. On the ground floor are the lending department and the reading room for children; while the upper floor is occupied as a general reading room and ladies' reading room. The building is faced with redstone from Closeburn Quarry, Dumfriesshire, and the whole work was carried out by local contractors at a cost of £7,000. The contractors (all of Dundee) were:—William Bennet, mason work; James Pollock, joiner work; Leslie Reoch, plaster work; T. M. Dewar, plumber work; W. Mealmaker and Son, slater work; Allan Boath, painter work; G. H. Nicoll and Co., installation of electric wiring, heating, and railings. The sculpture was executed by Albert H. Hodge, of London, and the electric light fittings were supplied by Perry and Co., London. The architect is Mr. James Thomson, the Dundee City Architect.

Coldside Branch Library, Dundee.

This branch library, one of a series of five that have been given to Dundee by Dr. Carnegie, occupies a corner site of the form of an obtuse angle at the corner of Strathmartine Road and Loons Road. The basement is entirely occupied as storage rooms. The stone is from Blackpasture Quarry, Northumberlandshire, and the facing bricks are from Ruabon, North Wales. The whole work was carried out by local contractors at a cost of £7,000. The architect is Mr. James Thomson, the Dundee City Architect, and the contractors (all of Dundee) were:—A. and T. Craig, mason work; P. Anderson and Sons, plumber work; Alex. McRitchie, plaster work; James Laburn and Son, slater work; William Norwell, painter work; J. Mackersie,



TWO DUNDEE LIBRARIES.

installation of electric light; G. H. Nicoll and Co. heating; Thomas Russell, steel work and railings. The electric light fittings were supplied by Perry and Co., London, and the sculpture was executed by Albert Hodge, London.

COMPETITIONS.

Professional Conduct.

The attention of members and licentiates of the Royal Institute of British Architects is called to the following resolution passed by the Council at its meeting on November 21, which is to form No. 6 of the Resolutions relating to Professional Conduct: "Any member or licentiate of the Royal Institute who takes part in any competition as to which the Council shall have declared by a resolution published in the Journal of the Royal Institute that members or licentiates shall not take part because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions, shall be deemed to be guilty of unprofessional conduct."

LIST OF COMPETITIONS OPEN.

DEC. 31. BOURNEMOUTH. REBUILDING OF MR. J. E. BEALE'S PREMISES. Particulars in our issue for October 12, and see notes by Society of Architects and R.I.B.A., in our issue of November 2nd.

JANUARY 21, 1911. SCHOOL FOR TAUNTON.—The Education Committee of the Borough of Taunton invite architects practising in that borough to submit designs for a provided school for 440 children. No premium is offered, but the author of the selected design may carry out the work at the commission of 5 per cent. Address George H. Kite, Town Clerk, Municipal Buildings, Taunton.

FEB 1, 1911. DUBLIN. NEW PAVILION, ROYAL HOSPITAL FOR INCURABLES AT DONNYBROOK.—Particulars in our issue for October 12.

FEB. 8, 1911. PENRITH SECONDARY SCHOOL. The Governors of Queen Elizabeth's Grammar School, Penrith, are prepared to receive competitive designs for the erection of a new secondary school, accommodating 200 students, with provision for the conduct of technical and evening classes. The following premiums are offered: 1st, £50; 2nd, £25; 3rd, £10. The designs must be sent in not later than February 8th, 1911, to James Cropper, The Vicarage, Penrith, Clerk to the Governors.

MARCH 1, 1911 MUNICIPAL OFFICES, COVENTRY.—This competition is open to all architects, and the assessor is Mr. E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry. See our issue for November 23rd.

MARCH 15, 1911. THEATRE AT SAN SALVADOR.—Particulars in our issue for October 26.

NO DATE. TREDEGAR (MON.). MODEL VILLAGE.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

NO DATE. SOUTHPORT ELEMENTARY SCHOOL.—Local architects (including those residing in Birkdale) are invited to compete. Particulars from Mr. J. Ernest Jarratt, Town Clerk, Town Hall, Southport.

NO DATE. LLANDRINDOD WELLS. PAVILION.—The Urban District Council of Llandrindod Wells invite competitive plans of a pavilion to be erected in the Recreation Ground; first and second premiums. An assessor will be appointed. Particulars from D. C. Davies, Clerk to the Council, Llandrindod Wells.

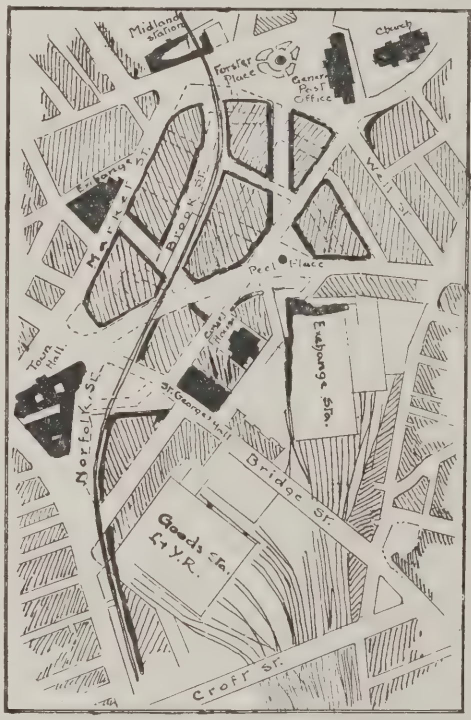
CORRESPONDENCE.

The Re-planning of Bradford.

To the Editor of THE ARCHITECTS' AND BUILDERS' JOURNAL.

SIR,—I have read with much interest the correspondence on the re-planning of Bradford, and should like to add a few suggestions.

I notice that, up to the present, all the suggestions show the proposed railway on the same side of the Exchange Station. If there is no conclusive reason for that route, I would suggest that the railway be taken along the other side of the Exchange Station following Brook Street and Norfolk Street, as shown on the accompanying plan. It would entirely avoid the disadvantages of cutting through all the blocks of buildings, and breaking up streets (necessitating an enormous amount of making good, etc.) inseparable from the already proposed routes. The advantages to be gained are that the route is already in existence (in embryo, certainly), and all that is necessary, roughly speaking, is to widen these streets—which is certainly a simple matter compared with the wholesale cutting up on the other side. The further advantages are that the scheme would present an opportunity (never to be afforded again, perhaps) of improving that quarter of the town.



A main thoroughfare might be taken direct from Forster Square to Peel Place, and both these centres might well be enlarged, especially on account of the stations. At the same time, Chapel Street might be straightened, and an open space formed, to the great improvement of both buildings. Another street will be required between the Court House and the Exchange. All the important buildings will by this means be opened up by direct routes—greatly adding to the convenience of the general public. This method of planning would also show off the town to much better advantage; and, as regards cost, I am sure that the enhanced value of the plots would balance the cost of improvements. Another great advantage of this scheme would be that the railway would not be so obtrusive as in a new and important street like the proposed Kingsway.

In view of the great facilities afforded by the Town Planning Act, and the opportunity presented by the railway extension, it is earnestly to be hoped that the improvements will be on an adequate scale, and laid out on a definite axial plan. Also, this scheme lends itself admirably to artistic treatment—a consideration which unfortunately has not received sufficient attention hitherto, and the importance of which from an educational point of view cannot be urged too strongly.

If this matter is taken up as it should be, in a public-spirited, intelligent manner, there is a good chance of doing something which will be worthy of the importance and world-wide name of the town of Bradford.

WELLWISHER.

MR. CARRERE ON THE ST. GEORGE'S HALL MEMORIAL SCHEME.

Professor Adshead, of Liverpool University, has received the following letter from Mr. John M. Carrere, senior partner of Messrs. Carrere and Hastings, the eminent American architects:—

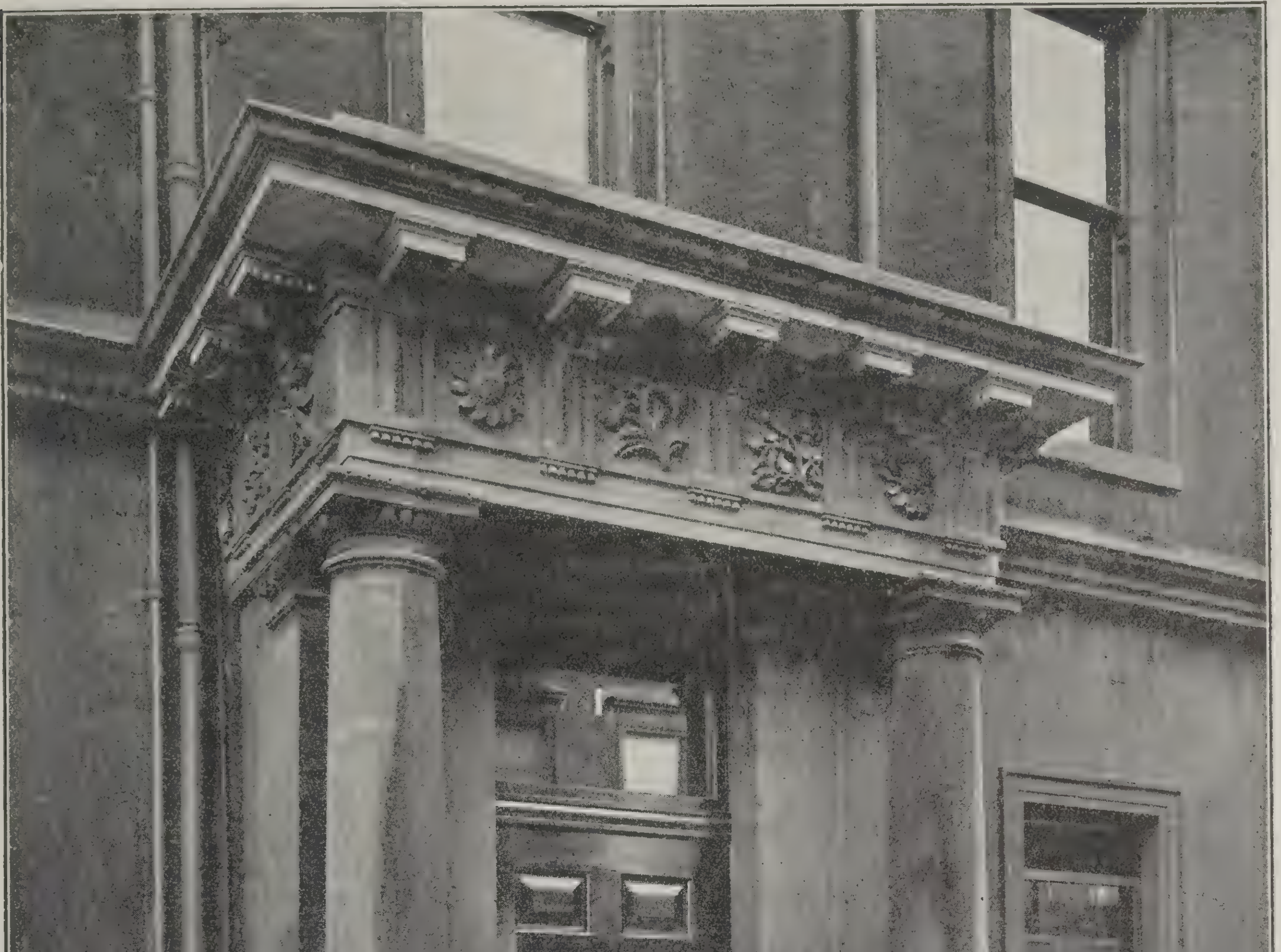
"Dear Mr. Adshead,—I am indeed surprised and shocked to learn of the contemplated project to erect an equestrian statue of King Edward on the terrace at the foot of the main flight of steps at St. George's Hall. To destroy in this manner the monumental character and simple treatment, the bigness of this whole façade, with its central colonnade and approaches, would be of such a great calamity that it ought to be prevented by good sound advice and an appeal to the common sense of the people, who in the last analysis ought to trust to the expert opinion and judgment of the artists in such matters. The statue will suffer, and the building and its setting will lose much of its character, and there surely must be other available and commanding sites in your city, perhaps more distinctive sites, where the statue would count for its full value without detracting from its surroundings, as it is sure to do in this instance. To place the statue as proposed would simply be adding one more feature, a superfluous detail which would be somewhat lost in an already complete ensemble, while it would count for all that it is intended on a site of which it could be the central feature.

"It occurs to me to suggest that you endeavour to establish in your city an Art Commission, such as we have for the City of New York. In the twelve years of its existence it has done such efficient service and has secured the confidence and respect of the community to such an extent that no attempt has been made by politicians to interfere with its functions or to modify the statutes under which it was created, excepting to enlarge its powers and extend its influence. I am sending you a copy of the Act, which is simple, and has proven so effective.—With kindest regards, very truly yours,

JOHN M. CARRERE."

"225, Fifth Avenue, New York.
November 22, 1910."

The establishment of such commissions as Mr. Carrere suggests is no doubt merely a question of time. We have always held that this is the only satisfactory means of dealing with questions such as these which have arisen at Liverpool and elsewhere in connection with King Edward memorials; and we must confess to some surprise that, in view of the provisions of the Town Planning Act, the movement in this direction has been so excessively slow.



[Photo: E. Dockree.

This doorway, the work of the younger Wood, was erected about 1768. The Order is Doric, and has the same detail as that in the Circus, from which it is removed only a few feet.

DOORWAY IN BROCK STREET, BATH.

OBITUARY.

The Late Mr. Wornum and the R.I.B.A. Examiners in Architecture.

At a meeting of the Examiners in Architecture held at the Royal Institute of British Architects on Wednesday last, a resolution was passed expressing their sense of the great loss sustained by the Institute in the lamentable death of Mr. R. Selden Wornum, to whose work as an examiner for more than twenty years, and in the organisation of architectural education, the Royal Institute and a succession of generations of students to whose interests he devoted time and care without stnit are so deeply indebted.

Professor Ludwig Knaus.

Professor Ludwig Knaus, the German genre painter, who died last Thursday, was born at Wiesbaden in 1829. From 1845 to 1852 he studied at Düsseldorf under Sohn and Schadow, but, to judge from his early pictures, the works of the great Netherlandish masters, Ostade and Teniers, exerted a much stronger influence upon him than the example of his immediate teachers. On leaving Düsseldorf he went to Paris, where he remained for eight years, and in 1874 took up his permanent position in Berlin, on being appointed to a teaching post at the Academy of Arts.

Councillor Huins.

It is with deep regret that we record the death of Councillor Thomas Huins, J.P., President of the Redditch Master Builders' Association, which took place at his residence, Dingleside, Redditch, on November 26, after an illness of about four weeks' duration. By the death of Mr. Huins Redditch loses one of the most prominent of its public men. He was the eldest son of Mr. C. G. Huins, the founder of the firm of builders of Messrs. C. G. Huins and Sons, of which firm the deceased gentleman was the head at the time of his death. Mr. Thomas Huins found occasion for the performance of much public work. His abilities were recognised by his fellow townsmen, who elected him as a representative on the Urban District Council. He was assiduous in his attention to the duties of that office, and in due course was elected to the chairmanship. He displayed a keen interest in the educational work of the town, and served upon the Higher Education Committee. He was also a recognised leader in religious, political, and temperance movements. Mr. Huins' wife predeceased him many years ago, and he leaves a son and two daughters. The deceased gentleman was 53 years of age.

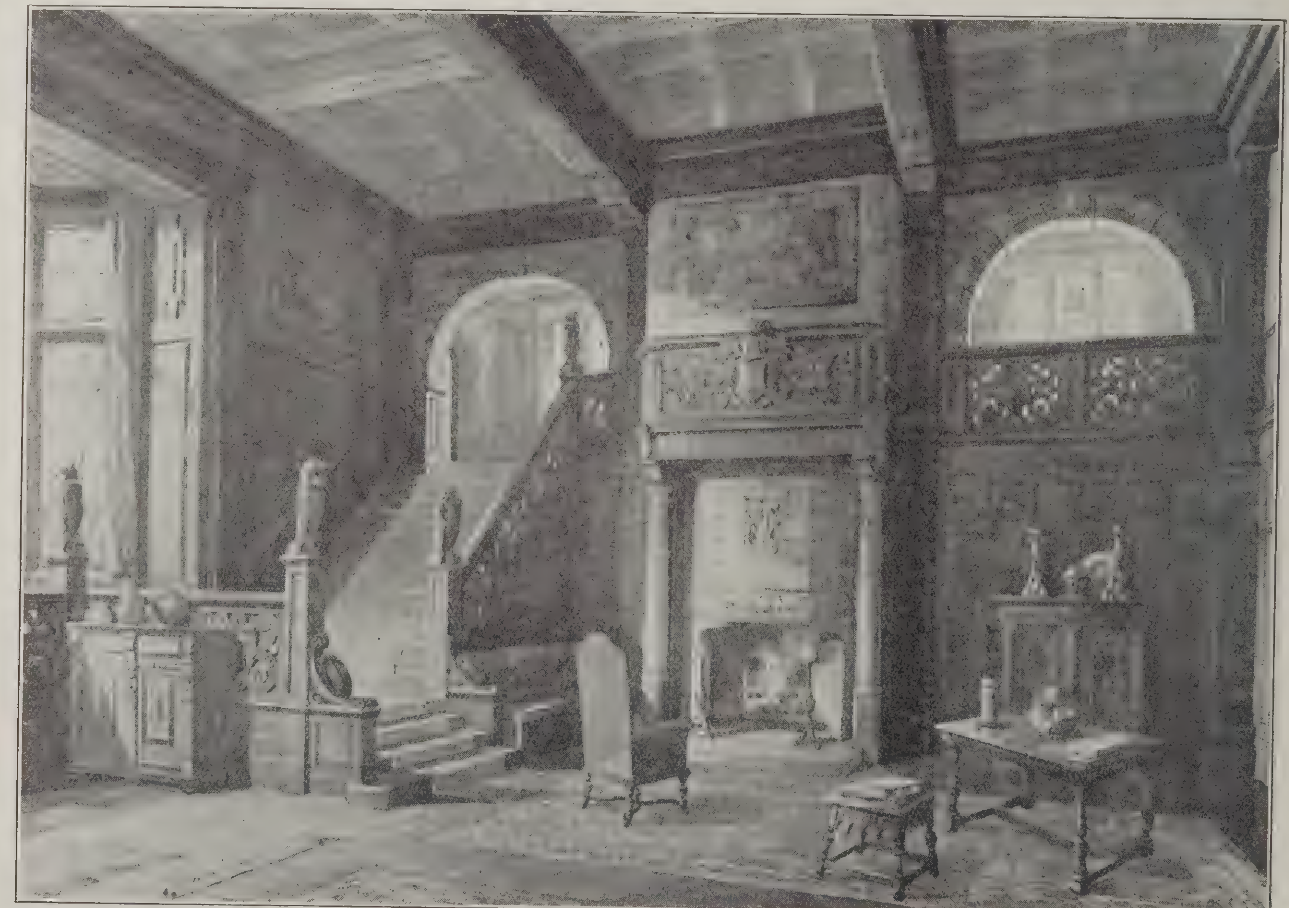
The funeral took place on December 3, and was attended by the members and officials of the Redditch Urban District Council, the members of the Master Builders' Association, and several other bodies, societies and organisations.—Fred Turner, Secretary, Redditch Master Builders' Association.

The Route of the St. Paul's Bridge.

According to the City Corporation's Bill, to be introduced in the next session of Parliament, the new bridge will run from the junction of Southwark Street and Great Guildford Street to the south side of Cannon Street, about fifteen yards west of the centre of Old Change. The work will include the widening of St. Paul's Churchyard, between Cannon Street and Cheapside, and the construction of a subway for foot passengers.

FIRE RESISTANCE OF CINDER CONCRETE.

The cinder concrete walls of the buildings used in fire-tests of floors at Columbia University were erected two years ago, and have been subjected to five fire tests of 4 hours each, during which the average temperature has been 1,700 degrees Fahr. At the end of each four-hour test a stream of water at 60-pound nozzle pressure was played back and forth over the ceiling for 10 minutes while the ceiling walls were red hot. After this severe treatment, Prof. Ira H. Woolson states, the walls were practically as good to-day as they were when new, except that the rear wall has been scored by the water to a depth of from $\frac{1}{2}$ to 1 inch for two or three feet near the top. This wall gets the direct stream for a portion of the time, and always receives the deflected stream from the ceiling. A duplicate of this building torn down some years ago sustained seven four-hour tests at 1,700 degrees before its removal. At that time the walls were as good as those in the present structure. Professor Woolson is of the opinion that within reasonable limits the percentage of coal and the amount of fire material in such cinders have very little if any effect upon their fire resisting qualities. He believes that sifting and washing the cinders would be a useless expense, and injurious to the cinders as aggregate for concrete. The pieces of coal which came next to the surface of these walls have been burned to an ash, but remain in place and act as a non-conductor of heat. Plenty of particles of pure coal can be found in the walls less than two inches beneath the surface.



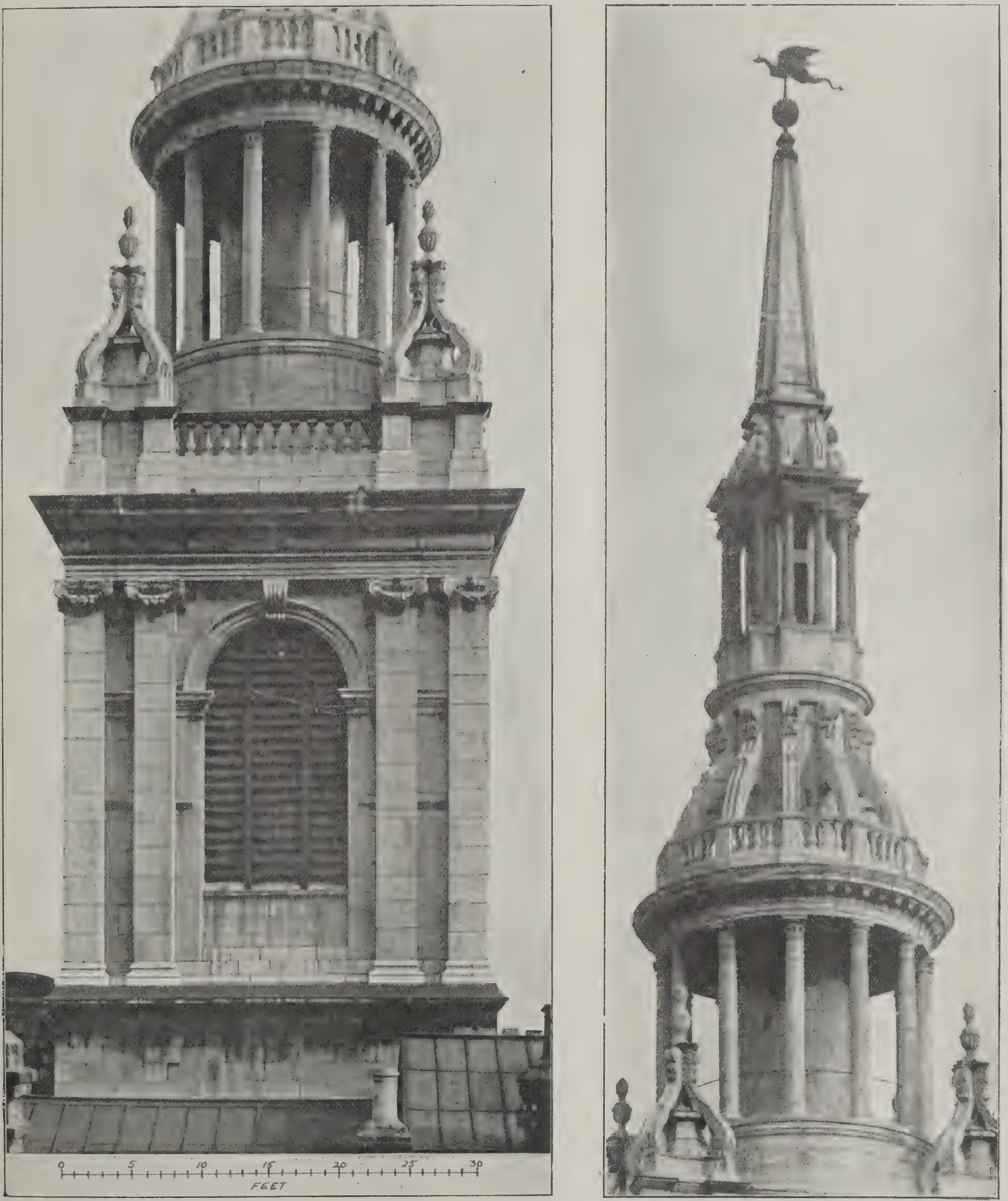
DESIGN FOR A LARGE HALL. JAMES A. JONES, ARCHITECT.

(Royal Academy Exhibition, 1910.)

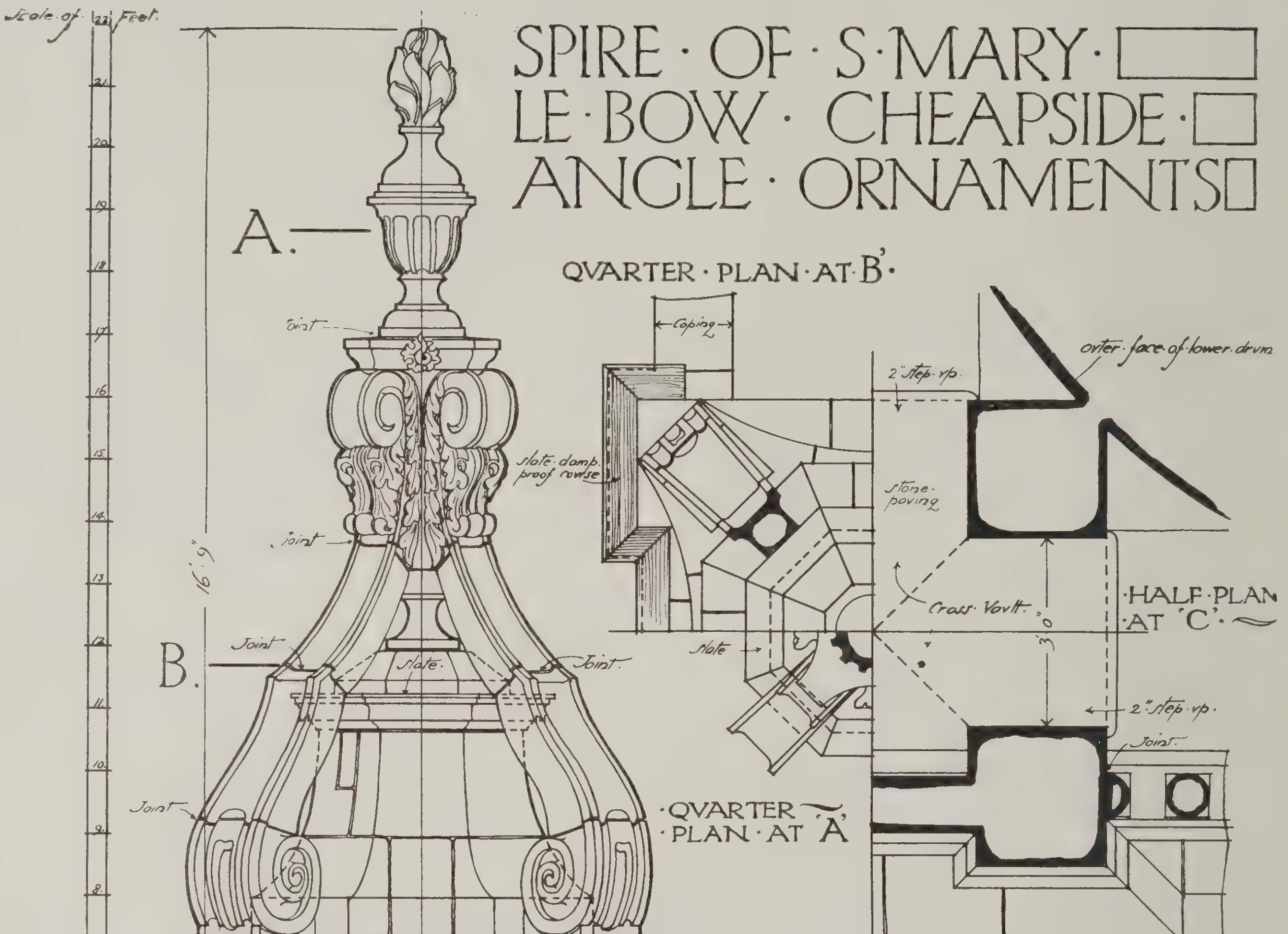
THE SPIRE OF BOW CHURCH.

The spire of Bow Church is one of Wren's superb achievements. The accompanying views are quite unique, that on the left having been taken in dead elevation from an adjoining roof, the other being a telephotograph taken from street-level. The angle ornaments, of which a drawing is given on the next page, are shown in both views in relation to the whole. The height of the spire to the top of the ball is 216ft.; to the base of the angle ornaments (i.e., the top of the main cornice), 112ft.

There is a walking-space arranged behind the balustrade at the level of the main cornice crowning the square portion. This passes beneath the inverted console ornaments, each of which, carried upon a stone cross-vault and four substantial piers, exerts a pressure upon the angle of the tower a few feet above the great corbels which bring the square to an octagon internally, and thence to a circular drum. Not only is the eye thus carried from the square tower to the circular spire by means of features of exceptional beauty of design, but also the necessary weight is obtained to counteract all thrust. Gwilt found it necessary to restore the consoles and flaming orbs in portions where the atmosphere had decayed them to such an extent as to render them unsafe under the swaying of the spire which takes place during the ringing of the full peal of bells.



THE TOWER AND SPIRE OF BOW CHURCH, CHEAPSIDE, LONDON. SIR CHRISTOPHER WREN, ARCHITECT.



MEASURED AND DRAWN BY FRANK L. ATWELL.

FOREIGN STUDY AND TRAVEL AND NATIONAL STYLE.

By G. LEONARD ELKINGTON, A.R.I.B A.

In his paper read before the Architectural Association on December 12th, Mr. G. Leonard Elkington put forward the somewhat daring proposition "That Foreign Study and Travel retard the Development of National Style." He maintained the impossibility of obtaining more than a superficial knowledge of the outward forms of the buildings of the past, and contended that sufficient acquaintance with it could be acquired without "seeking it in person on the spot."

ALL styles of architecture in the past have owed their origin primarily to a desire to build in beauty, for from this desire there arose, in a perfectly natural way, a seeking after novelty. This seeking led to the production of new forms, and of these those that gave most pleasure were reproduced. Thus the styles came about, to wax and to wane, to live or to die as the future might decide.

Architecture Regarded from a Wrong Standpoint.

From a genesis such as this to the culmination of any style is a long step, for the evolution of architecture, depending as it does on external conditions, must necessarily be slow. It is owing to imperfect knowledge, insufficient appreciation, and even complete ignorance of very many of these external conditions that a proper understanding of architecture is so extraordinarily difficult. It is for these reasons that architecture is so often regarded from an entirely wrong standpoint, with unfortunate results, he was afraid, for the impression thereby gained is presented in false perspective, and the lesson to be learnt is misread. Not only is this to the detriment of the learner, but when his learning is subsequently applied in the exercise of his art it is to the detriment of that art also. This, in his view, was one of the ever-present dangers of too close a study of the architecture of the past.

Take the architecture of a civilisation which, in its relation to other co-existent civilisations, occupied a position more or less analogous to that held by our own State at the present time—the Roman Empire—that of people whose dominating influence led to colonial expansion. The lesson to be learnt from its architecture should surely be applicable to our own. Has it been learnt with advantage? No. Can it be learnt? No.

It is beyond human power for any student so to blind himself to the state of civilisation in which he has been brought up that he could sufficiently suppress his own entity in the attempt to realise correctly a state which existed centuries ago. If this be so, how is he to form a proper judgment of Roman architecture? And in the absence of a proper judgment, how could he form a correct estimate of its worth? How can he tell with any pretence to accuracy the extent to which it met the conditions of life that then existed, the extent to which it reflected the knowledge of the day when it flourished? And yet it seemed to the author to be imperative that this knowledge should be first obtained if the result of the study is to be of practical value to him, for without that knowledge he may be led into merely wasting his time.

A Sterile Study.

But he might be told the object of our study is not to see how far Roman architecture was suited to the requirements of the Roman civilisation, but to inquire into its suitability for the requirements of present day. But several factors intervene to prevent the accurate determination of an inquiry of such a trifling nature. The examples of Roman architecture that remain to us are in varying states of decay. They are very few in number, spread, too, over a wide area. In their pristine beauty, when they might have been able to impart more information than they can now give us, they would have surely represented different values in the architectural scale. These remaining examples represent also, comparatively speaking, a narrow range of types or classes of buildings. Here, then, is the field of your inquiry—a field of wide boundaries but producing a limited crop. You spend five years or so, in indefatigable study, sketching, measuring, photographing what exists, in exercising your imagination to restore what has gone—an ideal student, in fact. You will unearth the moss of ages to uncover the bones of a dead past, but the soul of that past is beyond your grasp. You may discover how those bones were joined one to the other, but the spirit in which they were so joined you cannot reveal, for it is gone. You will come back with a superficial knowledge of the outward forms of two or three or more individual units of that vast fabric of Roman architecture—only a superficial knowledge, backed with plenty of conjecture. You will have learnt nothing that will tend to advance the architecture of to-day. Your first job will probably be as dismal a failure as can be imagined, and your first client, when he has his second commission to give, will look up some old studio friend of yours who did not get the Travelling Studentship.

At Home or Abroad?

He did not say that examples of ancient architecture should not be studied at all, for he could not conceive any architectural training of value that did not include in its syllabus a comprehensive review of the development of architecture in the sequence of historic styles. But that review should play the same part in the training as does the learning of Latin and Greek, as dead languages in the education of a cultured English gentleman—that is to say, it should be a means only to an end. He believed that an all-sufficient knowledge of the architecture of the past could now be acquired without spending perhaps the most valuable part of one's life in seeking it in person on the spot, for it is in those years that immediately follow the student's career as a pupil or in the schools that his mind is in its most expansive condition, and when impressions of a lasting nature are received most readily. It is cruel to suggest that such a mind is worthily employed in attempting to unravel problems of the past in some out-of-the-way place abroad, and with all the difficulties in the way of obtaining a proper understanding. "And, when it is recollected that it is the most promising students that meet this fate, I say it is nothing less than intellectual ostracism of the worst type by the powers that be in the shape of those architectural autocrats who control the immediate destinies of our students."

He held that those five years of the lives of our most promising students would be better devoted to unravelling the problems of the present in their own native land. There are national problems enough to be unravelled, and it is surely only by unravelling them that a national style will be developed. As we get older we are inevitably more and more inclined to shirk serious attempt at their solution, so engrossed do we become in building up a balance at our bank. It is the young men who should be in the front rank of the force tackling those problems. Why, then, consign them to outpost duty? This is the principle of the author's proposition.

An Alternative to Travelling Studentships.

He offered as a mere suggestion that, say, a Minister of Fine Arts should have the bestowal of a number of commissions in connection with some of our public buildings. Instead of a travelling studentship, the successful student, the student with knowledge, should have one of these commissions given to him. The author could not help thinking that by this means the cause of a national architecture would be advanced, if only by indirect means at first.

What interest does the public take in our travelling students? Does it really care whether the influence of the travelling students' work upon current architecture is for good or for bad? It cannot even decide, because it is in possession of no criterion by which the work may be judged.

Reward the successful student as indicated, set the people a national standard they can look up to, and much would be done to awaken public interest in him and in his work, and, what is more important, in architecture generally.

Alien Intrusions.

The chief objection the author advanced from the point of view of the development of a national style to this form of travelling study, was the tendency it fosters to introduce alien features into the work of the student or practitioner. However strong a man may be to avoid any conscious imitation, he is bound to be influenced sub-consciously by what he has seen. For that reason he should confine his study to his own country, when his work is to lead to the development of a national style.

Pre-Renaissance Inspiration.

He did not think that anyone would question the statement that in pre-Renaissance days the æsthetic value of the buildings was largely achieved with the assistance of a potent force exercised by the Church on the builders, a force which compelled each workman of his very faith to make his work beautiful. We must admit, too, having regard to the haphazard building methods of the time, that the architecture was singularly successful and beautiful, and that when judged, so far as we can now do so, from the point of view of fitness, it is fully endowed with national characteristics. Now, one of the reasons why this architecture was so successful was in that it had progressed slowly on the lines by which all the great styles of the past had matured—that is to say, by means of knowledge supplied by tradition, and with an aim of an inspiring nature always in view. The objective of this aim is now often difficult to determine in many cases, and yet we feel instinctively that it really existed. And for so long as the change in social condition and the advancement of knowledge had proceeded slowly, so long did tradition prosper and so long had the evolution of architecture kept pace.

At the Renaissance social conditions changed so rapidly, and knowledge leapt forward at such a bound, that architecture by evolution was left behind, and so died the old order as the living expression of the day. But it was a lingering death, for tradition dies hard.

The Birth of the Modern Architect.

Now, one of the most interesting outcomes of the new order was the initial appearance on the scene of the architect in the sense that the word is understood today. Henceforward the knowledge and practice of all that architecture means was to be centred in the individual. The destiny of architecture lay in the lap of the future and in the hands of the architects. How has architecture fared at their hands in this country? The rise and fall of Anglo-Palladianism, the rise and fall of Anglo-Greek, the battle of the styles, the rise and fall of the Gothic revival, the age of eclecticism, our present position—do not these point all too forcibly to the only answer we can honestly give to the author's question? Surely we are not proud of so gloomy a record of bright hopes recurring only to be snuffed out in dismal failure. It points, only too eloquently, to the fact that our predecessors have squandered the glorious inheritance left us by Inigo Jones and Wren, and that they have failed in their trusteeship of the trust reposed in them by the Renaissance.

This is not the time or place for us to consider all the external circumstances which may have led to the sorry state the author had mentioned, for he admitted that the architects of the period were not wholly to blame. It is only necessary for us to reflect now upon the two factors which, in his view, undoubtedly conduced to this degeneration in order that we shall not similarly fail in handling so much of the inheritance as remains to us. These two factors are the head and tail of his proposition.

The Absence of Definite Aim.

It was the absence of any definite aim such as that which characterised pre-Renaissance architecture, the lack of a definite end such as, he suggested, would be afforded by a national style, that led to the restlessness, the readiness to clutch at straws, the helplessness that is only too apparent in many of the works of the period under observation. It was the want of this moving spirit that led to the gradual misunderstanding of the principles and the misapplication of the essentials of architecture that can be discerned all too clearly in the works of even a few years ago.

Architectural Conjuring.

It was surely, he thought, the recognition of this lack of definite aim that led to the establishment of various schools of thought and writing, which, by the extraordinary fervour and bitterness with which they assailed their opponents, have done so much to belittle the architect in the estimation of the public, and so little to rectify, except in a cumulative sense, what they knew to be wrong. It was the outcome of this lack of definite aim that led to the practice of extensive travel and study, whereby we have been involved in various gymnastics with the principles of our art. Thanks to the practice, the architects of a few generations ago became adepts in conjuring with the details of architecture.

In Praise of the Home School.

Now, though the past has been gloomy, the clouds that have lowered on our architecture are lifting to reveal a horizon rosy with the dawn of enlightenment and full of good promise for the future. The author supposed that the advocates of foreign travel and study would claim the credit for this. But he thought this pleasing prospect resulted rather as the first-fruits of the school instruction in architecture so happily introduced by the foundation of this association. The system, to his mind, sets a definite aim before the student, even if that aim be so lowly as a desire to please his instructor, and the collective working it affords to an ideal, if it only be the personal ideal of the master, is a step in the right direction to promoting the spirit that educated the mediæval builder with such success. Foreign travel and study may have been necessary in the days when primary architectural education was only to be acquired in the form of pupilage to an individual master of more or less doubtful capacity, or willingness to teach, but he contended that the result of the practice on the development of our architecture was disastrous. He therefore asked his hearers to say that at the present time foreign travel and study are not essential, and, from their own knowledge and experience rather than from this advocacy, to agree that they retard the development of a national style.

TRADE AND CRAFT.

The "Hue" Fire.

The barless grate possesess indisputable advantages over the old high treble-bar style of grate, which permits the escape of a considerable quantity of heat unused. The difficulty of substituting the new type for the old, however, probably accounts for the existence of many quite out-of-date fire grates. The introduction of the "Hue" fire obviates this impediment, and renders the substitution a matter of convenient facility, unattended by the sometimes unsightly appearance consequent upon the removal of an old grate. The "Hue" fire consists of a low metal basket, in various finishes, with a removable pan beneath to catch any small quantity of ash that may find its way through. The fire is clean in use, and during the summer months, if desired, may be bodily removed. The sole proprietors of the "Hue" fire are Messrs. Young and Marten, Ltd., Stratford, London, E.

The Dust Nuisance.

The dust nuisance, with its attendant evils, is being made the subject of a systematic attack, and there are hopes of its permanent extermination. The fallacy of attempting to remove dust by the simple application of a brush has long been realised, and it is encouraging to note the determined efforts that are now being made permanently to remove the injurious settlement and its insidious germs. Three systems are at the moment being operated by Messrs. Waygood and Co., Ltd., of Falmouth Road, Great Dover Street, S.E., the first being a hydraulic vacuum cleaner, and suitable for installation where high pressure water is available. The machine itself is contained in a small box, where pipes, concealed from view, are carried to any desired room. The only part visible when the apparatus is not in use is a small brass cap in each room, to which is attached a length of flexible hosing. The suction caused by turning on the water carries the dirt and dust completely away to the drain with the exhaust water or waste. No attendant is required, the operation being automatic.

The second system is almost identical, except that electricity, gas, steam, petrol, or other motive power is substituted for high water pressure.

The third system is a portable apparatus, steam being the generating force, and the fuel ordinary paraffin. Many hotels, theatres, public buildings, etc., have been provided with one or other of these systems.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editor desires to give notice that answers to the following enquiries can no longer be undertaken :—

(1) Enquiries about buildings to measure in particular towns and districts.

(2) Enquiries embodying questions which have been set in examination papers.

(3) Enquiries which ask for or require the preparation of special designs as part of the answer.

Book on Joinery.

A. LE C. (LONDON, N.W.) writes: "Can you refer me to a practical book on 'Ships' Joinery?'"

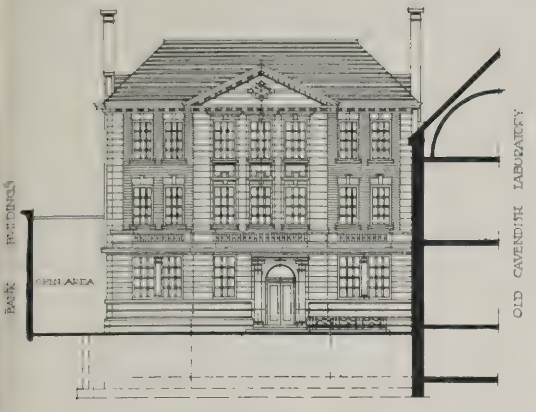
—We know of no book dealing particularly with the subject, but "Modern Practical Joinery," by George Ellis, published by B. T. Batsford, 94, High Holborn, at 15s. net., an exhaustive treatise, will probably prove useful to our correspondent.

Withdrawal of Tender After Acceptance.

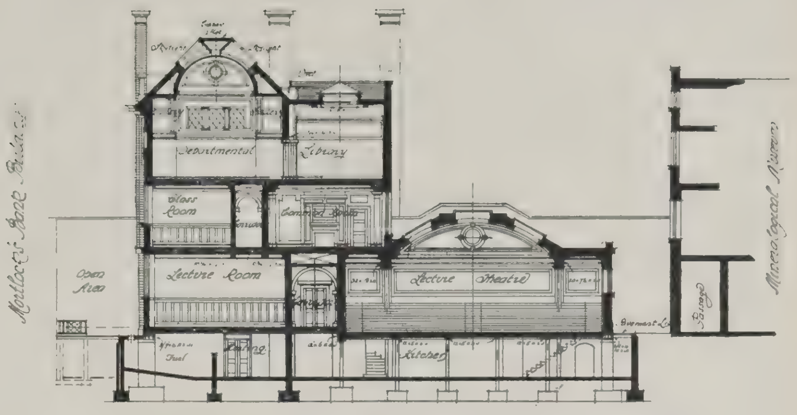
"PLASTER" writes: "I recently let the contract for the erection of three houses to a local builder as a sole contract. The client shortly afterwards notified me that he wanted the plastering to be given to a certain local firm. The sole contractor said that this particular firm was £10 higher than the lowest estimate for plastering which he had received; and, as he had not then accepted the lower man, it was arranged that the sole contractor should accept the higher firm, and the difference in price be added to the contract as an extra. This was done, and in the priced bill of quantities the sole contractor added £10 as a separate item to the summary. Since then the accepted plasterers have withdrawn their tender. Can I hold the sole contractor to the price in his estimate, which agrees with the amount in the signed contract, or can he claim to do it at the increased price? Or, again, can I take it out of his hands altogether?"

—If the sole contractor accepted in writing the tender of the plastering firm, which by direction of the employer you instructed him to accept, the subsequent withdrawal of that tender would not avail, and the plastering firm is legally bound to carry out the tender as accepted, and you could call on the sole contractor to enforce this. If no effective acceptance took place, however, or if the said withdrawal has been acquiesced in by the sole contractor with the consent of the employer (he has no right to acquiesce without it), the bargain is cancelled, for it is clear the arrangement by which the sole contractor was to receive an extra of £10 was conditional upon the work being executed by a certain firm. Further, it was undoubtedly implied that the sole contractor was to be given £10 extra, the whole of which sum he was to pass on to a certain sub-contractor. It was not to be for his own benefit. The fairest course under the circumstances is to agree with the contractor to let the employer select some other firm among those who originally tendered for the plastering, and adjust any difference there may be so that the sole contractor is not out of pocket by the change. In answer to your specific questions, however, you cannot take the plastering amount out of the sole contractor's hands unless it is a provisional sum. The alterations to which you refer are not a sufficient ground for putting the work up to re-tender: they should be adjusted by the surveyor at completion. The contractor is bound by his original accepted tender on which he signed contract, and of which the amount he originally included for plastering formed part, and you may require him to proceed to carry it out, at the same time cancelling the arrangement as to the £10 on the ground that he is unable to carry out his undertaking to employ a certain firm of sub-contractors.

A. G. W.



WEST ELEVATION



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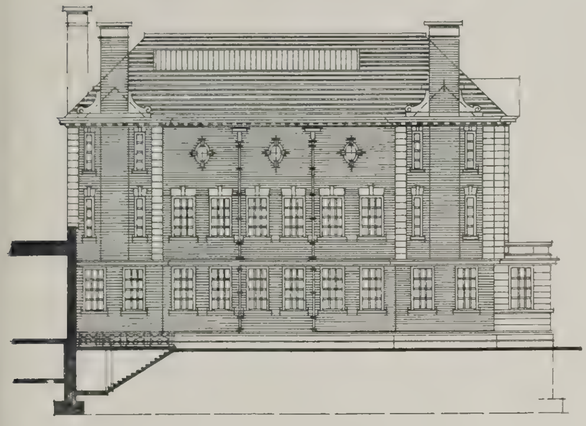
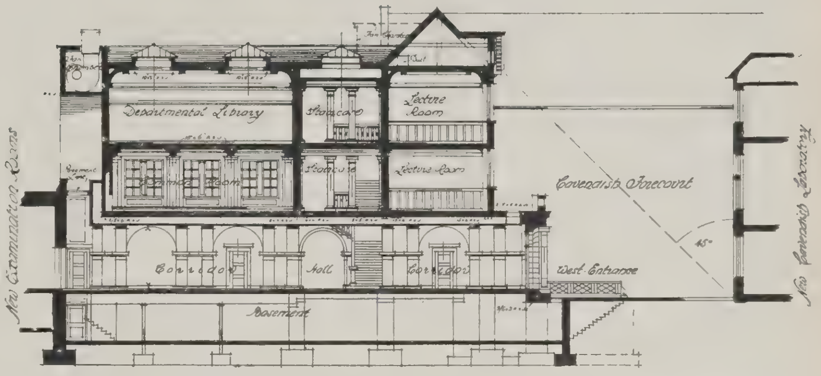


NORTH ELEVATION

SCALE OF FEET



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Hubbard & Moore Architects 2 Fenchurch St. E.C.

Scale of Feet

NEW LECTURE ROOMS AT CAMBRIDGE

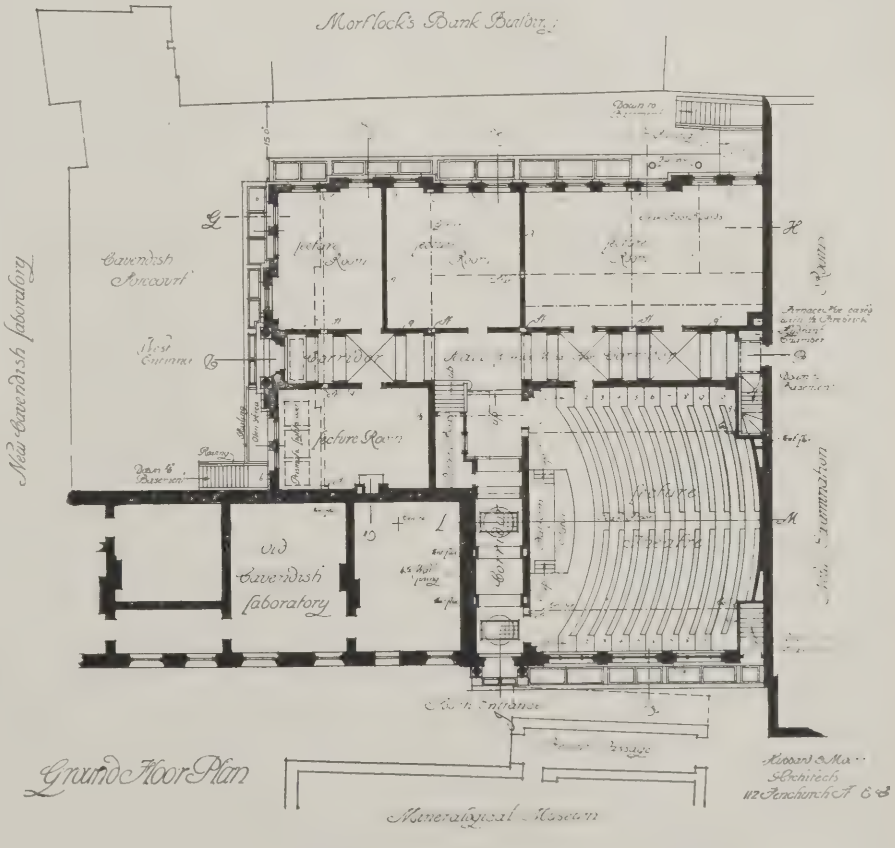
We publish in this issue some drawings of the new literary lecture rooms and departmental library now in course of erection on a site at the rear of Benet Street, Cambridge, from designs by Mr. George Hubbard and Mr. Albert W. Moore, FF.R.I.B.A., architects, of London, E.C. The drawings, it will be noticed, are exceptionally well done, the details of the construction being shown with admirable lucidity; and the building is one that will take a prominent place among the modern additions to Cambridge.

The accommodation comprises a lecture theatre, eight lecture rooms, five class rooms, a professors' common room, and a library, which is subdivided for departmental purposes. The materials used are Weldon stone, hand-made 2in. Stone Court bricks, and hand-made tiles from the same brickfield.

The site is a very confined one, and the difficulty of providing properly arranged accommodation necessitated the adoption of a steel-framed structure internally, but the danger of sound transmission has been minimised by using wood floor joists and 2in. hollow cast plaster slabs laid between the joists for pugging purposes.

The heating and ventilating has been made the subject of special study, and the system adopted is being carried out by Messrs. Crittall and Co. The heating is by low pressure hot water hand-controlled radiators, over which fresh air is passed and warmed. The extraction of vitiated air is by noiseless electric fans which draw the air through trunks at the back of continuous ventilating friezes.

Mr. W. Sindall, of Cambridge, is the contractor.

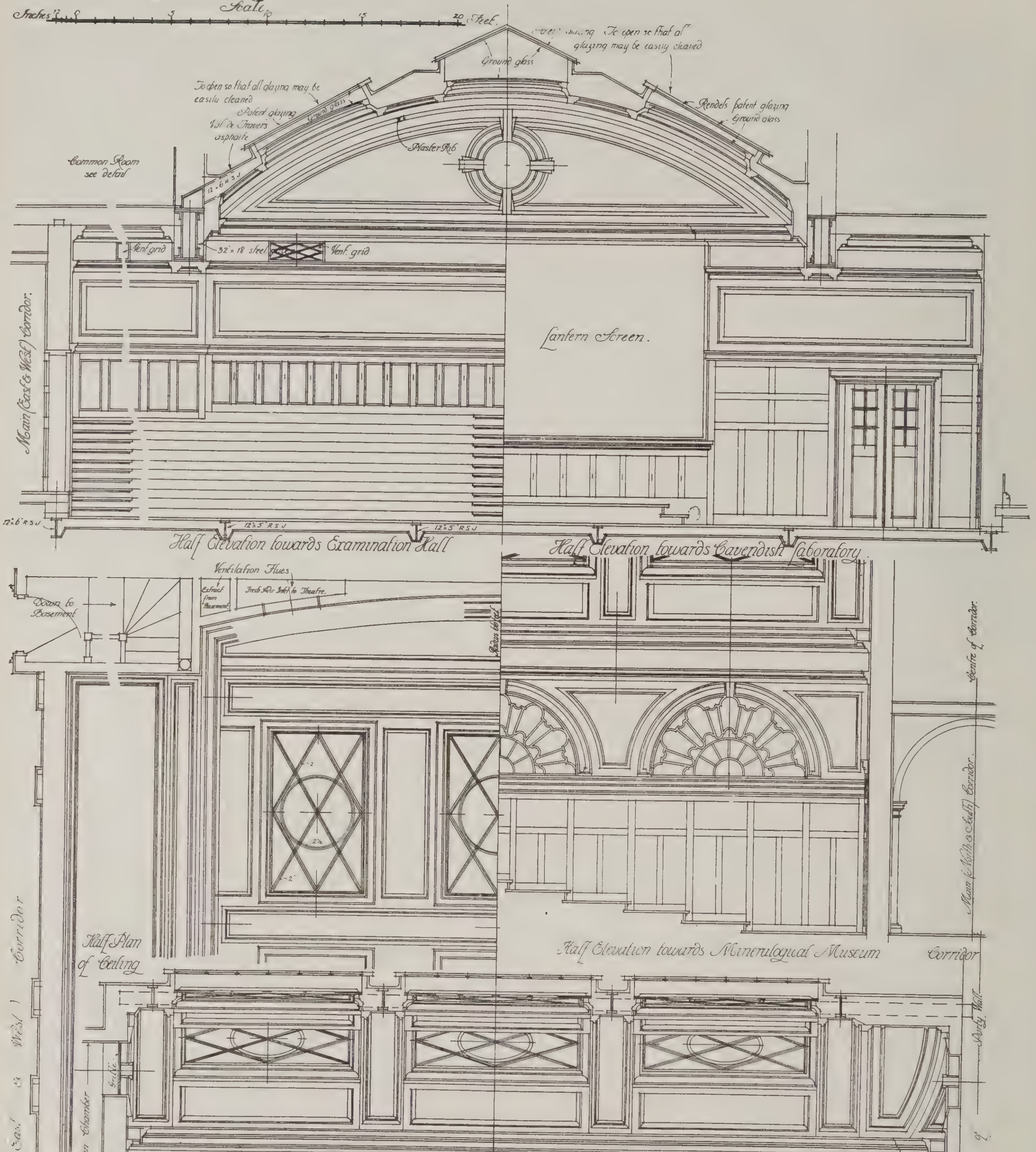


Ground Floor Plan

Hubbard & Moore Architects 112 Fenchurch St. E.C.

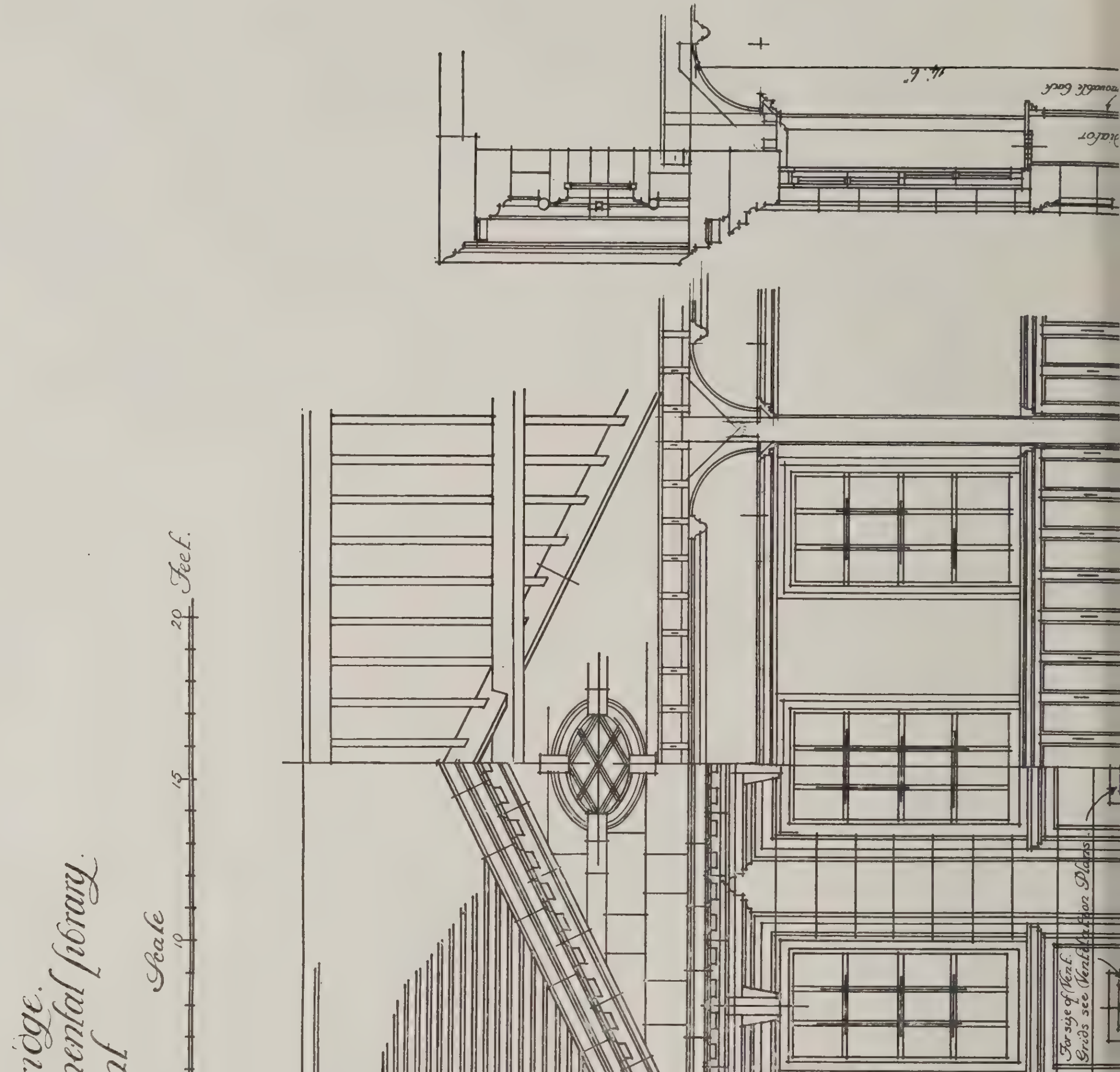
Scale of Feet

NEW LECTURE ROOMS AND DEPARTMENTAL LIBRARY, CAMBRIDGE.
HUBBARD AND MOORE, FF.R.I.B.A., ARCHITECTS.

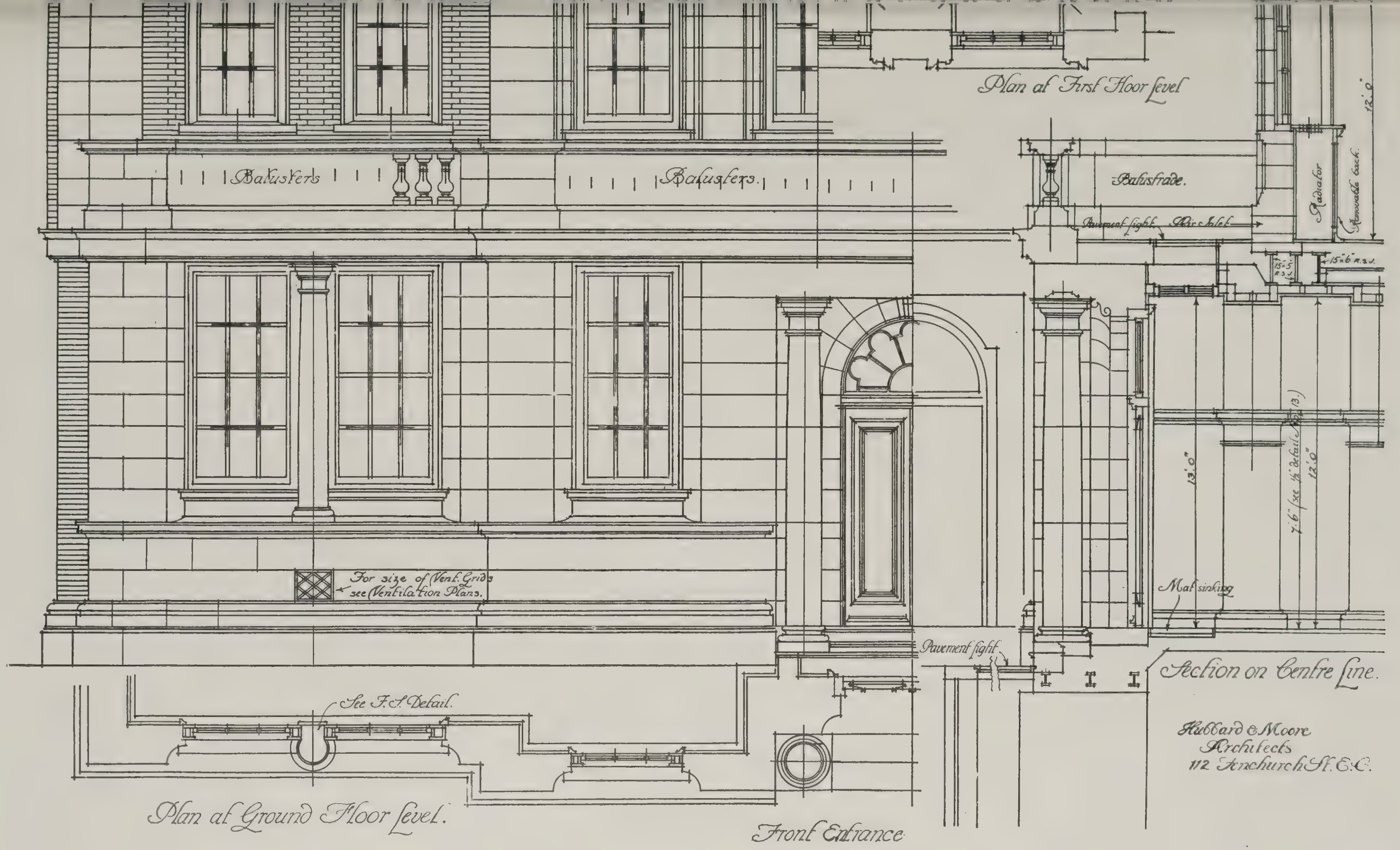


NEW LECTURE ROOMS AND DEPARTMENTAL LIBRARY, CAMBRIDGE: DETAIL OF LECTURE THEATRE.
HUBBARD AND MOORE, FF.R.I.B.A., ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



University of Cambridge.
New Lecture Rooms and Departmental Library.
Detail of West Front



HUBBARD AND MOORE, FF.R.I.B.A., ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

ST. PAUL'S CATHEDRAL AND THE PROPOSED BRIDGE.

In a letter to the "Times," Mr. Mervyn Macartney, surveyor to St. Paul's, recalls and emphasises the many warnings that have been issued officially, and otherwise, from time to time regarding the safety of the cathedral. He says, "The great danger is, of course, draining the water from the subsoil. This was pointed out in a report, issued jointly in 1831, by Cockerell, surveyor to the fabric, George Rennie, the engineer, and Robert Smirke, the architect, protesting against the excavating for and the building of a sewer which was to run on the south side of the cathedral and parallel to it. The danger was averted, thanks to the Corporation's accepting the views expressed by these experts.

"Longman, author of 'The Three Cathedrals of St. Paul's,' in 1874 utters the same warning. More recently, in 1890, the question of the Cathedral's safety was again raised on the promotion of the Central London Railway Bill, and Mr. Penrose, then the surveyor to the fabric, showed in his report that it would be fatal to make excavations near the building. He wrote that 'these foundations are laid upon a comparatively thin bed of marl, below which there exists more than 40ft. of loose sand and gravel. It must also be remembered that St. Paul's Cathedral is erected on the top of a considerable hill. If the water which is mixed with these strata was withdrawn the result might, in my opinion, be exceedingly serious, as this must cause a very considerable collapse in the strata themselves.'

"The proposed construction in 1901 of a tube railway up Ludgate Hill and Carter Lane was another threatened danger, which was, however, fortunately abandoned.

"Lastly, I would draw attention to the report 'on the condition of St. Paul's Cathedral,' issued in 1907 by Mr. Thomas Collcutt, Sir Aston Webb, and Mr. John Belcher and the present writer, from which I quote the following extract:—'After mature deliberation, and a thorough examination of the Cathedral and its foundations, we are of the opinion that in spite of these settlements there is no immediate necessity for any extensive remedial measures to be undertaken; but this conclusion is based on the assumption that the present conditions of the subsoil and the present water level will be maintained.'

"This report owed its existence to the fact that it is proposed to construct a sewer in proximity to the Cathedral. As I mentioned in my last letter of November 21, the London County Council considerably changed its route in deference to this protest, backed as it was by the Archbishop of Canterbury, the Bishop of London, and the Lord Mayor—the Trustees of St. Paul's.

"In protesting once more against the proposed tram-subway at the east end of the Cathedral, I desire to draw attention not only to the frequency, but also to the high authority of the warnings with regard to interference with the stability of the Cathedral, and to plead for their proper consideration.

"It is not reassuring to find that buildings and churches on the line of the tube railways have shown undoubted signs of collapse. The most apposite case is that of Holy Trinity Church, in Kingsway, which was condemned as unsafe, and pulled down. The fractures in the building extended to no less a distance than 90ft. from the tram-subway, which is at a depth of 24ft. from the road level, and about 10ft. below the foundations of the church. The conditions at St. Paul's are almost identical. The proposed subway will come within 73ft., and the excavations will be about 7ft. below the foundations of St. Paul's. It is contended that, the line of the subway being through existing sub-basements, the conditions in the subsoil will not be materially altered. But there is a vast difference between isolated cellars and a continuous tunnel.

"If, in the bridge scheme, the linking up of the north and south tramways of the London County Council is the chief consideration, then I should suggest the purchase of part of the Blackfriars railway bridge (two out of the 12 tracks), which might be used for a tramway by linking it to that already existing at the south end of Blackfriars Bridge, passing northwards over the river through Ludgate Hill and Holborn Viaduct Stations to Snow Hill Station. Thence the tramway might emerge from its subway into Farringdon Street, and, again running underground to Aldersgate Station, rise from that point to reach the terminus in Aldersgate Street.

"One great advantage of this scheme would be that two-deck cars could cross north and south, which would not be possible by the proposed St. Paul's route, which, moreover, does not really effect the end in view—namely, the linking up the nort hand south systems, although this may be carried out eventually. A dead-end so near St. Paul's would have its own special drawbacks."

DEPUTATION AND PETITION FROM THE INSTITUTE.

At the last meeting of the Court of Common Council, Colonel J. W. Beningfield introduced a deputation of the president and council of the Royal Institute of British Architects, who presented a petition with reference to the new road and bridge across the Thames (for which Parliamentary sanction is about to be sought) urging the advisability of obtaining architectural advice upon the whole proposal. The petition was signed by Mr. Leonard Stokes (president of the Institute), Mr. Reginald Blomfield, A.R.A., Mr. A. W. S. Cross, Mr. E. Guy Dawber and Mr. Ernest Newton, and a long list of members and supporters.

In reply to Mr. W. H. Thomas, the president admitted that the Institute had threatened to oppose the scheme for the bridge in Parliament.

Mr. Thomas: For what reason are you going to do that?

Mr. Stokes: I assume you are going to make a mistake, and I want you to get the best architectural advice you can.

Mr. Thomas: Do you suggest that the plans should be submitted to your society or that we should employ some architect nominated by your Institute?

Mr. Stokes: I do not suggest anything except that you should get the best architectural advice.

Alderman Sir Henry Knight: Do you imagine that this Court would proceed in such a manner without being architecturally advised.

Mr. Stokes: I understand that you have gone a long way without it.

In reply to other questions, Mr. Stokes said the Institute wanted to get an architectural opinion upon the whole scheme, and not on the details after the scheme had been decided upon. He admired London Bridge, which, he believed, was built by an engineer, but he thought he had architectural advice. He did not admire either Blackfriars or Tower Bridges, although they were constructed upon the instruction of architects. He did not admit that the Corporation, who were paying for the new bridge, were the best authority to fix the scheme of the structure, and he thought it would be extremely unwise of them to get to work without professional advice.

Deputy Wallace: Then is it your opinion that the architect should be first consulted, not the engineer?

Mr. Stokes: No, I think they should both act together.

Deputy Ellis: What is it you seriously object to, the approaches or the bridge?

Mr. Stokes: We do not complain of anything.

Deputy Edwards: Should we have consulted your Institute?

Mr. Stokes: No. I do not think they would be the proper people to give an opinion.

Deputy Ellis: Are you aware that the object of the bridge is to facilitate traffic?

Mr. Stokes: One of the objects. In reply to other questions, Mr. Stokes said he thought that as the scheme had been deposited in Parliament, it was too late to take architectural advice upon that scheme now.

On the motion of Col. Beningfield, the petition was sent to the Bridge House Estates Committee for consideration and report.

THE FRENCH INFLUENCE ON SCOTTISH ARCHITECTURE.

Under the auspices of the Glasgow and West of Scotland Centre of the Franco-Scottish Society, Mr. Alexander N. Paterson, M.A., F.R.I.B.A., recently delivered a lecture at Glasgow University on "The French Influence on Scottish Architecture."

Mr. Paterson said that all building during the Middle Ages was towards one of two ends—ecclesiastical or military—a brief survey of the former in France, England, and Scotland showing affinity of development up to the close of the fourteenth century. The fifteenth century brought divergence, perpendicular style in England, flamboyant in France, while in Scotland there was a special development, Anglo-Norman in origin, Scottish in character and sentiment, with French influence shown in various directions. An analysis of the Scottish work in question was given, with illustrations from such buildings, among others, as St. Machar's Cathedral and King's College Chapel, Aberdeen; Paisley Abbey, the cathedrals of Glasgow, Dunkeld, and Iona; churches of Haddington, Perth, St. Monance, and later Fifeshire examples. There was historical and documentary evidence of French assistance at this period, such as the King's master masons, the inscription of John Morow at Melrose, "born in Parysse certainly," and the work attributed to him there and elsewhere throughout Scotland. The Reformation and consequent stoppage of church building saw the art of the Scottish designer and builder transferred to another channel—that of the house. A description of Scottish domestic architecture from the fourteenth to the seventeenth century was given, showing its indigenous origin and growth till towards the end of the fifteenth century. The military architecture of Western Europe, with the adoption of the fortress type in later houses in France and Scotland, and its abandonment in England, was afterwards touched upon. The peel tower was the root idea of the Scottish house, with such developments in plan and design as salient wings in plan, crow-stepped gables, and chimney stacks, angle turrets, corbelling, and dormer windows. The close analogy in growth, expansion, and disuse of the "Scottis toung" and domestic style of architecture was described, and the lecturer afterwards dealt with the late introduction of the Renaissance element, at first in the Royal Palaces of Falkland, Stirling, and Linlithgow, under James V. on his marriage with Madeleine, daughter of Francis I., sponsor of the "François Premier" style in France, and afterwards in the details of many houses of the seventeenth century. Towards the close of that century the change affected the arrangement in plan and mass, as in Heriot's Hospital, Drumlanrig, and others. In conclusion, Mr. Paterson spoke of the disuse in the eighteenth century of the "Scottis toung" and house type under Sir William Kinross and the elder Adam, and the revival due to the influence of Sir Walter Scott and other writers of the older manner in recent times.

NEWS IN BRIEF.

A Diary.

A small pocket diary has reached us from the Saxon Portland Cement Co., Ltd., of Cambridge, admirable alike in its get-up and arrangement.

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New Y.M.C.A. Premises at Swansea.

New premises for the Y.M.C.A. are to be built on the site of the Longlands Hotel, St. Helens Road, Swansea, from designs by Mr. Glendinning Moxham, F.R.I.B.A., of Swansea, at a cost of about £10,000.

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Palladium Palace of Varieties.

The Palladium, London's new variety theatre, which has been built on the site where once stood Hengler's Circus, is said to be the largest building of its kind in the kingdom, seating 5,000 people. Its stage proscenium opening is the biggest in London, being 50ft. in width, and the stage itself is 90ft. deep. Not a single pillar intervenes between audience and stage in any part of the building. The first performance will be given on Boxing Day.

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New Asylum for Gateshead.

At Gateshead, on December 1st, a Local Government Board inquiry was held with regard to the application of the Corporation for power to borrow £114,000 for a new lunatic asylum. The Town Clerk said the applicants were compelled to build because the Durham County Council had given notice to the Corporations of Gateshead and South Shields to terminate the existing arrangement, by which lunatics from the two county boroughs were treated at the Sedgefield Asylum. A suitable site had been selected at West Duddo. It was estimated that the total cost of the proposed asylum would be about £140,000, and it was expected to have it completed in about three years. The estimated cost of furnishing was £50,000.

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Church Woodwork.

Mr. Frowde is adding to the "Church Art in England" series another book by Mr. Francis Bond on wood carving in English churches. An earlier volume was devoted to misericordes; in the second Mr. Bond deals with stalls and tabernacle work, bishops' thrones, and chancel chairs. A third volume on wood carvings is being written by Mr. P. M. Johnstone, and will deal with church chests, almeries, organ cases, doors, alms, and collecting boxes.

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The Master Carvers' Association of London.

The annual dinner of this association was held recently at the Holborn Restaurant. The president, Mr. H. W. Barnes (of Messrs. Farmer and Brindley), proposed the toast of "The Guests and Visitors," to which Mr. T. Stirling Lee replied. The toast of the association was proposed by Mr. C. Harrison Townsend, Mr. W. Aumonier, junr., the hon. secretary, responding. Amongst others present were Messrs. Lawrence A. Turner (hon. treasurer), W. S. Frith, G. S. Arrowsmith, W. D. Gough, J. Daymond, D. Daymond, J. E. Knox, E. Burton, and W. Aumonier, senr. (vice-president). The association was founded in 1897, and consists of employers of stone carvers, wood carvers, and modellers. Its objects are the promotion and protection of the interests of the above crafts in general, and the members of the association in particular.

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Hoxton Hall.

The new buildings for the Bedford Institute Association at Hoxton Hall, Hoxton Street, London, N., are now nearing completion. They comprise two large club rooms for working girls on the second floor; on the first floor, a class room, which will also be used as a committee-room, and has been decorated with imitation half-timbered work and some Tudor panelling removed from the old buildings on the site; while on the ground floor are a small hall for lectures, drill and games, and a "medical mission" room. Bathrooms, lavatories, and deep sinks for clothes washing are also provided, together with kitchen and scullery accommodation for the social side of the work. The basement is arranged as a boys' club, with separate rooms for boys of various ages, with shower and slipper baths. Advantage has been taken of the alterations to remodel and redecorate the existing buildings of Hoxton Hall, the whole of the work having been carried out by Messrs. John Grover and Sons, of New North Road, from the designs and directions of Messrs. Lovegrove and Papworth, of 374-8, Old Street, E.C.

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London's New Sewer.

About one-fourth of the work connected with the construction of the Southern Low Level sewer No. 2, which is now being carried out by the London County Council at a cost of £481,553, has been completed. The sewer starts at Battersea Rise, passes near Clapham Common, crosses the Camberwell New Road, continues partly under New Kent Road, and terminates at Deptford pumping station, close to Greenwich Town Hall. The total length of the sewer is 42,460ft., the diameter varies from 5ft. 6ins. to 8ft., and the depth ranges from 70ft. near Clapham Common to about 22ft. near Southampton Street, Camberwell. About one-third of the length is being constructed in brick, the diameter being 5ft. 6ins. to 6ft. 6ins., and the remainder in cast-iron. In the latter case the sewer is formed of six segments and a key, and is lined with concrete and blue brick. Messrs. Griffiths and Co. are the contractors.

The Road Problem.

In a paper on "The Working of the Road Development Act, 1909," read before the Society of Engineers on December 5th, the author, Mr. Reginald Brown, A.M.I.C.E., F.S.I., M.Inst.M. and C.E., pointed out that to tar-macadamise the whole of the urban roads in England and Wales would cost very little more than at present if highway expenditure were equalised, but if this could not be done, then a contribution of £30,000 per annum would ensure the provision of "dustless roads" so far as urban main roads were concerned. Rural main roads at present need only be tar-dressed. The author also suggested that all roads should be classified as under:—First-class arterial streets—100ft. wide—all existing main roads contiguous to town areas. Second-class arterial streets—80ft. wide—all subsidiary main roads., i.e., those not contiguous to town areas. Third-class arterial streets—60ft. wide—all district main roads. Fourth-class arterial streets—40-50ft. wide—all minor district roads.

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Memoranda.

Mr. G. Lawton Brown, of 4, Market Place, Leicester, has taken into partnership Mr. Percy G. Jones, with whom he will continue to practise as architects and surveyors at the above address.

New gas lamps have recently been substituted in Regent Street, Piccadilly, Pall Mall, and neighbourhood, in place of the electric arc lamps previously employed for lighting these main West End thoroughfares.

The Westminster City Council has also adopted gas for street illumination in many of their main streets. The light is powerful without being painful, and has the very valuable characteristic of being fog-piercing to an unusual degree.

In connection with the article on Belfast Roof Trusses which appeared in our issue of November 23rd, we have received intimation that the address of Messrs. Butterfield was wrongly given, the correct address being The World's Galvanising and Tank Works, Shipley.

Messrs. Robt. Ingham Clark and Co., Ltd., announce that on the 20th inst. they intend to remove their city offices, and that on and after that date all communications usually sent to St. Helen's Place should be addressed to their new premises at Caxton House, Westminster, S.W. The telephone number will be "Westminster 92."

Mr. Reginald H. Spalding, A.R.I.B.A., of 36, and 37, King Street, Cheapside, London, E.C., announces that he has taken into partnership Mr. Norman T. Myers, A.R.I.B.A., with whom he has been associated in his practice at Watford for some years past. The style of the firm will be Spalding and Myers.

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The Control of British Timber Reserves.

The Agent-General for British Columbia recently estimated that fully 50 per cent. of British Columbian standing timber has passed into the control of American syndicates.

In 1906 and 1907 about 35,000 square miles of timber were staked, and this made the stakers responsible to the Government for ground rents aggregating £400,000 per annum. But those who had taken up the claims had for the most part no money, and they were forced either to cut and sell their timber, or to get rid of their claims. Then the shrewd American speculator saw his chance and seized it. Quietly but steadily American banks began buying British Columbian timber limits, and these deals are still in progress. In fact, some, who ought to know, hold that to-day 75 per cent. of British Columbian standing timber is held by rich Americans.

The denudation of the forests of the United States has proceeded at a gallop in the past quarter of a century. Twenty-four years ago timber in Michigan was only worth 1s. to 2s. per 1,000 feet on the stump; to-day such timber fetches 48s. to 60s., if any happens to be available. There, as elsewhere in America, the few timber belts left are held by rich men for the fancy prices which the approaching famine must bring.

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Removal Notice.

Owing to increasing business, and the desirability of having all departments under one roof, Messrs. Fenning and Co., Ltd., marble and granite merchants, late of 3, Salters Court, E.C., have removed to more convenient premises at Palace Wharf, Rainville Road, Hammersmith, W. Their new telephone numbers are 816 and 817 Hammersmith.

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New Technical Institute for Stoke.

The erection of the Pottery and Mining Institute in the new federated borough of Stoke-on-Trent, at a cost of £20,000, will be started at an early date. The scheme of instruction will provide for the teaching of mining, pottery making, and physical science. Part of the site will be set apart for the North Staffordshire Coalowners' Association, who will build a station to afford instruction in mine-rescue work for miners. The cost of the institute will be defrayed jointly by the Stoke Borough Council and the Staffordshire County Council as education authorities.

* * *

An Electric Theatre.

The Victoria Electric Theatre has just been completed in Becket Well Lane, Derby. This is one of the many buildings which have been erected in the principal towns in the Kingdom by the United Electric Theatres, Ltd., to the designs of Mr. J. H. Morton, F.R.I.B.A., architect. It has been designed for displaying animated pictures to the best advantage, and great precautions have been taken against film fires, the operating chamber being fireproof. The seating arrangements are of an up-to-date character, 800 tip-up chairs being provided. Messrs. W. Townson and Sons, Ltd., Bolton and London, were the building contractors.

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Sewage Disposal Schemes.

The Sewage Committee of the Heaton Norris Urban District Council have recommended that the plans prepared for the proposed extension of the sewage works on the precipitation system be cancelled, and that the hydrolytic tank system be adopted instead. The scheme is estimated to cost £3,000. The Handsworth Urban Council are entering upon the construction of sewage works at a cost of £9,600. The land for the outfalls and the disposal tanks has already been selected. The district is without drainage, and it is expected that the carrying out of a complete scheme as proposed will quickly lead to building and other developments.

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Protection Against Rust.

Professor Albert Lang, of Carlsruhe, Germany, has protected in Great Britain, Patent No. 21638 of 1909, a process for preventing rust on iron or steel. It has long been customary to produce on iron and steel a protective coating of oxide or sulphide of iron, but unless a high temperature is employed during the process a uniform colour is not obtained, and the application of heat is not possible in the case of bridges and other large surfaces. Professor Lang's method consists in treating the surface to be protected first with ferric chloride, an oxide being produced by reaction of the salt with the metallic surface. This is followed by the application of an aniline salt soluble in water, preferably aniline sulphate, which becomes intimately mixed with the oxide layer. The surface is then treated with chromic acid. The aniline black thus produced forms a strongly adhering colour with the oxide. The several ingredients may, however, be mixed together with linseed oil and the iron painted therewith.

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Blackpool Improvements.

In continuation of the big undertaking, begun eight years ago by the Blackpool Corporation, of widening the promenade from South Shore to the North Pier, and constructing a sea wall, the council have entered upon the work of completing the promenade widening scheme by constructing the unfinished portion between the North Pier and Cocker Street. The Highways Committee require some 4,000 tons of basaltic stone for this work, and a deputation from the committee has visited Portrush to interview the Irish quarry owners, who are on this occasion in competition with their rivals from the Rhine for the contract.

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St. John's Roman Catholic Church, Norwich.

In the completed Roman Catholic Church of St. John the Baptist, erected at St. Giles Gates, Norwich, by the Duke of Norfolk, which was opened last week, the nave, which was opened in 1894, was designed by Mr. G. G. Scott, son of the late Sir Gilbert Scott, who was succeeded 17 years ago, when his health failed, by his brother, Mr. John Oldrid Scott, who has been responsible for all the eastern part of the fabric. The church has a central tower with a nave of ten bays, a choir of four bays, and transepts of three bays each, the whole being groined with stone. The style is Early English, carried out with a profusion of marble, carving, and rich moulding. The whole cost, which approaches a quarter of a million, has been borne by the Duke of Norfolk.

KING EDWARD MEMORIALS.

The committee of the Windsor National Memorial to King Edward have selected Countess Feodora Gleichen to undertake the work of the statue of his late Majesty, which is to be erected in front of the hospital at Windsor which bears his name. The Countess is the eldest of the three daughters of the late Prince Victor of Hohenlohe, himself a well-known sculptor, whose statue of King Alfred the Great is at Wantage.

In response to an appeal issued by Major-General Lee for a fund to raise a memorial to his late Majesty in connection with the Cardiff Infirmary, the Marquess of Bute has agreed to subscribe 5,000 guineas. The Marquess's grandfather was one of the principal founders of the Infirmary, while his father, the late Marquess, gave the site on which the present infirmary buildings are situate, and also contributed largely towards their erection. At Windsor, at a meeting of the King Edward Memorial Fund Committee, the Mayor stated that up to the present a sum of £10,435 had been received, and the committee's expenses had amounted to £195. It was decided to add to the committee Mr. A. W. Mayo Robson, who has given £2,500 to the fund.

Sir Norman Baker, the Lieutenant-Governor of Bengal, presided last week at a meeting of the General Committee of the Bengal King Edward Memorial Fund at Belvedere, when it was unanimously resolved to erect an equestrian statue of King Edward on the best available site on the Calcutta Maidan. The Maharajah of Durbhauga expressed the hope that the statue would be ready to be unveiled by King George when he visits India in 1912.

ROMFORD GARDEN SUBURB.

With reference to the Town Planning and Modern House and Cottage Exhibition to be held at Romford Garden Suburb, a correspondent complains of the charges that are being made for sewer connections and water supply. "The connections," he writes, "will be put in by the road contractors at a uniform charge of £6 10s., if made before the roads are completed, and £9 if after the roads are completed. Water for building purposes will be laid on to each plot as may be required, at a cost of £3 per plot (£2 10s. for water, and 10s. for cost of supply pipe and tap). Where two or more houses only require one supply, the cost would be £2 10s. per plot, and 10s. for one tap only." The stipulated costs of the buildings are, our correspondent states :—(Class I.) : £500 for a house with two reception rooms, kitchen, scullery, larder, servants' w.c., and coals; four bedrooms, bathroom, and separate w.c.; and (Class II.) : £375 for a cottage containing one reception room, living-kitchen, scullery, larder and coals, three bedrooms, bathroom, and separate w.c. Our correspondent calculates that these prices (which are to include everything) allow, without reckoning sewer connection and water supply, only the cube cost of about 6¾d., and he therefore trusts that the directors may be induced to modify their demands.

CITY & GUILDS OF LONDON INSTITUTE.

The City and Guilds Institute, which was founded in 1878, incorporated under the Companies Acts in 1880, and received the grant of a Royal Charter in 1900, has just issued the annual report on the work of the Department of Technology, Exhibition Road, S.W. It is a volume containing more than 460 pages, with, in addition, more than a dozen folding plates, besides many illustrations in the text. The seventy-eight subjects in which the Institute conducts examinations include Painters' Oils, Colours, and Varnishes; Plumbers' Work; Slate Quarrying; Carpentry and Joinery; Brickwork; Plasterers' Work, Painters and Decorators' Work; and Builders' Quantities. At the examinations held during the year with which the report deals, 24,508 candidates were presented in technology from 418 centres in the United Kingdom, and of these 14,105 passed.

The reference made in former reports to the two main causes which impede progress in the technical instruction of artisans, and which prevent the results of the teaching from being as satisfactory as might be desired, is repeated with emphasis. The two causes in question are the difficulty of finding competent teachers, and the unduly large proportion of students who enter technical classes without the preliminary knowledge necessary to take full advantage of the instruction they receive. In the report on the Brickwork and Masonry examinations, the examiners remark that a number of the candidates evidently do not belong to the trade, and that many of the candidates are unable to apply the instruction they receive.

BOOKS AND PUBLICATIONS.

Modern Methods of Brickmaking.

The Cantor lectures delivered by Mr. Alfred B. Searle, Ph.D., before the Royal Society of Arts on April 11, 18, 25, and May 2, 1910, have been published as a pamphlet by the Society, price 1s. Dr Searle takes the briefest possible glance at the purely historical aspect of the subject, and wastes no time on the dispute as to whether the Assyrians or some Aztec race were the first brickmakers. He remarks more relevantly that some of the early Assyrian and Egyptian bricks are excellent specimens, even when judged by modern standards. To-day, in fact, after forty centuries, the same methods are still in use in various parts of the world, and it is only within living memory that the introduction of machinery into the brickmaking industry has effected a complete revolution. Brickmaking materials, and the various types of machines employed in the manufacture, are described in considerable detail, although the lectures do not profess to exhaust the subject, to which, however, it is a useful and interesting introduction.

Cantor Lectures on Modern Methods of Brickmaking. By Alfred B. Searle, Ph.D. London: Printed by William Trounce, 10, Gough Square. Fleet Street, E.C.

Fletcher's Quantities.

This book being in its eighth edition, extended notice of it would be superfluous. But little more need be said than that the present editor, Mr. Herbert Phillips Fletcher, is apparently indefatigable in revising and enlarging a work that grows in favour as steadily as it grows in bulk. He has adhered in the main to the method of taking off by trades, which, as he remarks, is the best system for students, although in practice it is often more convenient to take the trades and deductions for openings as they occur; examples of which method of grouping are exemplified in the book, a whole chapter, consisting of some twenty pages, being devoted to its elucidation. While, however the book, by reason of its clearness and completeness of exposition, is undoubtedly a boon to the student, its utility is not restricted to the needs of the mere tyro. It serves also as an admirable reference book for the seasoned practitioner, who, by means of a copious index, will be able to turn up instantly almost any item about which he may happen to be temporarily in doubt, especially as numerous formulæ, rules, and memoranda are included.

Quantities: A Text-book in Tabulated Form for the Use of Architects, Surveyors, and Builders. By the late Professor Banister Fletcher, F.R.I.B.A., etc. Eighth edition, revised and enlarged by Herbert Phillips Fletcher, F.R.I.B.A., etc., Barrister-at-Law. London: B. T. Batsford, 94, High Holborn. Price 7s. 6s. net.

SOCIETIES' MEETINGS.

Institution of Civil Engineers.

At the ordinary meeting, held on December 6th, Mr. Alexander Siemens, President, in the chair, it was announced that 22 members had been transferred to the class of members; that 113 candidates had been admitted as students; and the scrutineers reported the election of 21 members and 143 associate members.

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Society of Architects.

The following arrangements are announced: On December 15th, Mr. G. A. T. Middleton, A.R.I.B.A., Past Vice-President, will read a paper on "A Great London Improvement Scheme," and other papers announced are:—February 9th, Col. F. S. Leslie on "The Turned Lattice Work of Egypt"; March 9th, Mr. W. S. Frith on "The Relation of Sculpture and Carved Ornament to Architecture"; April 6th, Mr. Percy Macquoid, R.A., on "English Furniture"; on May 11th, Mr. A. Saxon Snell F.R.I.B.A., on "Hospitals." The subject for January 12th is not yet announced.

The Paint and Varnish Society.

The standing committee of the Royal Institute of British Architects considered for some time the question of the formulation of standards for materials used in the paint trade, with a view to assisting architects, and incidentally the reputable vendors, by the drawing up of some more precise definitions of paint materials, and a sub-committee was appointed, which eventually published a small pamphlet called "Notes on the Properties and Ingredients of Commercial Paints." On February 10, 1910, Mr. J W. Lovibond read a paper on "Colour Nomenclature" before the Paint and Varnish Society. The chairman, Dr. M. B. Blackler, stated that the very unsatisfactory methods at present in vogue for matching and recording colours, and the difficulty of obtaining any clear idea as to what was conveyed by any colour name was known to all, and if the system suggested by Mr. Lovibond was taken up and worked on by our manufacturers, very considerable benefit would result. It was also stated that it was too much to hope that this system of placing colours on a rational basis would be immediately adopted by our manufacturers; that at the present time no colour standards were known—in fact, they were in a state of continual change—when by fixing colour standards, and defining them by the tintometer, a practical system could be obtained which would be not only advantageous to the user, but also to the manufacturer. On these two considerations, the Council of the Paint and Varnish Society has decided that the following subjects shall be discussed at the next meeting on December 15, at 8 p.m., at St. Bride's Institute, Fleet Street, London, E.C.:—(1) "Notes on the Properties and the Ingredients of Commercial Paints," published by the R.I.B.A. (2) "The Possibility of Introducing a British Standard Colour Card of Paints and Distempers."

The disccussion will be opened by the President, Mr. Gaston Depierres, and Mr. A. S. Jennings.

COMING EVENTS.

Thursday, December 15.

Society of Architects.—Col. F. S. Leslie, R.E., on "The Turned Lattice Work of Egypt."

Paint and Varnish Society.—Discussion: —(1) "Notes on the Properties and the Ingredients of Commercial Paints," published by the R.I.B.A. (2) "The Possibility of Introducing a British Standard Colour Card of Paints and Distempers." 8 p.m. (1) will be opened by Mr. Gaston Depierre, (2) by Mr. A. S. Jennings.

Concrete Institute.—Mr. Thomas Potter on "General Concrete Practice," Royal United Service Institution, Whitehall, S.W. 8 p.m.

Friday, December 16.

Institution of Civil Engineers.—R. N. Mirza on "Mathematical Deduction of the Most Economical Ratio of Reinforcement for Reinforced-Concrete Structures." 8 p.m.

Thursday, February 9.

Royal Society of Arts.—Mr. R. F. Chisholm, F.R.I.B.A., on "The Taj Mahal and Its Relation to Indian Architecture." 4.30 p.m.

FEDERATION NEWS.

Cardiff.

The monthly committee meeting of Cardiff Master Builders' Association was held at the association offices on November 17, the president (Mr. S. Shail) in the chair.

Mr. W. Thomas called attention to the recent Conference with the Chancellor of the Exchequer, and a discussion ensued as to how the Act would operate in certain cases in which it was feared that builders who had acquired land adjacent to villages for the purpose of erecting houses thereon when the district had developed sufficiently, would suffer loss through their foresight and enterprise. Mr. W. Thomas undertook to lay any points for elucidation before the Administrative Committee, and it was understood that the members would avail themselves of his offer.

The secretary read correspondence with the Neath Association on the subject of water rentals for houses in course of erection, and builders' yards, which was approved, and he was instructed to urge upon the Neath Association the desirability of becoming affiliated with the South Wales Federation, and thus be able to obtain all the benefits of combination.

The secretary reported that Cardiff and District Builders' Association was desirous of affiliating with our association, with a view of taking joint action in all matters in which the two associations are mutually interested, and it was left to the president, together with Mr. W. T. Morgan and the secretary, to prepare a scheme of affiliation, and submit same to the next meeting for consideration.

Mr. J. E. Turner reported interview with the Public Works Committee on October 27th, as to apportionment of private improvement charges on flanks of houses. The best thanks of the association were given to the members of the deputation who waited on the Public Works Committee, for laying a very substantial grievance before them in the interest of all the builders in the city.

The secretary called attention to the extract in the local papers, from which it appeared that the award in the recent arbitration between the journeymen painters in Swansea and their employers had just been received, and provided that the men should receive from February 1st next an advance of ½d. per hour to 8½d.

The secretary also reported that the Swansea plasterers intended tendering six months' notice with the object of securing alterations in the rules and increased wages.—I. Watkins, Secretary.

Manchester, Salford and District.

The quarterly meeting of the general committee of the Manchester, Salford, and District Association was held at the Boardroom, National Buildings, St. Mary's Parsonage, Manchester, on November 23rd, the president (Mr. Harry S. Daniels) in the chair.

The half-yearly report, as drafted by the secretary, was duly recommended to the half-yearly general meeting for adoption.

Three new members were elected.

The secretary reported on the census of members at present being taken, so as to comply with the rules of the L.C. and N.W. Federation, which was considered satisfactory.

Matters arising on the subject of plumbers' trade discounts were referred to the Plumbers' Trade Committee of the Association.

It was decided to hold an association annual dinner about the middle of January, and a special committee was appointed to make arrangements.

The half-yearly general meeting of the association was held at the Association Boardroom, National Buildings, St. Mary's Parsonage, Blackfriars Street, Manchester, on November 24th. Mr. Harry S. Daniels (president) in the chair.

The half-yearly report as presented by the Committee was considered and adopted for circulation to the members.

From the report it appears that the association has increased its membership roll during the half-year by 16, and that the total number of members on the books to date is 207. The report indicates that the association has been doing excellent work during the past half-year in negotiating with operatives, architects, and public bodies generally. With two exceptions, the relations between the association and the various operative societies have during the half-year been very satisfactory. Notices are, however, reported to have been received from the operative plasterers and stonemasons for alterations in the working rules.

The recommendation received from the L.C. and N.W. Federation Stonemasons' Trade Committee to amend the worked-stone rule was considered at some considerable length, when ultimately it was agreed to make the following suggestion in place of the new rule submitted:—"No worked stone to come into this town from quarries or quarry owners, except sawn stone; that no restriction should be made where an employer sends worked stone to another town if the same rate of wages appertains. If higher wages are paid, then such employer shall pay the wages appertaining to the particular town to which the stone is being sent."

It was agreed to nominate Messrs. H. Matthews, J.P., W., Tinker, and Harry S. Daniels as candidates for the National and Northern Centre Councils.

Matters in connection with the inter-trading rule were deferred until a further report was to hand.

The President reported that it had been decided to amend the present daywork price list, and that a special sub-committee had been appointed for that purpose.—John Tomlison, Secretary.

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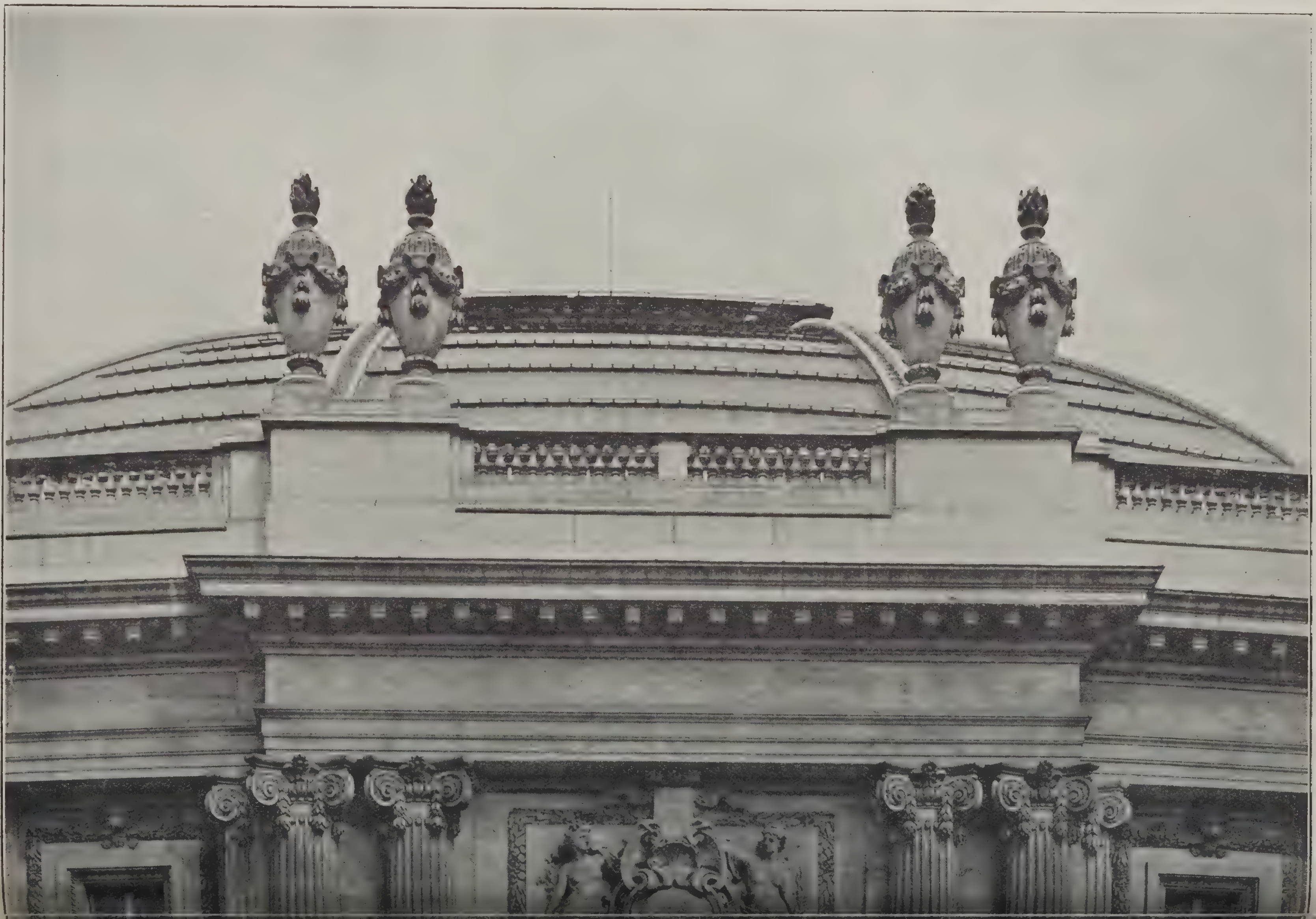
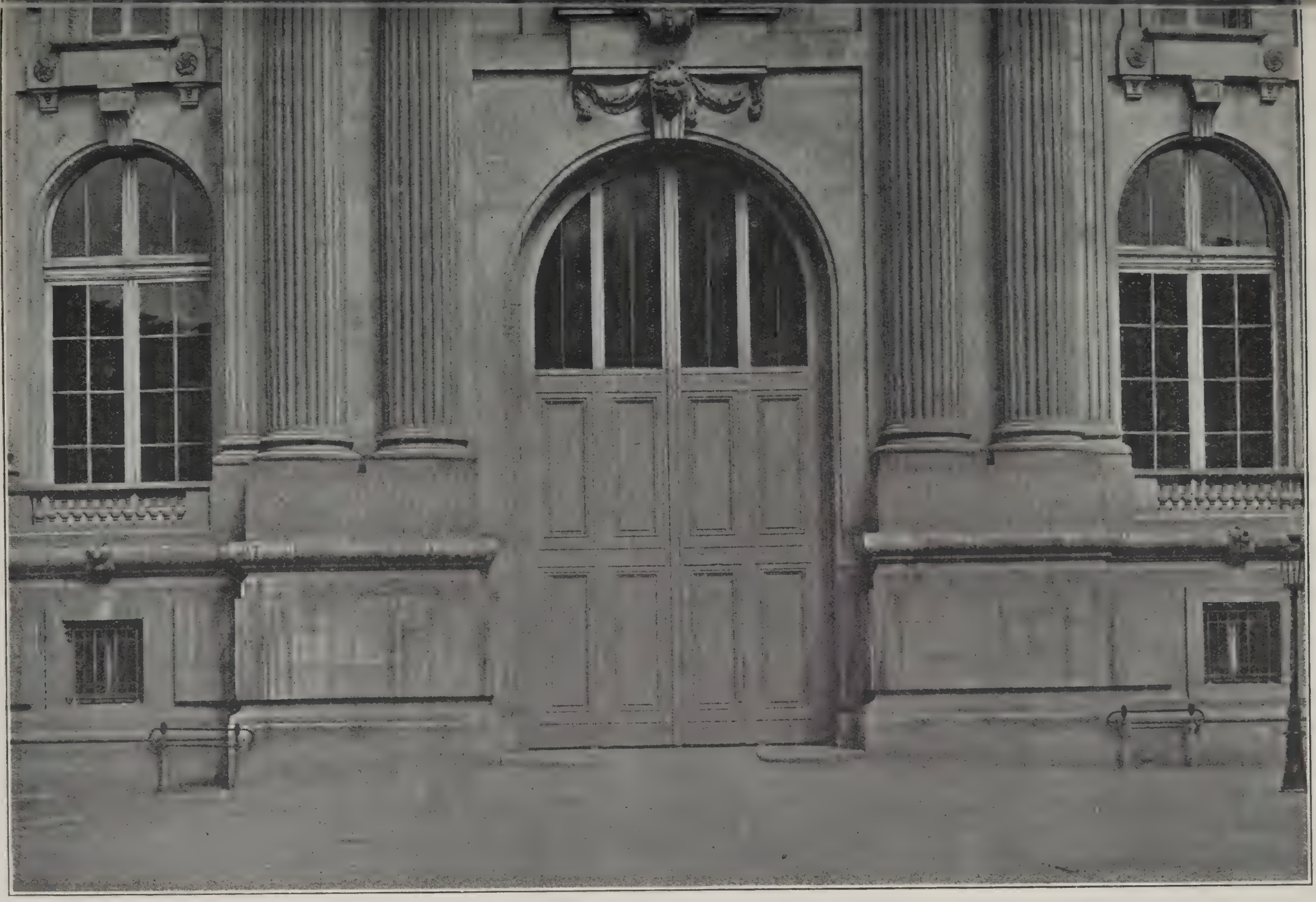
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *December 21st*, 1910.





THE GRAND PALAIS, PARIS: DETAIL OF RIVER FRONT M. DEGLANE, ARCHITECT.

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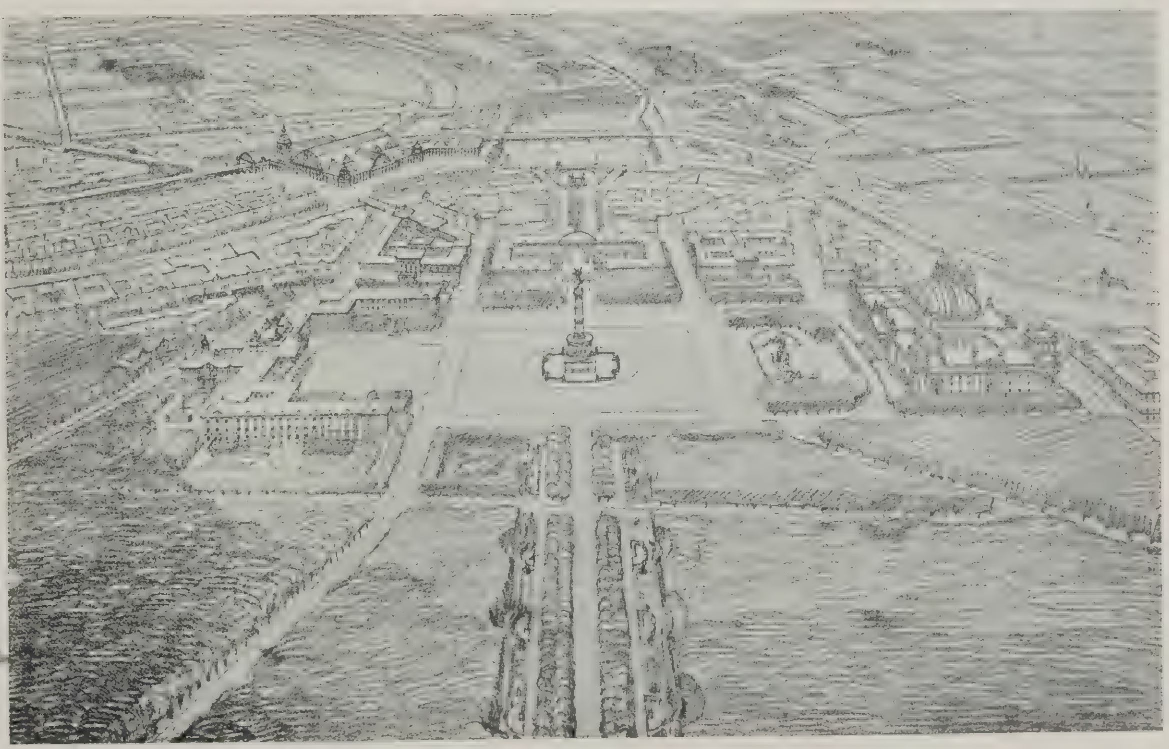
THE ARCHITECTS' & BUILDERS' JOURNAL.

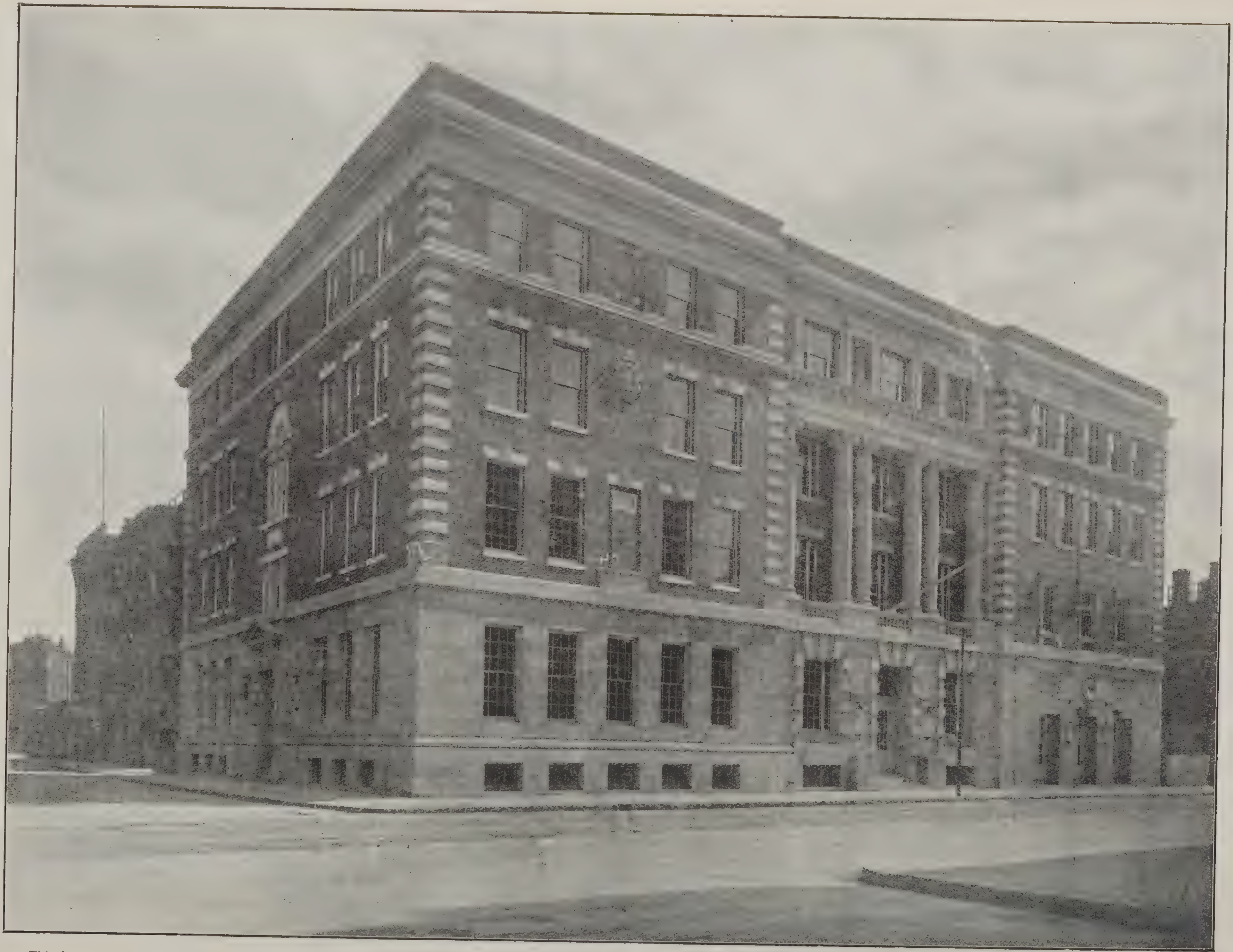
WEDNESDAY, DECEMBER 21st, 1910.

Volume XXXII. No. 829.



This design, which is generally typical of the proposals for the treatment of new places in Berlin, gives a good idea of the broad conception of town planning in Germany, and illustrates the tendency towards a more formal system in design.

SKETCH DESIGN FOR TREATMENT OF KÖNIGS PLATZ, BERLIN. BY BRUNO MÖHRING.



This is an excellent example of modern American work, exhibiting the characteristic qualities of good proportion and studied grouping. A detail drawing of the front is reproduced to a large scale on pages 650 and 651 of this issue.

THE FRANKLIN UNION, BOSTON, MASS. R. CLIPSTON STURGIS, F.A.I.A., ARCHITECT.

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 21st, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 829.

Note: The List of Contents will be found on Page V. of the front advertisements.

The Royal Academy Students' Work.

ON Monday and Tuesday last week was the annual show of work by the students of the Royal Academy; an exhibition open (as was duly announced in the daily Press) to the public, who seem to take marvellously little interest in it, the visitors consisting generally only of a few of the students and their friends. Yet such an exhibition ought to be of interest to all who care about art, for it is here that we may see the work of some of those who are the artists of the future, and some of whose names will probably become eminent hereafter.

The Travelling Studentship in Architecture has been gained by Mr. Adrian Berrington for a design for "A Loggia in a Public Garden, with a Concert-room opening from it." The Loggia is a very pure piece of Classic design, founded apparently on Palladio's Basilica, and shown in an excellent set of drawings; but we cannot say that it interests us very much. We feel more interested in some of the architectural designs for subjects which have evidently been set with the view of keeping the students in touch with actual problems of architecture, and which ought to be interesting to the outside visitor, who, as we said, neglects to attend the exhibition. The most important architectural award, next to the studentship, is the £25 prize for "A Design in Architecture." The designs exhibited are for various classes of building—we presume they are a selection only from the work done in the Upper School; but evidently the subject of "A Bridge over the Thames" has been set by the authorities, as there are several designs for this, and the first prize has been awarded to one of them, that by Mr. L. H. Bucknell for St. Paul's Bridge. Mr. Bucknell has wisely taken London Bridge as his model; his main design is almost a reproduction of it, except for the addition of bronze ships' prows on the cutwaters of the piers, and of lofty pylons, surmounted by equestrian groups, at the entrances to the bridge. The approaches are flanked by buildings for shipping offices, connected with the pylons by quadrant colonnades. It is a question whether this architectural connection of the offices with the bridge design was wise, as the scale is, almost unavoidably, completely different from that of the bridge; and there is the same mistake in regard to the triplets of bronze columns for the lamp-standards over the piers; very graceful in themselves, but far too small and delicate in detail to harmonise with the massive and colossal character of the bridge itself. The author should have taken a lesson from Waterloo Bridge, where the lamp standards (now happily replaced) do not imitate any architectural detail, but are simply iron-work of a monumental character. The author of another bridge design, No. 186 (the names of prize-winners only are given), has taken this hint, and his standards are much more satisfactory in consequence.

The next class of architectural designs are those for which prizes of £15 and £10 are given, and here again there seems to have been an endeavour to give a practical turn to the students' work, as the subject has been set of a "River Front to Charing Cross Station," several designs for which were exhibited, and the £15 prize went to one of these, by Mr. J. Mitchell Whitelaw. This is a fine design, treating the front with three great arches in masonry, with a massive Doric Order between; sophisticated Doric, not the pure article. We should think, from the detail generally, that the author had studied at, or been influenced by, the Ecole des Beaux-Arts; it is of a very French type, but it is very good work of its school, and would have a fine appearance from the river. The arches would look better without the filling of ponderous iron-work in their heads. The author boldly essayed the suggestion of river steps, flanked by sculptured lions, but he must have forgotten about the great rise and fall of the tide, which would render any such arrangement impossible. The £10 prize was awarded to Mr. Alan G. Brace for a design for the "River Front of a College Quadrangle"; a pleasing design in the accepted style of Collegiate Gothic, with a terrace in front of it. Among some designs for a front of offices in a London street, which appears to have been one of the subjects set, those numbered 215 and 226 deserved praise for simple and suitable design.

The silver medal for a perspective drawing (for architectural students only) was awarded to Mr. Augustus Bryett for a very good drawing of one of the Greenwich cupolas. We so often see the lines of domes in perspective badly drawn, that it is pleasant to contemplate a drawing in which they are scrupulously correct, and very cleanly drawn. The prize of £10 for "Original composition in Ornament" (modelled in plaster), which never seems to be very attractive, has this year drawn only one competitor, Mr. Mitchell Whitelaw, the author of the Charing Cross design; the main motive is a centre panel with a crab in the centre of a circular wreath, with which it assorts very oddly; the angles filled up with shells. This was perhaps intended as a detail for his Charing Cross façade; taken by itself, it is not very good, and we think the prize for it should hardly have been awarded.

Of the work in painting, that which is most closely connected with architecture is the "Design for the Decoration of a Public Building," which means the treatment of painting in a decorative manner. The defect which one frequently finds in these designs is that the decorative arrangement of the composition as a whole is not sufficiently considered, and this is to some extent the case in the prize design of this year, by Mr. R. Longstaff. The subject given was simply "Bathers," a title which allows plenty of latitude of treatment. Mr. Longstaff's design was unquestionably the one which showed most artistic power, but it is too scattered in composition. The artist has aimed at a powerful scenic effect by treating the scene as twilight with a great mass of dark trees in the rear, against which the nude figures in the foreground stand out strongly; but they are too much separated, and the powerful figure on the right, standing with her back to the spectator, makes a splash of light which rather disturbs the eye, and the other figures have not sufficient relation to it in the composition. The most decoratively composed design was that numbered 36, in which the composition was linked up by an architectural colonnade at the back; the author has been a good deal influenced by Leighton. One of the figures has always to be shown life size in a separate cartoon, and in several instances the cartoon figures were much better than the whole composition. Then there is the competition for a life-size cartoon of a single draped figure, which is generally interesting. The subject was, "A veiled figure suggestive of Silence"—a very good subject, giving some suggestion to the imagination. The prize has been won this year by a lady, Miss Margaret L. Williams, with a figure of great beauty and nobility of design; those numbered 44 and 48 also showed considerable power.

The sculpture for the principal prize in this class of work is generally on a high level. The subject given this year was "The Entombment," and Mr. Percy B. Baker, who gained the first prize, has treated it in a manner at once effective as composition and pathetic in expression. The two bearers of the body of Christ, and the figure of the Virgin Mary, are grouped so that their heads, bending over, form a kind of canopy over the head of the dead Christ, throwing it into shadow. Mr. Trent, the winner of the second prize, has also made a fine and expressive group with a different but well composed arrangement. The models submitted for this prize are always on a small scale, but both the prize designs are conceptions which would be quite worth working out on a life-size scale.

Landscape, on the other hand, is nearly always the least satisfactory of the students' work, and its comparative failure year after year suggests the conviction that landscape is really one of the most difficult branches of art. It is rare to find landscapes in these exhibitions which are not somewhat harsh and crude in colour, and generally speaking they are uncertain in the sense of composition. Moreover, there seems to be a tendency on the part of the Academy to award the prize rather for foreground work than for landscape composition in the broader sense. This is the case again this year; the subject for the Creswick Prize was "Wild Flower Growth by a River Bank," and the prize has been awarded to Miss Margaret Williams for what is not landscape, but an able and conscientious study of a bank covered with vegetation. She is to be congratulated on showing such all-round talent as to have won both this and the draped cartoon prize, but still one cannot regard this as "landscape" in the sense which the very title of "Creswick Prize" suggests, since Creswick was certainly a painter of broad landscape effect and not of floral detail. And then the element of composition in landscape comes in, which is of the highest importance; composition makes all the difference between a real landscape and a mere painting of a scene; and in the prize design this year, as in several previous years, there is really no composition; it is only a study of detail. We should have been more inclined to give the prize to No. 10, in which the foreground was well studied, but in which there was also something like landscape composition. There seems to be something wrong in the way landscape is regarded in the Academy.

Architecture in the Copyright Bill.

THE New Copyright Bill is very ably discussed in the "Law Times" of December 10th, by Mr. Harold Hardy, who, while recognising the need for a Consolidating Act, thinks that the framers of the Bill have chosen a dangerous course in attempting to deal in a single section with the different forms of copyright. The inconvenience of this method, he says, was pointed out to the Select Committee in 1898, when it was urged that confusion must inevitably result from an attempt to find any form of words which would be applicable to such different subject-matters as art, books, lectures, plays, etc. At that time there were seven distinct classes of copyright works, so that the inconvenience is considerably increased under the new Bill, which proposes to add to these works many other kinds of copyright property, comprising architectural works of art; works of artistic craftsmanship; pieces for recitation; choreographic works, or entertainments in dumb show; cinematograph productions; records, perforated rolls, and other contrivances for mechanical performance; and the common law right to restrain publication of unpublished works is also included in the statutory copyright. In several instances, it seems, the means of enforcing a right is by no means clear; and in particular, the case of architecture is a shocking example of an unfortunate method of arrangement—"the architect who is seeking redress for infringement of his copyright will find the provision inapplicable and illusory." As the Bill gives copyright in an "architectural work of art, the architect would reasonably conclude the he enjoys the exclusive right of reproduction, and that appropriate remedies for infringement are provided." Further, he will be pleased to note that one section bears the heading: "Remedies in the Case of Architecture," and "he will rest assured that his case, at any rate, has been specifically provided for. He has only to consult sec. 7, he fondly imagines, and he will learn at once what are his remedies for infringement of his copyright. But he will be disappointed to find that the heading is only the joke of the draftsman—the section which relates to 'Remedies in the Case of Architecture' contains no remedies at all." Then, as to the architect's rights, Mr. Hardy remarks that, as was pointed out some time ago in this Journal, "the Bill provides that the architect shall be the owner of the copyright, but he may not reproduce the work, nor can he prevent by injunction the work being reproduced. Anybody and everybody is entitled to make paintings, drawings, engravings, and photographs of the work with impunity, and apparently to derive any profit they can from the sale of such copies. It is difficult to realise what such a copyright is worth. What is its assignable value? Yet the Bill is intended to be a boon to architects, and to give effect to the international agreement to confer copyright protection upon architecture." As we said when the Bill was introduced, the drafting seems to leave the architect worse off that he was without it, since it would compel him to beg for permission to copy his own work, which is absurd

Draughtsmanship and Lettering.

THE question of draughtsmanship recently raised includes, though not specifically, the minor question of lettering. Generally speaking, the lettering of plans is simply abominable, and we are often amazed to find how often it happens that a skilful draughtsman is content to allow his strainer to be disfigured, and his drawing killed, by atrociously bad inscriptions, as if he had left this detail to the youngest assistant or the office boy. This bad practice, though sufficiently prevalent to call for frequent complaint, appears to be dying out, partly as a result of the increased attention that has been paid to eighteenth-century art, which includes the most beautiful alphabetical characters—written, engraved, incised, or painted—that have ever been produced in this country, and partly to the increased facilities for studying good examples. Among such collections, there is probably none that is more completely satisfactory than that which the late Mr. Lewis F. Day compiled with so much knowledge and taste, under the title of "Alphabets, Old and New"; and we are glad to note that a third edition, revised and enlarged, has just been issued by Mr. B. T. Batsford. The book contains more than 250 examples of alphabets that are all practical, and are mostly beautiful, derived from all ages and applicable to all crafts. Among them will be found several that are adaptable to the lettering of designs; and the architect who continues to disfigure his drawings with illegible or otherwise detrimental lettering, has no longer the excuse that good examples are hard to come by.

The Architectural Association.

THE paper read last week by Mr. Leonard Elkington, in support of the thesis "That Foreign study and travel retard the development of a National Style," was almost foredoomed to failure, for in the present advanced stage of facilities for, and rapidity of travel, it is preposterous to expect that architects will commence a policy of staying at home and shutting their eyes to foreign architecture, in order to keep their architecture "national." Besides this, as more than one speaker in the discussion agreed, it is a question whether there can any longer be separate national styles, when nations are no longer isolated as in the Middle Ages, and when everything that is built in one part of the civilised world is known in the others. As one speaker observed, the architecture of Vienna, Paris, and New York was now practically alike; differences of climate would remain, but differences in mode of life tended more and more to disappear. Mr. Elkington was rather unfortunate, too, in selecting Inigo Jones as a representative of our national style to whose tradition we had been false, considering that Inigo Jones acquired his great style entirely by that very foreign travel which the lecturer had deprecated. It must be admitted, however, that Mr. Elkington made a very clever reply to his critics, and that, considering the general tone of the speeches, he obtained a larger proportion of votes in the show of hands than we should have expected. But the idea of a national style in the present day is a chimera, and it is as well that the younger generation of architects should recognise this.

Conditions of Contract.

AT the annual general meeting of the Northern Counties Federation of Building Trade Employers, which was held recently at Stockton-on-Tees, and of which the official report appears in another part of the present issue, it became further evident that the organised builders are determined to take every legitimate opportunity of securing more equitable treatment in the vital matter of contracts. The secretary, in reporting upon the case of Wallace v. Douglass, with which readers of the Journal are already familiar, summarised in a few luminous sentences the effect of the judgment in the Court of Appeal, where, he explained, it was decided "that the offer and acceptance to do the work as per quantities, coupled with the conditions contained in the bill of quantities, was a contract in the sense that is generally understood in the building trade, and that to ascertain the amount to be paid thereunder it was necessary to ascertain the actual work done, and price it according to the prices in the bill of quantities." An allied subject that was dealt with at the meeting in question arose in the report on a conference between the representatives of the Federation and the Northern Quantity Surveyors' Association, at which "an understanding was arrived at to the effect that the successful contractor should be required to deposit with the architect, before signing the contract, a fully priced and moneyed-out copy of the bills of quantities, for use in valuing all variations from the contract. All clerical errors of extension or additions affecting the lump sum should be at the sole risk of the contractor. He should have no claim for any adjustment at any time, but should alter his prices and figures to fit the lump-sum figure, and the total figure should not be affected." Here, possibly, the phraseology is somewhat lacking in precision, but the intention should be perfectly obvious. Another matter upon which the Federation very justly adopted a firm attitude arose on the report upon the conditions of contract demanded by a local district council, who required (1) that priced schedules should be sent in with the tender, and (2) that the surveyor to the authority should be the sole arbitrator. Both conditions have been strenuously opposed in the Journal, and it is hardly necessary to elaborate further so transparently just a contention as that it is both uneconomic and unfair to expect builders to prepare independent and necessarily various schedules, and thus to compete with each other upon unequal terms, besides being put to trouble and expense which, in all cases save that of the tenderer who happens to secure the contract, must be utterly wasted. The wild extravagance of such a system is alone sufficient to render it abhorrent, and it is open to other serious objections, which need not be now repeated. As for making the authority's surveyor the sole arbitrator, we must confess to some surprise that any authority should have the hardihood to insist on this condition after the clear and emphatic decisions of the Courts. It might perhaps be worth while for the Federation builders to keep on hand a supply of summarised reports of these decisions, for use in the education of those officials who show a disposition to act as if in absolute ignorance of the views of the contractual referee which have been so strongly expressed by the judges.

The Society of Arts.

TWO lectures of rather special interest were given at the Society of Arts last week. On Wednesday evening Mr. Reginald A. Smith, F.S.A., gave a lecture, illustrated by many plans, on "A new view of Roman London." The object of the paper, which was a long one, supported by a mass of evidence from maps and documents, was to trace out the probable run of the principal Roman roads leading out from the walled London of that day; and the most remarkable point made in the argument was the deduction as to road lines from the positions of Roman graves which had been discovered in various parts of London. The Romans made a practice of burying on either side of the main roads running out of a city. Hence, the lecturer argued, when several graves were found, at a considerable distance from one another, but nearly in the same line of direction, the probability was that there was a road following that line, and passing near to or between these graves. Some of the road lines based on this argument agreed in rather a striking manner with other probabilities of route; but the evidence based on the position of graves is, we believe, new. When the paper is published in the Society of Arts Journal we presume some of the plans will be published also, without which it could not be properly understood. An abstract of the paper will be found on pp. 639 *et seq.*

The lecture on Thursday evening by Mr. Chisholm, on the Taj Mehal, was also somewhat novel in its view of the subject. He argued that the great admiration bestowed on the Taj was not owing to its scale or its beauty of detail; there were Indian domes of large span and Indian buildings of even richer detail, in the shape of carving. The peculiar effect of the Taj was due to the flat character of the work, with no mouldings but abundant inlay, and the consequent transparency of the shadows. The planning of the great arches over the doorways as semi-octagons, with canted sides, did away with the dark shadow that might otherwise have been there, and left only a transparent veiled light through which the details seemed to shine. It must also be remembered that the Taj was, from the point of view from which it was generally approached, seen in connection with dark masses of trees, and this favoured its effect very much. Many persons had thought the building over-rated in books, yet few ever actually saw it without being taken captive by it in the same way. Mr. Chisholm drew attention to the difference in style between the angle cupolas and the main dome, the latter appearing like a reversion to an earlier style, dependent for its effect on shadow and not on surface ornament. He suggested that the Taj would have been more effective if the angle cupolas had been omitted. We do not quite agree with that; some feature was wanted then to support and lead up to the central dome, but we have always thought that those angle cupolas were out of keeping with the rest of the building.

CHRONICLE AND COMMENT.

Against Pictorial Glass.

A letter signed "Artist," appearing in the "Church Family Newspaper," objects that some remarks by Mr. A. C. Benson about church window glass are "too sympathetic." The writer asks, "Why are we afraid of saying, what so many really think, that glass is a medium quite incapable of expressing real appearances or facial expression, and that as a picture does this more adequately, the use of glass for this purpose is quite obsolete?" Glass design, he maintains, "is a unique opportunity for rich decorative colour, but should be restricted to ornament and pattern. Also," he adds, "we live in a new age. Anyone for a few shillings can possess in their own homes wonderful reproductions of the finest religious pictures. Is it not an anachronism to keep on imitating the mediæval pictorial Bible, which the old stained glass no doubt was before men could command such superior works of art, or could even read?" These contentions are not daringly novel; and their reiteration does not render them more acceptable. The principle that every medium has its limits applies no doubt with peculiar force to stained glass; but "Artist" seems to illustrate the danger of pushing a principle too fast and too far. The restriction of glass design to ornament and pattern would add a new terror to interiors; and the view of stained glass as a kind of pictorial Bible, which is now superseded by cheap photo-mechanical prints, is only saved from absolute absurdity by its slight substratum of fact. But dogmatism in such matters is always perilous; and the "too sympathetic" attitude of Mr. A. C. Benson towards pictorial glass is infinitely preferable, even in its exaggerations.

Rowton Houses for Women.

A movement has been inaugurated with the object of establishing Rowton Houses for Women. According to Mr. F. G. Mackereth, who delivered an address on the subject at a West End "At Home," the other day, the need for suitable housing accommodation for women has become positively perilous. As the need amounts to a positive scandal, in all probability the outcome of the movement will be the building of a series of lodging-houses comparable to those which have been provided for men by the London County Council, and by the Rowton Houses and similar corporations. The movement is of course largely philanthropic; but it may be trusted that in the endeavour to meet as promptly and as effectually as possible the crying needs of the situation, the promoters will not lose sight of the desirability of erecting buildings that shall be not merely convenient within, but comely without. It will not, we trust, be forgotten that anyone putting up a building—especially a large one—is under a moral obligation to render it sightly, if not beautiful, and this plea seems to gain added force where women are concerned.

Town Planning at Burnley.

The Burnley Town Council have approved of the appointment of a Town Planning Sub-Committee to consider all matters under Part II. of the Housing and Town Planning Act, and to report thereon.—Councillor Thomas (vice-chairman) said it was intended that the committee should be an aggressive one, and that the Act should not be a dead letter in the borough. In the minutes a report was given by Alderman Warburton (chairman of the Improvement Committee), the borough surveyor, and the town clerk, of a visit to the National Town Planning Conference in October last, in which the deputation stated: "The practical conclusion we have arrived at, after considering the proceedings of the conference is, that as a beginning of the exercise of the powers of Part II. of the Housing, Town Planning, etc., Act, 1909, it would be best if attention were confined to the settling of a plan or plans to regulate the laying out of streets and the building on land ripe for building purposes immediately outlying the populous parts of the town. The settlement of a plan or plans of this character would ensure that the laying out of streets in the outlying districts would be done by reference to the requirements of the whole area, and not as at present to the requirements of each particular plot as it comes to be built upon. More convenient streets, a better distribution of houses on building land, and open spaces, could by this means be secured, and we recommend the immediate appointment of a sub-committee for the purpose of taking the necessary steps to prepare a town plan or plans of such of the outlying building area as the sub-committee may deem it wise to deal with."

The Middlesex Guildhall.

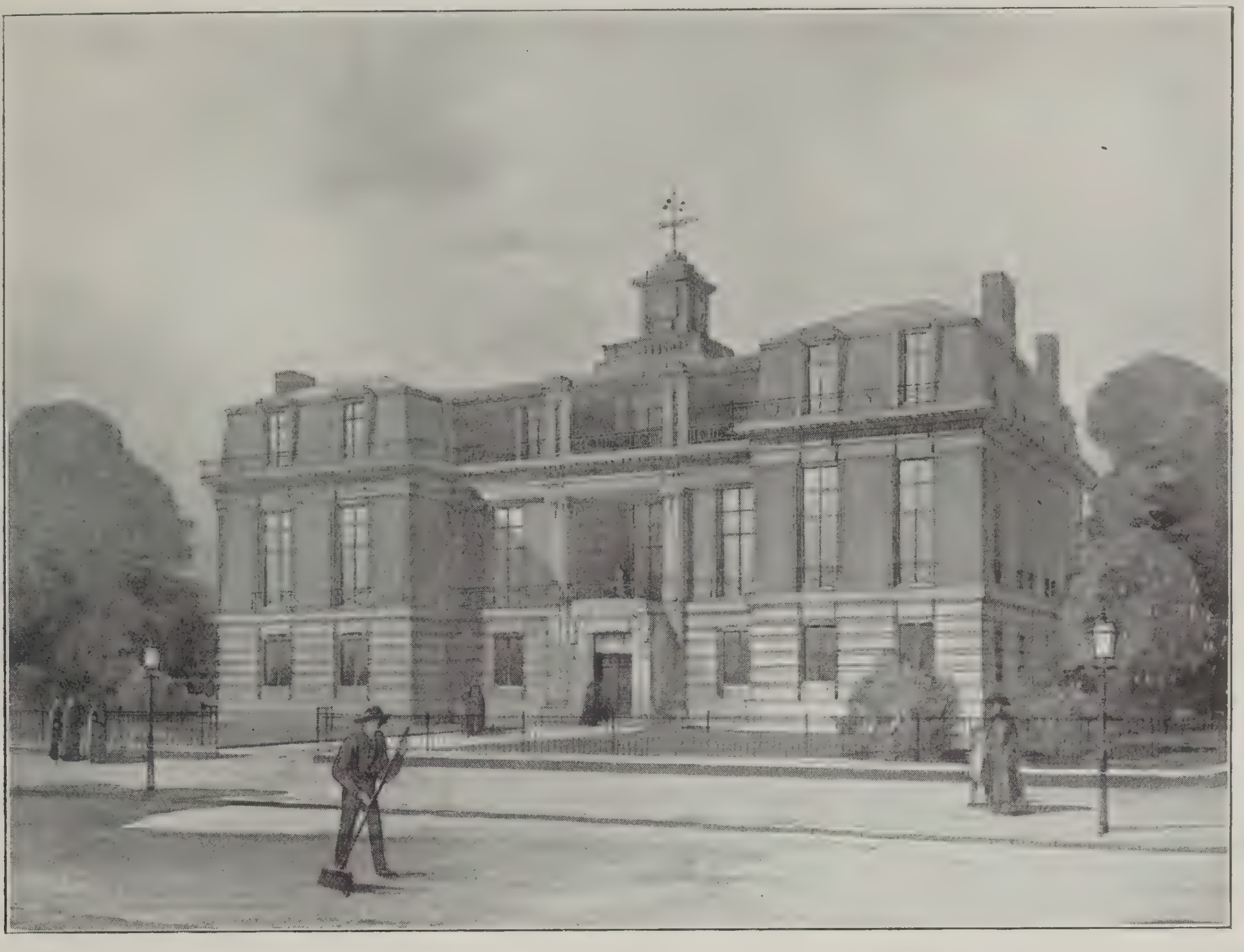
Probably the Middlesex Sessions House at Westminster will not long endure the strongly felt desire for a building that shall be more worthy of its important site facing Parliament Square. Near it is the Westminster Hospital, which, it has been urged, might with advantage be removed to some spot, perhaps in South London, that would be more convenient for those to whose needs it ministers; leaving its present site free for occupation by a building that might easily be in every way more harmonious with its surroundings. Hence arises, it would appear, an excellent opportunity for the co-ordination of forces in the arrangement of a building scheme of a magnitude and a dignity commensurate with the importance of the site; which, by its proximity to the Houses of Parliament, Westminster Hall, the Abbey, the new Wesleyan Hall, and some fine Government buildings, and by its position as a gateway of the West End, makes a special demand for treatment in the Grand Manner. A site at the back of the Middlesex Guildhall has been acquired for £40,000, and it is proposed, by building on it, to double the present accommodation, at a cost of between seventy and eighty thousand pounds. This proposal, of course, is entirely independent of the suggestion with regard to the contiguous Westminster Hospital. Indeed, we do not suppose that the respective authorities of the Guildhall and the Hospital have thought of conferring together on the desirability of formulating some joint scheme that might conceivably be mutually beneficial, besides clearing the way for a magnificent and much-needed improvement in surroundings with which the present Guildhall and hospital are decidedly out of scale.

SPECIAL ANNOUNCEMENTS.

Owing to the Christmas holidays, next week's issue of the Journal will be published on Thursday instead of Wednesday.

The Edition de Luxe will be published at the end of this month. It will include a special section devoted to College Architecture, old and new, at Cambridge, and another special section devoted to Buildings of the Year—profusely illustrated; while among other features will be a series of portraits of the Presidents of the Architectural Societies, a finely illustrated article on the work of the late Mr. Brydon at Bath, and an illustrated review of Reinforced Concrete in 1910. With the issue will also be published a supplement plate of a magnificent etching by Mr. Frank Brangwyn, A.R.A.

The issue, both in the interest of its reading matter and in the wealth and value of its illustrations, will fully equal the special editions of former years. It will, as usual, be finely produced on special art paper, and the price will be one shilling net. Orders should be sent without delay, as the issue cannot be reprinted; and readers are reminded that former Special Issues have rapidly become so scarce that they have changed hands at, in some instances, tenfold their original price.



NEW BUILDINGS FOR THE ZOOLOGICAL SOCIETY, REGENT'S PARK, LONDON. JOHN BELCHER, R.A., ARCHITECT.

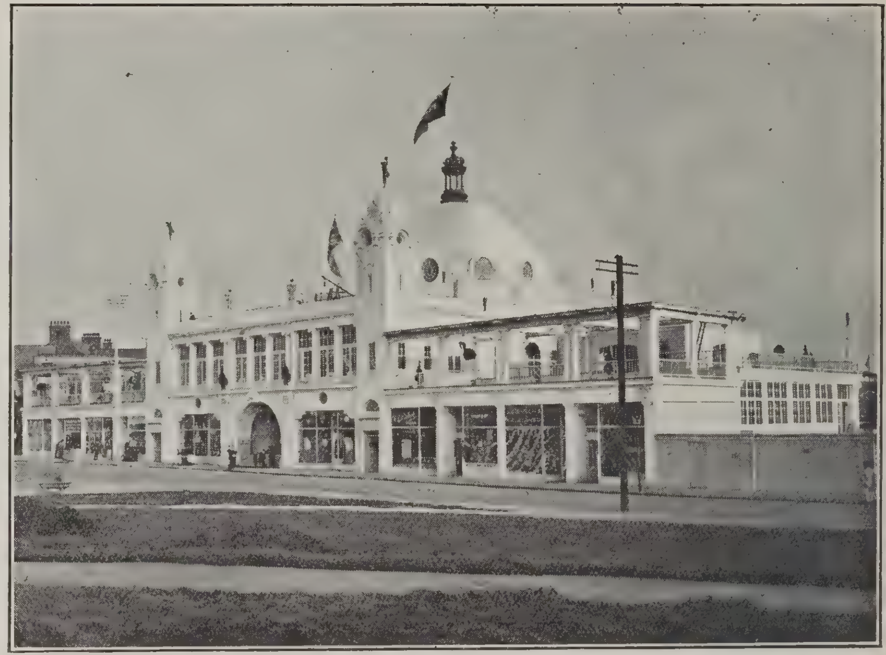
Cavity Walls.

The Local Government Board have sanctioned the use of hollow walls in Gateshead in connection with the Musgrave Garden City. There are some who hold that a double-brick wall, with a space between the two courses, if properly tied together and well built, is superior to a three-brick wall built solid. The space prevents damp penetrating, and acts as an excellent non-conductor of temperature. Alternatively, builders at Gateshead, if they do not like hollow walls, may put up nine-inch (double-brick) walls, solid, providing they cover the exterior with rough-cast cement, or with slates, but they object to the extra cost that is thus involved. The only additional expense in regard to hollow walls is that of providing galvanised iron ties. There is, however, as we have said on a previous occasion, a certain amount of prejudice against hollow walls, partly because of the misgiving as to "what may be going on inside them," and partly, no doubt, because of the perhaps excessive English regard for substance and solidity. Nevertheless, cavity walls may possess all the virtues that are claimed for them, and very possibly the worst that can be said against them is that they are hollow.

In Praise of St. Paul's Cross.

Adverse criticism is so common that any instance to the contrary is always refreshing. In the current issue of the "Commonwealth," which, we believe, is or was edited by Canon Scott Holland (whose appointment as Regius Professor of Divinity at Oxford was recently announced), there is an interesting note, signed "H. S. H.," on the St. Paul's Cross. Canon Holland praises the new work very generously. It "is surely," he says, "the most beautiful monument in London. What else," he asks, "can compare with it? Mr. Gilbert's famous fountain at the quadrant, exquisite as it is, is so hopelessly lost amid the rowdy turmoil of motor-buses. This Cross utterly befits its place. And that is its triumph. For, indeed, it was a perilous problem that Mr. Reginald Blomfield had to tackle. How to secure a monument that would, at once, chime in with the Cathedral, and yet retain its own identity and dignity, in close neighbourhood with the overpowering mass of building? Any suggestion of the poor cheap little Jacobean Box which it was to commemorate would have been condemned to hopeless derision and contempt. It was worthless as a work of art: it had a very short history behind it: it had itself replaced the fine erection of Bishop Kemp: and it must have been something of a makeshift. Anything of its size would have been reduced to an ignoble kiosk by the overshadowing Dome. After several trials to recall its general shape, which only served to exhibit vividly their inadequacy, Mr. Blomfield resolved on following the type of Cross which is, historically, represented by the Market Cross at Edinburgh, restored by Mr. Gladstone. Here was the form of Cross required. It has a wide rounded 'Ambo,' for the purposes of a pulpit; and, in the centre of this ambulatory, a tall pillar. To this traditional idea, so often repeated in market crosses, the artist has given its full value under the mothering shadow of the great Cathedral. The fine simplicity of the design secures for it its proper emphasis. It holds its own: it is distinct: and self-poised: and satisfying. It is governed by a single conception: and it makes its meaning known. Yet it belongs to its surroundings. It is in perfect tune with Wren's mind. It makes no jar. The Dome seems to expect it. The details are exquisitely beautiful: especially the brooding boys, with the swags, grouped over the base. The supreme figure has in it all the fine distinction of Mr. Mackennal's work."

WHITLEY BAY PLEASURE BUILDINGS.



PLEASURE BUILDINGS, WHITLEY BAY, NORTHUMBERLAND
CACKETT AND BURNS DICK, ARCHITECTS.

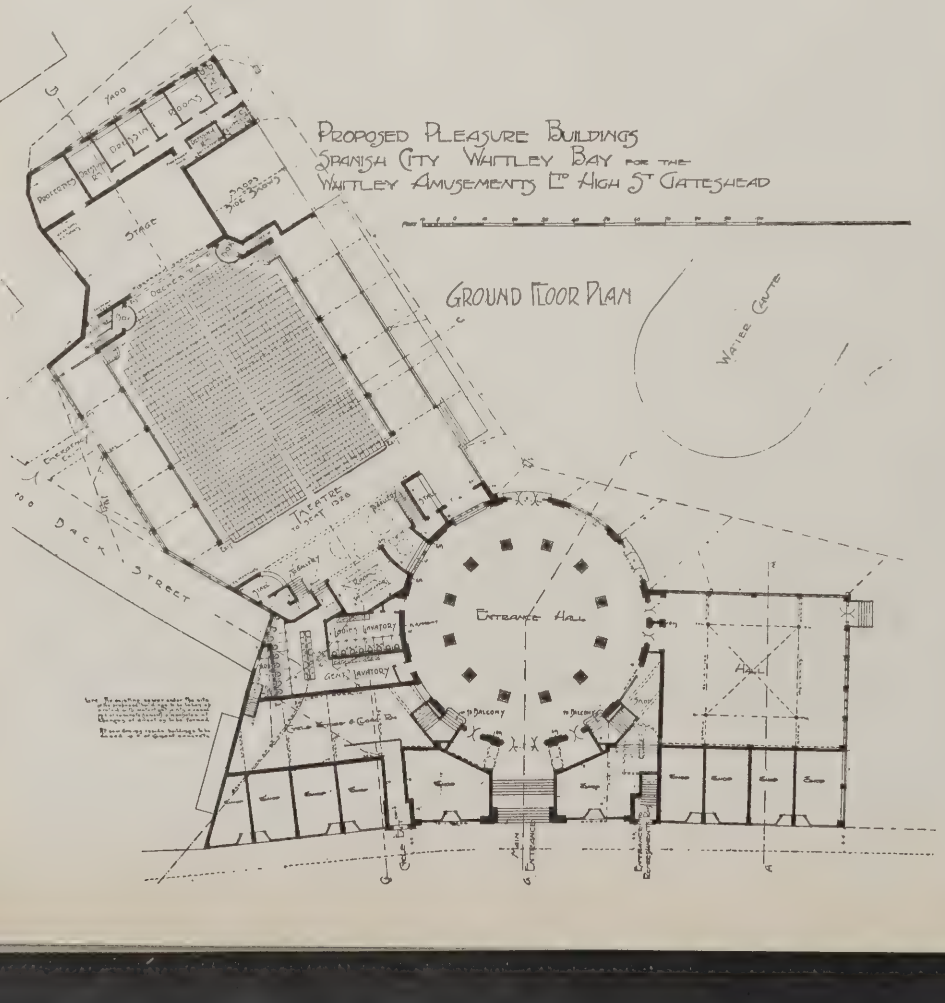
These buildings are on the site formerly occupied by temporary buildings for the "Spanish City," Whitley Bay, Newcastle-on-Tyne. The construction of the buildings here illustrated is of a substantial and permanent character, and is interesting from the fact that it comprises one of the largest reinforced concrete domes yet erected, and a cantilever gallery in the same material. The dome is 50ft. internal diameter, carried on twelve columns 35ft. high, the whole forming one homogeneous structure of reinforced concrete about 90ft. to the top of the lantern. The gallery of the theatre has a clear span of 66ft., the cantilevers projecting 17ft. beyond the centre beam, the latter and the beam supporting the main gable, and back of gallery being 6ft. and 8ft. deep respectively.

A month after erection, the front of the gallery was tested with a load of something like 80 tons, with most satisfactory results. The general arrangement of the buildings will be seen from the ground floor plan. The first floor contains the café, restaurant with roof gardens, and round the base of the dome the roof over the café is used as an open promenade, commanding a fine view of the sea coast and the pleasure-grounds with their many amusement devices.

The theatre is arranged with a promenade on three sides, one of which is open to the grounds; the construction of the great semicircular roof and supports is of steel, timbered and slated in the usual way. The side arcading is fitted with revolving shutters, enabling the promenades to be shut off from the auditorium proper when required; the idea being that in the height of summer the entertainment may be considered more or less as al fresco. The stage, with a 30ft. proscenium opening, is large, and thoroughly equipped for entertainments of any description, the electric installation being of the highest class. The main walls throughout are of brick, faced externally with Portland cement painted white; the columns of the main front being of concrete reinforced with expanded metal. The figures on the towers, and the large lantern on the dome, are of copper. The interior of the rotunda and theatre is treated with fibrous plaster. The floors on the ground floor generally are of terrazzo.

The whole work was carried out in exceedingly short time, the buildings being opened to the public in May, four months from the start—the worst period of the year for building work.

The general contractors were Messrs. Davidson and Miller, Newcastle-on-Tyne, who also executed the reinforced concrete work under licence from the Hennebique Company, upon whose system it is designed. Mr. Wm. Ferguson, Newcastle, has carried out the fibrous plaster work. The electric installation is by Mr. R. W. Cairns, Newcastle. The copper lantern and the terpsichorean figures on towers are by Messrs. Ewart and Son, Ltd., London. The architects are Messrs. Cackett and Burns Dick, FF.R.I.B.A.



OUR PLATE.

The Grand Palais is one of the notable additions to modern French architecture. Like the Petit Palais opposite, it is a relic of the exhibition of 1900, and is the work of two or three architects. M. Deglane was responsible for the river front, a detail of which is reproduced as a centre plate in this issue, and also for the main entrance front. The work is essentially French, and exhibits a beautiful combination of architecture and sculpture, with details full of vigour and freshness.

NEW ABATTOIR FOR ISLINGTON.

The City of London Corporation, as the market authority for the Metropolis, has now extended its public slaughter-houses and opened a series of chill rooms at the Islington Cattle Market, the total cost involved being over £60,000. The Lord Mayor recently opened the new buildings, and at the same time the foundation-stone of the new abattoir was laid by Mr. D. George Collins, the chairman of the Cattle Markets Committee. An interesting feature of the new buildings consists of the destructor-house, in which is installed a Podewil apparatus. It is a German invention, and is in extensive use on the Continent. Now for the first time it has been introduced into England. All condemned meat and the offal from the slaughter-houses are placed in a large cylinder, then being subjected for some hours to steam at a pressure of about 65lb. The cylinder is afterwards made to rotate, and heavy rollers crush the bones, the product, in the shape of dry powder, finding a ready market as a fertiliser. The buildings have been erected from the designs and under the direction of Mr. Sydney Perks, F.S.A. (the City Surveyor), and are so planned that they can be easily extended.

LONDON'S EARLIEST ROADS AND BRIDGES.

By REGINALD A. SMITH, F.S.A.

The student of town-planning will be greatly indebted to Mr. Reginald A. Smith, F.S.A., for his extremely interesting investigation of the available data with respect to London's earliest roads and bridges. His paper, read before the Royal Society of Arts on December 14th, was entitled "A New View of Roman London," and although, from the following abstract, many archæological proofs and details have been necessarily omitted, it will nevertheless be clearly seen that Mr. Smith has constructed a most fascinating theory of the original "lay-out" of London.

AT the present day little excuse is needed for introducing to a London audience any new evidence with regard to town-planning and traffic regulation; for though the present paper deals with London as it was nearly two thousand years ago, it is meant to illustrate the manner in which the engineering genius of Rome laid down the main lines of traffic in this part of Britain, before the spread of bricks and mortar made the problem well-nigh insoluble.

The Arrangement of the Main Roads.

Particular attention was directed to the history and arrangement of the main roads. The minor streets are now hopelessly lost, and do not seem to have coincided with any existing thoroughfares, many of these having been proved by excavation to have been crossed by buildings.

Britain was in contact with Roman civilisation a century before the conquest under Claudius, and that period of respite sufficed to show the natives whom they had to fear, and the best means of defending their shores and estuaries against a surprise attack.

Roadway and River.

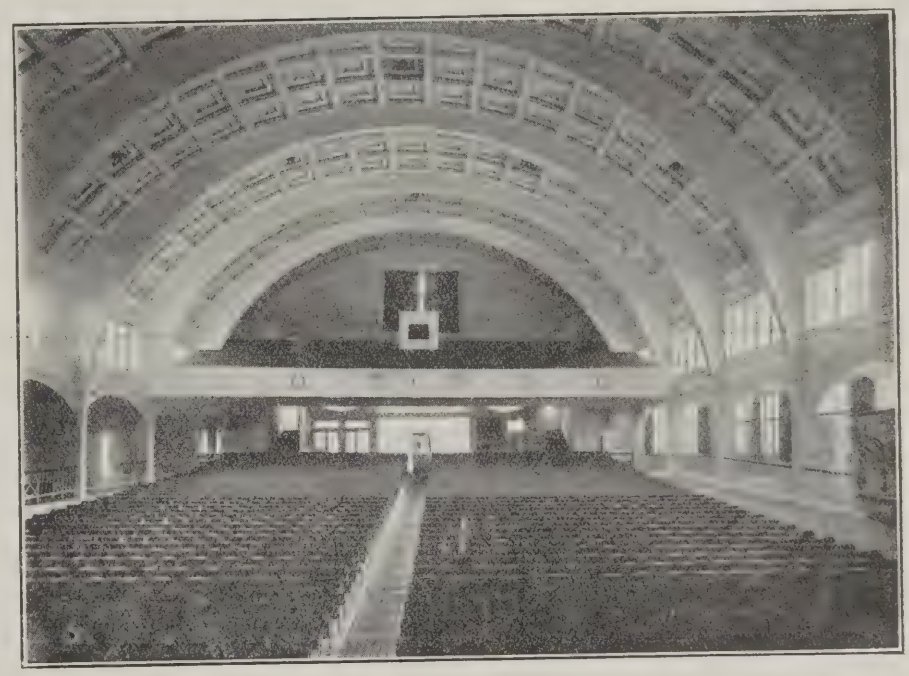
That chariots were extensively used by the Britons in warfare is clear from the narrative of Cæsar, and the large number under the command of Cassivellaunus in B.C. 54 implies an elaborate road system at least in his own dominions, and therefore along the north bank of the lower Thames. One of the principal duties of such a force would be to keep a watchful eye on the river traffic; and that Roman boats about sixty feet long ascended the river at least as far as Westminster two or three centuries after the time of Julius is shown by the recent discovery of such a vessel below ten feet of river mud on the site of the new County Council Hall.

[This vessel was first described in the Journal of May 25, 1910, in an illustrated account of "London County Hall Foundation Works."—Ed., "A. and B.J."]

To watch the river it was necessary to have a regular roadway on high and dry ground as close as possible to the water, and this was practicable only on the north bank near London. East of the Lea, and a good way beyond London on the south, the banks would be useless for such a purpose; and it is interesting to find the remains of an ancient road running east and west on the brow of the hill just above what is now London Bridge. When that road was first engineered we can only surmise, but it was certainly built or rebuilt by the Romans, for an entire section of it was made and published in 1833 during alterations for the bridge-approach in what is now Cannon Street, but was then called Great Eastcheap. A gravel road 16ft. wide, supported by two walls 7½ft. high, was found about 3ft. below the modern roadway pointing to London Stone on the west, and apparently to Aldgate on the east, but it has not been traced east of Gracechurch Street. Narrower by 8ft. than Watling Street, as discovered in Edgware Road, it lacked the layer of flints that distinguished the Roman military roads; but there is no doubt of its Roman construction, as the containing walls have bands of the familiar tiles between stages of Kentish ragstone. The position, however, suggests an earlier British origin, and if this road were to enable horsemen to patrol the river and give notice of any hostile approach by water, then we must imagine it continued, at least westward, along the brow of the steep northern bank, and crossed the Wallbrook, which was at that time a broad tidal river running into the Thames at Dowgate Hill.

A Bridge at Wallbrook.

That there was a bridge here in Roman times is practically certain, as the sill of a bridge, stout oak piling, and lumps of herring-bone pavement have been found just at this point. The Wallbrook once crossed, the road would naturally proceed along the south side of St. Paul's and down Pilgrim Street to the Fleet, which was, no doubt, crossed by a ferry. Its subsequent course would be quite conjectural were it not for the occurrence of three Roman burials that exactly indicate a line that is more than probable on other grounds. It is common knowledge that the Romans laid out their cemeteries along



View of theatre from stage.

View of gallery in theatre showing centre beam and cantilever: clear span 66 ft.

PLEASURE BUILDINGS, WHITLEY BAY.

their main roads, but the evidence of burials with regard to roads has been rather neglected in this country, and it is surprising to find how useful these scattered and accidental discoveries are in the neighbourhood of London. Indeed, the roads for which there is least presumptive evidence are the best attested by burials along their course, and the present instance is, perhaps, the most illuminating. A stone coffin was found in Howard Street, Strand, and cinerary urns under the portico of St. Martin's-in-the-Fields, and the west end of Cockspur Street.

Tracing the Course of a Roman Road.

If the theory holds good, a line drawn between these sites should indicate the course of a Roman high road, and the only line that satisfies the conditions runs from Bridge Street, opposite the foot of Pilgrim Street, through the Temple, under Somerset Street, between this hall and another hall in the Strand, past the National Gallery on the north (and higher) side of Trafalgar Square, under George III.'s statue and the Waterloo monument, across the south side of St. James's Square and the west end of King Street to enter St. James's Park a little above the bandstand, whence still in a straight line it would follow the high ground to the Tyburn valley. Crossing the stream—no doubt by a bridge as the banks are somewhat steep—it would, in a few yards, reach the south end of Park Lane; and Hyde Park Corner has always been an important landmark. Nor need we give up hope of following it still further, for though connected with the Thames it could not well have crossed the low and then swampy ground south of Knightsbridge.

From Brentford to Hyde Park Corner.

The drainage of Pimlico is one of the wonders of London, but of quite recent date; and further west the bends of the river enclose flat areas then, if not now, liable to floods; but a road was practicable on fairly high ground to Brentford, which there is reason to believe was the objective of this ancient highway. The former importance of this town may be partly explained by a ford over the Brent, and by the fact that here is a stretch of gravel in the Thames bed which made it possible to ford the river at low tide in the days before steamboats rendered a deeper channel necessary. A few years ago Mr. Montagu Sharpe convincingly argued that here was the spot where Cæsar crossed the Thames, and the existence of a large number of stakes in the north bank is in full agreement with Cæsar's own account of the crossing. For him there was only one ford, and that a difficult one, to take him into the territories of Cassivellaunus, and here, if anywhere, would be a British stronghold reached by well-kept roads. The supposed road from Brentford to Hyde Park Corner is practically in the same line as the section from the latter point to the Fleet, and presumably both belong to a system elaborated by the ancient Britons for their own safety and convenience. It may be remarked in passing that the road west of the Fleet, which seems to be marked out by the burials with mathematical precision, exactly coincides with the Terrace of the Inner Temple. The whole group of buildings is evidently based on that line, while the Strand frontage is ignored; and if the Terrace is, in fact, a remnant of this early highway overlooking the Thames, the curious alignment is easily explained.

The advantages secured to the Britons by this road would also appeal to the Romans, to whose engineering skill and thoroughness may be attributed the straightness and stability of this secondary highway. Another road of more importance may also have been laid out before the Roman Conquest, but its length and directness point unmistakably to Roman initiative, and at least near London may, without much hesitation, be assigned to the latter half of the first century. Here, as in other cases, a clue to the original course of the road may be gained by producing the straight lines that still exist outside London, but a word of caution is necessary as to the name of Watling Street. In Kent there is no ambiguity, but in the Metropolis the presumed original highway of that name must be clearly distinguished from the street that runs east from St. Paul's to Queen Street. At first the Roman highway from the Kentish ports to Chester seems to have avoided the city and crossed the Thames at Westminster.

The Thames Fordable at Custom House.

Below London the scene was far different from what we see to-day. The river flowed through mud plains covered with water at high tide only, and at low tide showing broad spreads of treacherous mud, as at Southend at the present day. Firm land was only touched at some of the bends in its course, as Greenwich and Woolwich. The Lea valley may be taken as the limit of low ground on the north bank, and the river at the Custom House may well have been fordable at low tide, though dangerous to those not familiar with the crossing. Improbable as it may seem to-day to anyone standing on London Bridge, it is nevertheless supported by facts that came to light during the demolition of old London Bridge. Sir G. B. Airy, late Astronomer Royal, stated half a century ago that the depth of the foundations of the piers was good evidence of the depth of the river at old London Bridge. It appears from a published cross-section that the lowest part of the rubble, on which were laid the wooden sleepers supporting the masonry, was only from two to three feet below low water. It is certain, he says, that this could not be higher than the general bed of the river, and it probably would be lower. Some channels naturally would be deeper than the general bed; and these, when the tide had risen a little, would make the operation of fording very dangerous.

If the dangerous British ford was at or near the Custom House, the bridge was not far off; and in view of the course of Watling Street there can be little doubt that the bridge was at Westminster, which would be about 2¼ miles above the ford or, as Dio says, a little higher up. That the construction of a simple bridge here would not baffle the ancient British is suggested by the fact that in 1846 a man forded the river at this point, as recorded in the "Gentleman's Magazine."

An Ancient Highway.

Towards the British bridge, therefore, at Westminster the highway was directed, and a straight line in continuation of the fine stretch of Roman road on Shooter's Hill skirts the river at Deptford, crosses the Thames a little south of the present Westminster Bridge, and reaches the southern end of Park Lane, where it may be presumed to have turned into the line of Edgware Road; for a prolongation of that road would almost coincide with Park Lane, and naturally stop at what we have already supposed to have been an important road-junction. This, at any rate, is the solution suggested by a consideration of outer London, and by the observance of the Roman rule that roads run straight unless turned aside by serious obstacles. The Edgware Road is an excellent example, running in a straight line till compelled to swerve in ascending Brockley Hill; and the onus of proof lies on those who would make the Roman roads crooked without weighty and sufficient reason.

Leaving Deptford, the highway struck right across what is thought by some to have been a huge lagoon or morass in the Roman period; but this view of South London is clearly incorrect, as Roman remains and especially burials indicate dry and firm conditions in an area that has a subsoil mainly of gravel. Most of the burials along this line are not definitely located, but those at the Deaf and Dumb Asylum in the Old Kent Road and west of

Interior of Rotunda.

PLEASURE BUILDINGS, WHITLEY BAY.

Deverell Street exactly accord with this theory, and flank the road on either side. Passing about 130 yards north of the Elephant and Castle, the line reaches the river near the middle of St. Thomas's Hospital, and the vicinity of Stangate (Stonegate) is significant, as probably preserving the memory of an approach to the river that was paved by the Romans. Stanegate is also the name of a Roman road near Vindolana (Chesterholm), just south of the Roman wall in Northumberland.

In the fourteenth century, when there were probably clearer traces of the Roman highway than there are to-day, there lived a monk named Higden, who was connected both with Westminster and Chester, and had therefore probably travelled over great part of the Watling Street. In the Polychronicon he described this road as crossing the Thames to Westminster and beyond, westward to a point at which it turned towards St. Albans. That is at least what the author considers a fair reading of the text which has been variously translated and interpreted. The critical words are *ad occidentem Westmonasterii*, which he takes to imply a continuation to the western part of Westminster, and not a passage of the river at a point which lay on the west of Westminster. The map shows this would be an absurdity, as the Thames, for about half a mile above and below Thorney, flows from south to north, and Westminster in those days meant Thorney. On the other hand, Higden's words seem to agree absolutely with the route suggested above.

The Lake in St. James's Park.

It was long ago pointed out by Dean Buckland that a bank of gravel stretches from the river westwards almost to Buckingham Palace, and the builders no doubt availed themselves of this firm foundation for their road, which, however, had to cross some low-lying and, at that time, marshy ground before reaching the bottom of Park Lane. The lake in St. James's Park is a relic of these conditions, but had not always its present form. The road would cross about half-way between the bridge and the fountain, and to-day a stretch of lawn between two banks may mark its original course. In the Green Park also may be observed a cutting in the west bank of the Tyburn — rather steep on the north side of the Park—that lies in the direct line to the supposed junction in Piccadilly.

From the map it is fairly obvious that Park Lane represents a southern continuation of the Roman road that practically coincides with Edgware Road, and from the elbow in Piccadilly we may suppose the road ran in a straight line to Brockley Hill. Nor is this a mere supposition or tradition; the actual road was struck in 1902, almost exactly in the middle of Edgware Road, opposite Seymour Street. Another discovery, unhappily not so precise, seems to shed fresh light on the intersection of Roman roads at the Marble Arch. In Rocque's map of 1746 is marked the position of a stone against which condemned soldiers were shot inside the Park, civilian criminals being executed at Tyburn gallows just outside. It was described as a Roman "geometric" stone, that is, a stone set up as a landmark by road-surveyors, and probably inscribed with distances to various points. The intersection near the Marble Arch of two important Roman highways (the original Watling Street and that from Romford to Staines) would fully account for the position of the stone which, on the map, lies in the middle line of the avenue.

The East and West Road.

The east-and-west road is characteristically Roman in its defiance of minor obstacles and adherence to the straight line, but did not actually pass through Roman London. It led from Essex across the Lea to Holborn, along Oxford Street and Bayswater Road over Notting Hill to Brentford, where it joined the British highway already noticed, and thence to Staines and across the Thames to Silchester and beyond. Though its course through Essex and west of Holborn is fairly well established, the intervening portion that skirted the north wall of the city is more conjectural, and it is only in the last few years that indications of the line have been noticed. Even without this fresh evidence, one could guess at its position by producing the line that is fairly clear from Romford to Stratford Town Hall, and this would pass through Old Ford, under Bishopsgate goods station, Finsbury Square, and Smithfield to Holborn Viaduct. Beyond this the direction is slightly altered, but another long stretch takes us in a straight line to Notting Hill. That such was indeed the original route is virtually proved by the following considerations. About four years ago lumps of tiles, cemented together to form a herring-bone pavement of a common Roman type, were dredged up by the Lea Conservancy Board in the Lea just below the lock at Old Ford, exactly at the point where our imaginary line would cross the river. That there was once a ford hereabouts is clear from the name of the district, but probably its exact position had not been previously determined. It was at Old Ford that the Lea was generally crossed before Bow Bridge was built, about the middle of the twelfth century; and it is recorded by Lysons that Matilda, wife of Henry I., caused two bridges to be built over the Lea and its tributary, the former known as Bow Bridge and stated to be one mile from the old ford. The two points are, in fact, just half that distance apart, and the Roman ford approximately coincided with the line of Iceland Street, a little below the crossing of the outfall sewer.

The Roman Wall.

The Roman wall round London, enclosing an area of about 360 acres, was built across the Wallbrook, then a considerable tidal stream which passed through gratings in the foundations. Either through neglect or of set purpose the citizens allowed these gratings to be clogged with river-weeds and refuse, as proved by excavation in our own time, and the result was that the water was dammed back outside the wall, and in time spread over what was later known as Moorfields. This area was skated over in the time of Henry II. and remained a waste till drained and turned into a pleasure garden early in the seventeenth century. We must assume that before the wall was built Moorfields was firm and dry, with a gravel soil capable of bearing a main Roman road, as is shown by a child's burial there containing a gold coin of Salonina, wife of the emperor Gallienus (253-268). Though most authorities are in favour of the fourth century, it is conceivable that the wall was already built in the middle of the third, but the morass cannot have been in existence when the interment took place. Some time after that date the east-and-west road must have been ruined by the swamp, and a way round must have been devised. The nearest high ground north of Moorfields is marked by the line of Old Street, and in this thoroughfare, where it is joined by Goswell Road, two Roman road-levels, one above the other, were found in 1867 during some deep excavations which revealed mediæval roads above. This diversion enabled traffic to pass easily between Holborn Bridge and Norton Folgate, without going through the city. At Smithfield interments of both kinds (cremations and inhumations) have been found in considerable numbers, and here, as elsewhere, the angle between two main roads seems to have been a favourite burial-ground.

A Fleet Bridge.

Other burials further west give a clue to the position of the road after the Fleet was crossed by a bridge, probably at the bottom of Snow Hill. In fact, the "Gentleman's Magazine" of 1750 records that in digging the foundation for Holborn Bridge, remains of the Roman military way were discovered pointing directly to Newgate. A straight line from here to the Marble Arch does not coincide with Holborn and Oxford Street, but passes burials on its north near St. Andrew's Church, at the Birkbeck Bank, and another on the south in Endell Street. This line includes part of High Street, Bloomsbury (which was the principal street here till New Oxford Street was opened a few years ago), and gradually approaches Oxford Street as it proceeds westward.

The First Wharf.

The two main roads that remain to be considered seem to have met on the Thames bank at a spot always of special importance to London, and probably the site of the first wharf on the north bank of the river. From Ware southwards to Edmonton there can be traced on the map a line that is continuous with the recognised Roman road that coincides with the highway from Edmonton through Tottenham and Kingsland to the City, and the presumption is therefore that the Roman north road from the Thames ran straight from the river at least as far as Ware. Its course would have been under the old Custom House, a little to the east of the present building, and about one hundred yards west of the Thames subway at the Tower. Opposite this is the point where the line of Roman road known as Ermine Street, on the Leatherhead Downs, would, if produced, strike the Thames, and this coincidence strengthens the belief that these roads were intended to join at a recognised river-crossing where the Romans doubtless erected a bridge on the site of what seems to have been the lowest ford on the river in British times. That the Roman road did not coincide with Borough High Street is proved by the discovery of a Roman tessellated floor right in the centre of the latter; and excavations in the City have made it fairly certain that the road did not swerve on entering the city walls and follow the line of Gracechurch Street to London Bridge, for thick Roman walls have been found crossing this thoroughfare. The old London Bridge was a little to the east of the present structure, and has never been proved of Roman origin.

Antiquity of London Bridges.

That the Romans built a bridge to carry their high road across the river at or near the point towards which earlier British roads must have converged, is more than probable when we remember that the army under Julius Cæsar collected the timber and built a bridge over the Rhine at a point where the stream is considerably wider than the Thames at London Bridge, marched over and back again, and then dismantled the bridge, all in the space of ten days. If the Romans bridged our own Tyne, as we know they did, they would in the course of four centuries have found a bridge at London not only desirable but necessary for the traffic of the chief commercial city in Britain; and as we know that a London Bridge existed in the reign of Edgar (tenth century) we can hardly attribute it to anyone but the Romans, unless, indeed, to King Alfred.

North of the river the problematic course of Ermine Street is fairly marked out by the burials in Artillery Lane and Bishopsgate Street Without, Goring Street (formerly Castle Street in Bevis Marks), Fenchurch Street, Mark Lane, and All Hallows, Barking; and Billiter Street with Mark Lane may represent the ancient line. But this line is probably not so ancient as the others.

A Junction with Watling Street.

A glance at the map will show that a road was wanted to communicate with the great north-west highway known as Watling Street for conveyance of goods, not to mention troops, from the principal landing-place in London. This end would be served by the road suggested on the plan between the Custom House, where it would join the Ermine Street, and Newgate, where it would unite with the east-and-west road and cross the Fleet by one and the same bridge. In this way the detour by Westminster would be avoided; and even if the Ermine Street was in existence when this road was planned, a good mile would be saved by traversing one side of the triangle instead of joining the east-and-west road at Norton Folgate and traversing the other two sides.

The two roads that met in Cannon Street would probably cross the Wallbrook by a single bridge and part company again on the western side; that on the north passing along Budge Row and crossing Queen Victoria Street between two churches, St. Mary Aldermary and St. Antholin (now demolished). Excavations in 1869 revealed a road at a depth of 10ft. 3ins. at this spot, nearly in a line with the present Watling Street. "It was hard and well made, slightly elevated in the centre and formed of rough stone and gravel, in the upper portion of which were found quantities of broken Roman pottery which, with other local circumstances, would lead us to the conclusion that it marked the course of a road or highway of some antiquity." For a short distance west of this point our line runs along Watling Street, where it has been found, and the name is more or less appropriate, as this road probably superseded to a large extent the Westminster portion of the Watling Street from Kent, where London had risen into importance.

A Discovery by Wren.

Its connection with St. Paul's Churchyard is indicated by another discovery by Wren. "Upon demolishing the ruins after the last fire and searching the foundations of this Quire, the surveyor discovered nine wells in a row; which, no doubt, had anciently belonged to a street of houses that lay aslope from the High Street (then Watling Street) to the Roman Causeway (now Cheapside); and this street which was taken away to make room for the new Quire came so near the old Presbyterium that the Church could not extend further that way at first." A similar row of wells abutted on the Roman Road in Cannon Street.

The prætorium or headquarters of a legionary camp would approximately coincide with the site of St. Peter's, Cornhill, under which massive Roman walls have been found extending westward to St. Michael's Church and eastward under Leadenhall Market. At the cross-roads, probably the Carfax of London mentioned in two ordinances of Edward III., stood the Cornhill standard, a fountain of such importance as a landmark that distances on milestones throughout England we are told were measured from it as from the heart of the city. There is, therefore, some ground for considering this point the centre of Roman London. The city developed, the author suggests, from a legionary camp, no doubt occupied in force at the very outset of the Roman conquest, and possibly later by legions on the way to the front, but soon given over to a civil population, which rapidly made it the leading commercial city of the province. It is interesting to note in this connection that St. Peter's claims to be the first Christian church in Britain, and certainly ranked higher than a parochial church in the Middle Ages, for its school was one of four maintained by order of Paliament in London. There may be some justification for the claim that it was the seat of a bishop or even archbishop in the Constantine period.

There is certainly one, and perhaps more than one, main road in or near London that awaits discovery, but perhaps those already traced will have given pause to the critical historian or archæologist. To those accustomed to the haphazard road system of modern London, the straight-edge may seem a crude and inadequate instrument for restoring the main routes of the Roman period; but our conquerors had practically a clear field, and were addicted to straight roads, even in districts where they found greater natural obstacles than near London.

COMPETITIONS.

Artistic Hoardings.

The conditions attaching to the offer made by Mr. W. H. Lever, of Port Sunlight, of prizes of £50, £25, £15, and £10 for the best hoardings constructed from an architectural point of view have been formulated. The hoarding must have a clear posting space of not more than 10ft. in height, and not less than 50ft. in length, the whole cost not to exceed 4s. per square yard. Drawings to the scale of 8ft. to the inch must be submitted with details on a scale of 2ft. to an inch together with photographs of the hoarding dressed with posters. Drawings and photographs must be mounted on cards without margins with name and address of the competitor on the back and, with a signed statement of details of cost, must be delivered to the secretary, United Bill-posters' Association, 4 and 5, Warwick Court, Holborn, W.C., not later than noon June 1st next. Competitors desiring further information must apply to the secretary before March 1.

LIST OF COMPETITIONS OPEN.

Jan. 31. Glasgow Public Library.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Saracen Street and Allander Street, Possilpark. Premiums of £50, £30, and £25 respectively will be awarded to the authors of the designs adjudicated first, second, and third in order of merit. Designs must be lodged on or before Tuesday, January 31. Particulars from A. W. Myles, Town Clerk, City Chambers, Glasgow.

Feb. 8, 1911. Penrith Secondary School. The Governors of Queen Elizabeth's Grammar School, Penrith, are prepared to receive competitive designs for the erection of a new secondary school, accommodating 200 students, with provision for the conduct of technical and evening classes. The following premiums are offered: 1st, £50; 2nd, £25; 3rd, £10. The designs must be sent in not later than February 8th, 1911, to James Cropper, The Vicarage, Penrith, Clerk to the Governors.

March 1, 1911. Municipal Offices, Coventry.—This competition is open to all architects, and the assessor is Mr. E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry. See our issue for November 23rd.

No Date. Bradford Royal Infirmary.—The Board of Management of the Bradford Royal Infirmary invite architects to submit competitive plans, with estimates, for the erection of a new infirmary on a site in Duckworth Lane. A block plan of the site, with a schedule of conditions and instructions, may be obtained from the Secretary Superintendent of the Royal Infirmary, Bradford, on receipt of a deposit of three guineas, which will be returned to each competitor submitting a bona-fide design. The Board have appointed Mr. Keith W. Young, F.R.I.B.A., to act as assessor, and they agree to accept his decision in the matter. The deposit amount will be returned to applicants who decide not to compete provided the instructions are returned within a month after the receipt of replies to the competitors' questions.

For a list of other competitions already announced and still open, see last week's issue.

OBITUARY.

Mr. C. H. Fowler.

Mr. Charles Hodgson Fowler, the eminent ecclesiastical architect, died at his residence, The College, Durham, on December 14, aged 70. He had recently been engaged on an important inspection of Rochester Cathedral, where he was consulting architect. While there he was suddenly taken ill, and was obliged to return home. For some time he made progress towards recovery, but had a relapse. The son of the Rev. R. Fowler, vicar of Rolleston, near Notts, he served his apprenticeship with the late Sir Gilbert Scott, and assisted him in the restoration of Durham Cathedral. Perhaps his most notable work was the designing of the plans for the restoration of the Chapter House at Durham, which was done in memory of the late Bishop Lightfoot. He also assisted in the repairing of the western towers at Durham Cathedral. Mr. Fowler filled the appointment of architect to the Dean and Chapter of Durham for over 40 years, and he succeeded the late Mr. J. L. Pearson, R.A., as consulting architect to the Deans and Chapters of Rochester and Lincoln. He was architect to the late Sir Tatton Sykes, who was engaged in the restoration of a series of churches on the Yorkshire wolds. Numerous parish churches in Lincolnshire, Nottinghamshire, Yorkshire, and Durham were designed by Mr. Fowler. He designed the school chapel at Cheltenham College, St. Ambrose's Church, Bournemouth, and St. Columb's and All Saints' Churches, Notting Hill. He was especially proud, says the "Times," of his work at St. Ignatius's Church, Sunderland, and St. Peter's, Malton, where he extended a church originally designed by him, and added a tower.

PLANS AND DRAWINGS IN THEIR LEGAL ASPECT.

BY A LEGAL CONTRIBUTOR.

Responsibility for Inaccuracy.

In preparing plans and drawings for the guidance of the contractor, the architect acts as the agent of his employer; but he has no authority to warrant that the plans, etc., are correct. If the contractor assumes that they are correct, and omits to make the necessary enquiries and measurements for himself, he may incur a serious liability (Thorn v. Mayor of London, 1876, 1 A.C., 120), and it is for this reason that a clause is usually inserted pointing out that the accuracy of the plans, etc., is not warranted. If the architect has power to furnish detailed or working drawings during the progress of the works, he may supplement the original drawings by giving further details, but he must not alter the original design. (R. v. Peto, 1826, 1 Y. and J. 37.)

No Charge for Tentative Designs.

It has been decided that an architect is not entitled to be paid anything for preliminary plans and drawings, inasmuch as these are in the nature of mere estimates which will lead up to a possible contract. (Moffatt v. Laurie, 1855, 24 L.J. C.P. 56.) In that case the judge said: "It is of every day occurrence for architects to send in plans for public buildings, taking the chance of being paid for their labour or not, as they may be adopted or rejected."

Architect's Position as to Faulty Plans.

Where an architect is employed to prepare plans and specifications, it may be taken that the arrangement between him and the employer embodies an implied term that the employer shall approve the drawings. But what is the effect of approval by the employer? Does it stop him from preferring a charge of negligence against the architect in case the design prove faulty, or the drawing inaccurate? In this connection it is material to notice that when a person undertakes and is employed to perform a work of skill and labour, and fails therein, so that his employer derives no benefit from the work, that person is not entitled to recover his demand, as the employer buys both his labour and his judgment, and he ought not to undertake the work if he does not know whether he can succeed or not. (Duncan v. Blundell, 1820, 3 Stark 6.) It would seem to follow from this that where the employer relies on the architect to advise him as to the feasibility of plans, etc., the architect cannot shield himself behind the fact that the employer has approved the plans. This principle is illustrated by the case of Smith v. Barton, 1886, 15 L.T. 294, where an agent for the purchase of a public-house was held liable in damages to his employer for negligently conducting the purchase, although he had advised his employer to go and examine the business for himself, and the employer did so.

Competitive Plans.

Where architects are asked to send in plans for a competition, it has been held that those who advertise for the plans are not entitled to use them if the competition is proceeded with. If the plans are used they must be paid for. (Landless v. Wilson, 1880, 8Ct. of Session. Case 289.) In that case an architect was employed to prepare plans for the erection of certain buildings which were not proceeded with. The owner, however, made some use of the plans, and the architect sued him for his fees. The owner pleaded in defence that the plans had been drawn on the footing of their being in competition. The sheriffs gave judgment for the plaintiff. On appeal, the Court of Session held that it lay on the owner to prove that the architect's employment was gratuitous, which he had failed to do, and they accordingly affirmed the decision of the sheriffs.

In Ward v. Lowndes, 1859, 28 L.J.Q.B. 265, certain commissioners published an advertisement offering a premium of £20 to the architect who should produce the best plan for a covered market house and hotel, provided that the person furnishing the selected plans should not afterwards be employed as architect for the said buildings. The plaintiffs produced a plan which they alleged was the best and most approved for the covered markets, but the £20 was not paid. They were awarded a sum of £20 by a jury, but it was held that the verdict could not stand.

Contractors Should Examine Drawings.

The fact that the drawings are usually made part of the contract makes it essential for the contractor to pay close attention to them. Any deviation may involve him in a claim for damages for breach of contract, and he would certainly not be entitled to recover anything from the building owner in respect of such deviation; for if a builder undertakes a work of specified dimensions and with specified materials, and deviates from the specification, he cannot recover on a quantum valebat for the work, labour and materials. (Ellis v. Hamlin, 1810, 3 Taunt. 52.) The mere fact that unforeseen difficulties crop up in the progress of works will not justify a deviation from the plans in order to meet those difficulties; and if a contractor undertakes to erect a building according to plans and a specification, under the supervision of an architect, the architect cannot change the terms without special authority. (Cooper v. Langdon, 1841, 9. M. and W., 60.)

Delay in Delivery of Plans.

It is an implied term of every contract for works that the employer shall deliver the plans in time. Where an architect is guilty of delay in providing plans, this may excuse the builder or contractor who is alleged to have delayed the execution of the works. This is on the principle that one of two contracting parties will be excused from the performance of a contract, when he is prevented by the wrongful act of the other party or his agent. (Roberts v. Bury Commissioners, 1869, L.R. 5.C.P. 310.) But there is apparently a duty cast upon the builder or contractor to apply for plans; otherwise mere delay in supplying them will not avail him. So in a case where the building owner was to be at liberty to re-enter in case of default by the builder, the builder sought to show that he had been delayed some time waiting for plans. As it did not appear that he had ever applied for the plans, the Court held that this was no excuse for delay. (Stevens v. Taylor, 1860, 2 and F. 419.)

Payment for Plans.

Payment for plans is sometimes made to depend on an event which may or may not happen. The following case is a good example of how undesirable it is from the architect's point of view to enter into any such agreement. It appeared that the plaintiff, an architect, agreed to lay out certain land of the defendant for building purposes, and to make all requisite plans on the terms that he should make no charge for his services, but that in the event of the land being disposed of for building purposes, the plaintiff should be appointed the architect on behalf of the defendant. Alternative provision was made for the payment of the plaintiff in case the land was laid out for building but he was not appointed architect, and for payment for his time and trouble in making the preparations in case the defendant or his executors should dispense with his services. The land was not disposed of for building purposes, and after the defendant's death his executors dispensed with the plaintiff's services without paying him any compensation. He thereupon brought an action claiming in respect of his time and trouble. It was held that he was not entitled to recover, as there was no understanding on the part of the defendant to dispose of the land for building purposes only; and the land not having been in fact dispensed of, the plaintiff was not, according to the contract, to be remunerated. (Moffatt v. Laurie, 1855, 15.C.B. 583.)

To prevent any dispute arising as to payment for plans, etc., in cases where the work is not carried through, the architect should insist on the insertion in the agreement of some such clause as this: "If the employer abandon the intention of executing the building, the said architect shall be entitled to a sum to be fixed beforehand, and to the return of his plans, drawings, and specifications."

Property in Plans.

Attempts have sometimes been made to establish it as a principle that the architect is entitled to retain plans and drawings which he has prepared. That there is no such rule of law was made plain in Gibbon v. Pease, 1905, 1.K.B. 810 (following the older case of Eddy v. McGowan, "Times," November 17, 1870). In Gibbon v. Pease the defendant, an architect, was employed as such by the plaintiff to carry out certain alterations to a house. He prepared plans and specifications, and superintended the work, which was eventually completed. The plaintiff, having paid the defendant his agreed fee, claimed to have the original plans and specifications delivered up to him. The defendant declined to surrender them, alleging that there was a custom to the effect that he was entitled to retain them in the circumstances. The Court of Appeal, before whom the case eventually came, decided that there was no such custom. The Master of the Rolls, in giving judgment, said: "It was held by the Court of Exchequer (in Eddy v. McGowan, supra) that such a custom, even if it were proved, would be unreasonable, and that the building owner need not pay for plans unless he obtained them. . . . In my opinion the contract in this case resulted in the making of plans the property in which passed to the building owner on payment of the remuneration provided for under the contract. I find no difficulty in distinguishing this case from that of a contract to paint a picture or to design a coat of arms, as to which no question of ownership could arise."

The two lectures on "The Art and History of British Leadwork" which were read before the Society of Arts in March last by Mr. Lawrence Weaver, F.S.A., Hon. A.R.I.B.A., have now been published in pamphlet form, price 1s.

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"The History of Architecture on the Comparative Method," by Mr. Banister Fletcher, published by B. T. Batsford, 94, High Holborn, has just been translated into Russian, and was published in St. Petersburg last week. It is doubtful whether any other English architectural text-book has received a similar honour.

THE WEEK'S NEWS IN BRIEF.

New Lecture Rooms at Cambridge.

In connection with this new building, which was described and illustrated in our last issue, it should be stated that the roofs are glazed on the system of Messrs. W. Edgcumbe Rendle and Co., Ltd., of London, S.W., as shown on the drawings.

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Strike in the French Building Trade.

At a meeting of the Federation of Building Trade employees held in Paris on December 11, it was decided to declare a general strike, and to continue it until the Government orders the liberation of the man Durand, who was recently condemned to death at Rouen for the murder of a non-striker.

* * *

A New Variety Theatre for Glasgow.

A company has been formed to acquire a central site on which to erect a high-class variety theatre, with accommodation for more than 2,000 persons. The building is to be of brick and steel, with a front elevation of Carrara ware. Mr. James Miller, A.R.S.A., F.R.I.B.A., is the architect.

* * *

Cottages Wanted at Spalding.

At a recent meeting of Spalding Rural Council, reports were received from various parts of the district with respect to the want of cottage accommodation. It was stated that young men were leaving the country and moving to towns because they were unable to get housing accommodation. It was unanimously resolved that the Council should make application for the Housing Act to be put in force.

* * *

Building Activity at Porthcawl.

In his report to the health and housing committee of the Glamorgan County Council last week, Dr. Williams, the county medical officer, said that between January and October of this year plans representing 212 dwelling-houses, eight shops and dwelling-houses, a new post-office, and two motor garages had been passed by the local authority. Sixty-three dwelling-houses and three shops and dwelling-houses had already been completed; 70 new buildings were at present in actual course of erection, 30 of which are nearing completion. Extensive improvements were in contemplation, and the resident population was annually increasing, and now amounted to 4,250.

* * *

A New Method of Road Construction.

To resist the destructive effect exercised by automobile traffic on macadam roads, by loosening the stone of the road so that the fine material which acts as a binder is easily driven out or blown away, the Superintendent of Road Construction has developed a prepared filler which has been given a trial at Ithaca, New York. This filler is intended as a binder in the top course only. The bottom courses of the road were built and rolled as for ordinary macadam, and the top course of stone was laid as usual, but before rolling this was covered with a layer of prepared filler made from stone chips, sand, and bituminous material, heated and thoroughly mixed in a concrete mixer. This layer, which was about 1½in. deep, was harrowed in with a tooth harrow until the top course of stone began to appear through the filler. The road was then rolled until it was firm.

The Cost of Cottages in Ireland.

At a recent meeting of Antrim Rural Council, the clerk supplied a statement of the average cost of each cottage in three schemes already erected for labourers as follows:—No. 1, 20 cottages scheme, each cottage £210 18s.; No. 2, 36 cottages, £245 16s. 8d.; No. 3, 92 cottages, £179 17s. 9d. (nearly).

* * *

Heating a Market.

The Treasurer's Committee of the Edinburgh Town Council has had under consideration a proposal as to the desirability of taking steps at as early a date as possible to introduce a heating installation into the Waverley Market, and otherwise make such improvement as might be found necessary for the convenience and comfort of the public attending the entertainments in the Market.

* * *

The Largest Mississippi Bridge.

The largest bridge across the Mississippi River was recently thrown open for traffic. It spans the river at St. Louis, Mo., and forms the most important link in the development of the system of inter-urban electric traction in that section of the United States. This bridge was begun about three years ago, and has just been completed at a cost of 4,500,000 dollars (£900,000). It is the largest bridge ever attempted by an electric railway company, and has a greater carrying capacity per lineal foot than any other bridge across the Mississippi. The carrying capacity of each of the two railroad tracks will be 12,000lb. per lineal foot, or 2,000lb. more than any other bridge, while each of the two roadways will sustain 3,000lb. Three of the river spans are 521ft., 523ft., and 521ft. respectively, and, in addition, there are two shorter spans, each 250ft. long, and three short shore spans of 150ft. each. The total length of the bridge, including approaches, is over 8,000ft., and it required about 15,000 tons of steel. The total width of the bridge is 65ft. The high water clearance is 50ft., the low water height being 35ft. more.

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Personal and Professional.

We learn that Messrs. Ronuk, Ltd., have been appointed sanitary polish manufacturers to His Majesty the King.

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Mr. Henry Adams, M.Inst.C.E., who has already served ten years as chairman of the examination board of the Society of Architects, has been again re-elected to that position.

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Mr. Arthur Wellesley Soames, who has been elected M.P. for South Norfolk with the substantial majority of 1,528, practised as an architect from 1882 to 1898.

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For the fourth year in succession, the Gas Light and Coke Company are making their consumers a New Year's gift in the shape of a reduction of 1d. per 1,000 cubic feet in the price of gas, this bringing the price down to 2s. 7d. As each penny by which the price is reduced means a saving to the Company's consumers of about £100,000 a year, these four successive annual reductions constitute striking evidence of the progress of the gas industry. The increasing popularity of gas for heating purposes, as well as for lighting, is a cause for congratulation to all those who are working towards the ideal of a cleaner and healthier city.

* * *

It is announced that the board of the Associated Portland Cement Manufacturers (1900), Limited, have unanimously elected Lord St. Davids a director and chairman of the company, Mr. F. A. White having resigned the chairmanship in order that it might be offered to Lord St. Davids. Mr. White becomes a vice-chairman in the place of Mr. H. Osborne O'Hagan, who resigned his vice-chairmanship for the same reason, but retains his position on the board as a managing director. Mr. E. W. Brooks has resigned his vice-chairmanship in order that it may be available whenever it seems desirable to fill the vacancy, but retains his position as a managing director.

* * *

In the notice under "Concrete Paving and Construction," in the Journal of December 7, p. 603, it was stated that "Mr. Hubert Todd was connected with the firm of W. B. Wilkinson and Co., of Newcastle-on-Tyne, and London, for 25 years, during the last twelve months of which he was their London manager," etc. "Months" is a clerical error; Mr. Hubert Todd having been for "twelve years" London manager to the firm mentioned—a very important difference. We regret the error, which, however, was not ours.

* * *

Potteries Town Hall Scheme.

A Local Government Board inquiry was opened at Stoke on December 13 with reference to an application to borrow sums of money amounting in the aggregate to £117,712. Of this sum, £34,848 is required for the extension of the Stoke-upon-Trent Town Hall; £6,000 for alterations at the Hanley Town Hall; £7,300 for purposes of the Longton Town Hall; £32,341 for purposes of public buildings at Burslem; £4,150 for the extension of the Cobridge public walks and pleasure grounds, Burslem; £3,000 for the purposes of the Longton Market Hall; and £15,942 for purposes of the Burslem Sewage Disposal Works.

* * *

A New School and 500 New Houses.

At a meeting of the Bedwas School managers at Newport (Mon.), on December 14, it was decided to recommend that a new school to accommodate 650 children be erected at Bedwas, where new sinkings were taking place, and where plans for 500 new houses have been prepared.

* * *

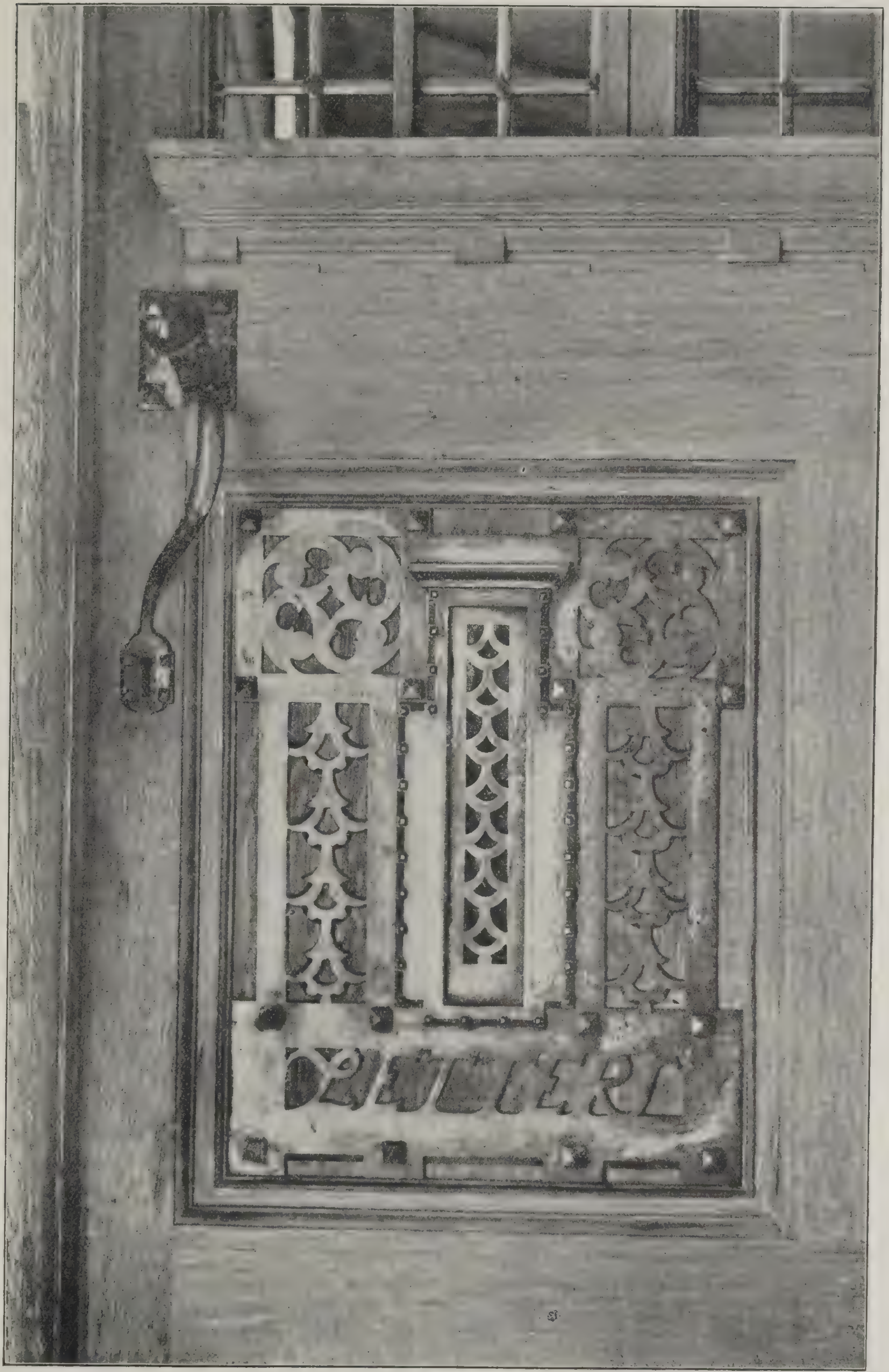
Sprague's Pocket Diary.

We have received the 1911 edition of Messrs. Sprague's exceedingly useful "Pocket Diary and Architects' and Surveyors' Memorandum Book." This contains pages for memoranda for every day, a number of formulæ, and statistics in regard to building materials—strengths, weights, crushing strains, etc.; sizes of drawing paper, and other memoranda for the office. In the present edition there is a new feature, consisting of lists of the Council and officers and committees of the Institute and the Architectural Association, with the dates and titles of papers to be read during the season.

* * *

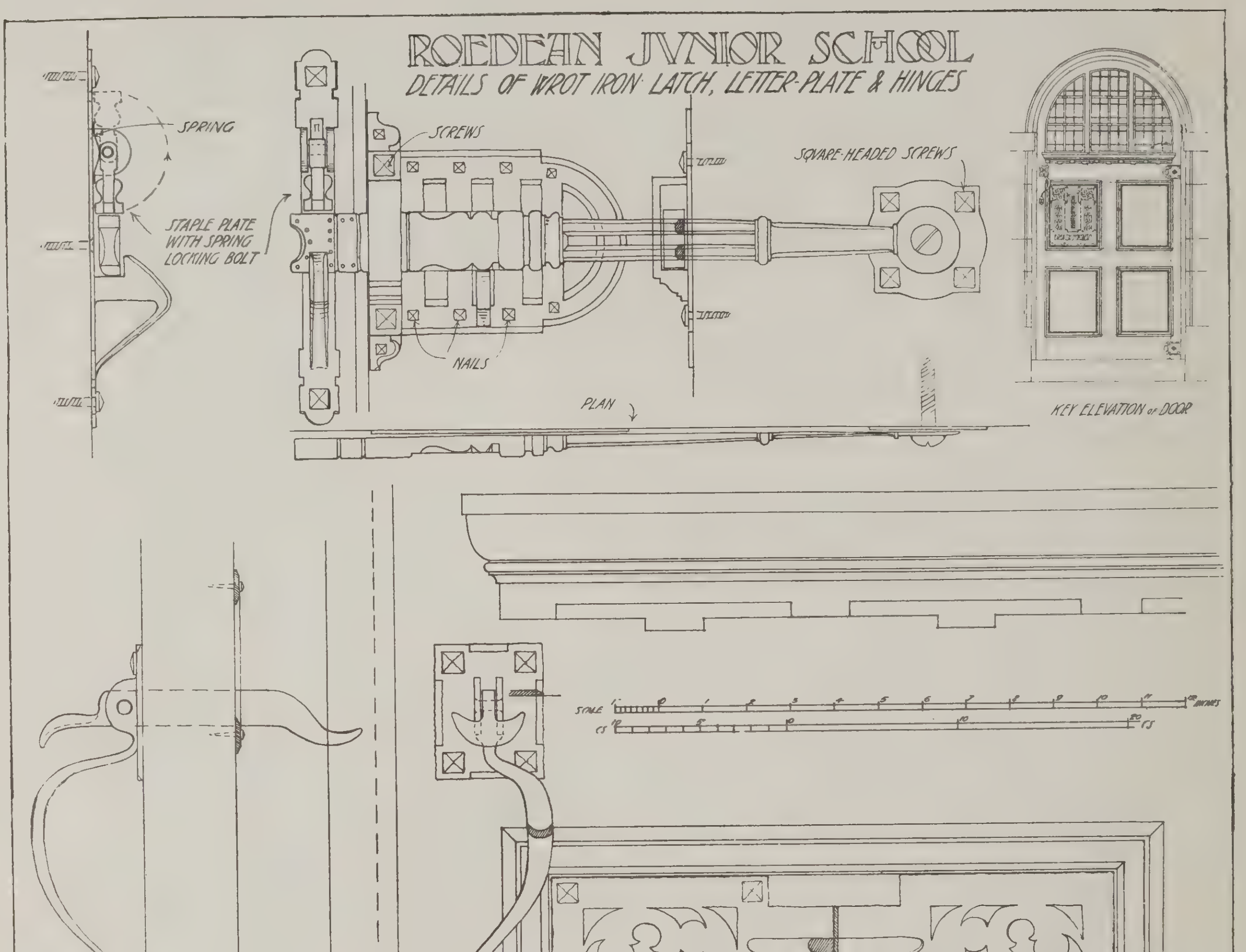
Bexhill Improvements.

Bexhill is proposing to erect a colonnade on the central front, with bandstand and semicircular shelter, a feature which the Mayor (Alderman Paton) believes will probably be unique on the South Coast. Strong representations were made by the commercial community on behalf of the scheme, at the Local Government Board enquiry, which was held last week.



This is executed in "armour-bright" sheet iron, and is a very fitting embellishment to the oak door. The details of the construction are shown by the drawing reproduced on the next page.

LETTER-PLATE ON MAIN ENTRANCE DOOR, ROEDEAN JUNIOR SCHOOL, BRIGHTON.
JOHN W. SIMPSON, F.R.I.B.A., AND MAXWELL AYRTON, A.R.I.B.A., ARCHITECTS.


ROEDEAN JUNIOR SCHOOL
DETAILS OF WROT IRON LATCH, LETTER-PLATE & HINGES
SPRING
STAPLE PLATE WITH SPRING LOCKING BOLT
SCREWS
NAILS
SQUARE-HEADED SCREWS
PLAN
KEY ELEVATION OF DOOR
SCALE
INCHES
HINGE
SPRING HINGE TO KEEP LETTER-FLAP SHUT
SQUARE-HEADED RIVETS
TRACERY PATTERN REPEATS
HINGE
LETTERS
SQUARE-HEADED SCREWS
BOTTOM HINGE TO HAVE SHOE UNDER PIN (ALSO HINGE PLATE SCREWED TO FRAME) CARRIED DOWN TO FLOOR LEVEL
5 TWO INCH SCREWS SET DIAGONALLY

FIRE-PREVENTION NOTES.

Gypsum for Fireproofing. Gypsum is used as a fireproofing material in the form of blocks, plaster board and plaster on metal lath. The results of considerable experience on its application in these three forms are available and have recently been brought together by Mr. H. G. Perring in a pamphlet which the National Fire Protection Association (United States) is sending out. Preceding the data relating to actual construction with the material is information regarding the fire-resisting qualities of gypsum, from which the following notes have been taken. Plaster of Paris is made from gypsum, which is a sulphate of lime; chemically, a hydrous calcium sulphate, the formula of which is expressed as $CaSO_4+2H_2O$. Interpreted this formula may be expressed as 32.5 per cent. by weight of calcium and 46.6 per cent. sulphuric acid chemically compounded and holding 20.9 per cent. of water of crystallisation. Plaster of Paris is made by calcining the gypsum rock to drive off part of the water of crystallisation. This material has the valuable quality of taking up water and, by a crystallising process, becoming again converted into gypsum. Gypsum is a soft mineral, ranking number 2 in a scale of 10 in Moh's scale of hardness. It has a specific gravity of 2.32 and weighs 145 lbs. per cubic foot. Plaster of Paris has a specific gravity of 1.81, but upon setting with water returns to a specific gravity of 2.32. Delicate experiments have shown that plaster in setting neither contracts nor expands.

Plaster Fire-Proofing. Plaster has been generally recognised as a fireproofing material in Europe for many years, Mr. Perring states, and is to-day used almost exclusively for partitions and to a great extent for floors in France and Germany, and in England for many of the Government buildings. In America, despite the prejudice against plaster fireproofing over 1,000 of the large fireproof buildings of the country have been fireproofed either wholly or in part by plaster in the form of plaster blocks, a large number having plaster floors. Metal lath and plaster for partitions has been used to a great extent, and in the smaller buildings plaster board and plaster.

Fire Tests of Gypsum Products. Mr. Perring discusses at some length the various fire test requirements, and gives a list of fire tests of gypsum products. In summarising Mr. Perring treats the various classes of gypsum products, but only the results in two classes are repeated here. Plaster blocks in 18 tests of fire and water for periods of from 1 to 2 hours stood successfully, resisting the passage of flame, smoke or water, and were stable and strong after test. These tests have shown that the effect of a fire of 2 hours' duration is but little greater than that of 1 hour. The effect of one hour of high temperature fire is to recalcine the block to a depth of about ⅜in., while 2 hours will carry the recalcination to a depth of ¾in. The effect of a stream from a fire hose is to wash off this recalcined material. In seven tests of metal lath and gypsum plaster the effect of high temperature fire for 1 hour was to recalcine the plaster as in the blocks to a depth of about ⅜ to ½ in. The application of water from a fire hose will wash off this recalcined material and occasionally erode the material sufficiently to expose patches of the metal. That, however, is exactly what might have been expected.

Plaster in Actual Fires. Few fires have occurred in buildings in which plaster has been used for fireproofing, but the following are cited as indicating more than a laboratory test: On February 6th, 1906, at 9 o'clock, a fire occurred in the Engineering Building in the University of Pennsylvania, Philadelphia. The fire spread so rapidly that a second alarm was sent in 15 minutes after the start of the fire. Two fire alarms brought out nine engine companies, which played 15 streams of hose on the fire until 2 a.m., at which time the fire was considered past the dangerous point, and all but one engine went home, the remaining engine playing a stream of water upon the smoking embers until 7 a.m. when the fire was pronounced completely out. The building was erected in 1892, had brick exterior walls and an interior construction known as mill, or slow-burning construction; that is, the column and girders were of heavy yellow pine timber and the floor of 3-in. yellow pine. The trim of the rooms was also of yellow pine; a structure well calculated to burn with intense heat when the fire was well started. The partitions were fire-proof, being made of gypsum plaster blocks 3-in. thick. Despite the intense heat and the many tons of water thrown into the building the partitions remained intact and would have required no repairs beyond replastering to fit them for use again. These partitions prevented the spread of the fire and saved a considerable portion of the building from any damage whatsoever, preventing the loss of a valuable engineering library, which was in a room completely shut off from the fire by the gypsum tile partitions.

A "Fireproof" Apartment House. On March 4th, 1910, a fire occurred in the Alwyn Court fireproof apartment house, New York City. The interior columns were fireproofed with 2-in. U.S. Gypsum Company's composition plaster blocks with an air space between blocks and columns. Partitions were of 3-in. plaster blocks set in wood frame work (wood door "bucks"). The hallways were formed of 3-in. composition blocks with kalamein doors to apartments. Many of the rooms contained an unusual amount of lumber in the form of wood trim, parquet flooring, side and ceiling paneling and other decorative woodwork. The following extract is taken from the report of the New York Board of Fire Underwriters: "The ninth and tenth floors in the duplex apartment were gutted except the northerly rooms of the tenth, which were badly damaged. The dining room and reception hall of west apartment on eleventh floor were practically gutted, with heavy damage in kitchen and moderate damage in other rooms. In the west apartment on twelfth floor the dining room, reception hall and living room, including salon, were practically gutted; considerable damage in kitchen and maids' room; only moderate damage in northerly rooms. The west apartments immediately below the floor where the fire started had considerable water on ceilings, walls, and floors; part of ceiling plaster had fallen off in a few rooms. There was no fire and but little water damage in easterly apartments, including those above the eighth. There seems to have been no structural damage to the steel frame or its fireproofing; the lower flanges of floor beams were protected only by plaster finish, which fell off and exposed the flanges to considerable heat, but no deflection of beams is apparent. The channel shaped steel lintels over dining room windows were softened by the heat and deflected, particularly those on the twelfth floor. The 3-in. plaster block partitions are intact, except around the doorways, where they were supported by wooden framework, which was entirely burned away and caused the blocks to fall."

Fire-Resistance of Gypsum Plaster. Analysing the special features of gypsum plaster in general, which make the material desirable as fireproofing, Mr. Perring draws the following conclusions:—(1) Low heat conductivity is an essential point. In partitions heat is not conducted through to set fire to furnishings on the opposite side. In the protection of structural steelwork the steel is protected from the weakening action of heat. The heat penetrates the plaster at such a slow rate that in fires of ordinary duration the metal would hardly get warm. (2) Tests and experiments have failed to indicate any appreciable expansion of plaster under heat action. (3) Materials of a nature that expand under heat readily contract when water is applied to the heated surface. This contraction is often so severe as to cause the bursting of the material. Plaster partially recalcines under high heat action, and the subsequent application of water removes this recalcined portion, but generally will withstand severe water application, there being no indication of bursting. (4) Any material to be used for fireproofing must not burn or support combustion. Plaster is incombustible. (5) Lightness is essential in fireproofing, as the fireproofing at best is dead load on a building and plays no part in the support of the structure. Plaster is the lightest practical fireproofing material. (6) Plaster fireproofing has sufficient strength for use in partitions and column covering, and in fires will stand up reliably against the impact of fire streams. (7) Plaster is adaptable to any form of construction. Where used in slabs they are readily sawed or cut to fit any desired location, and the use of the material in the plastic state will cover any possible condition of construction. (8) The desirable fireproofing material is one that combines all the fireproofing features with low cost. Plaster is low in cost.

Merits of Plaster Blocks. Trim can be nailed to plaster fireproofing without the use of wood blocks or grounds, saving the cost thereof and omitting combustible material from the building. Plaster blocks or boards are true and even, and reduce the cost of plastering to a minimum. The blocks are made of pure gypsum and wood fibre. Changes in partitions can be made with a minimum of dirt and discomfort. Where a door is to be cut in a partition a hole is bored through with an auger, a keyhole saw inserted and sufficient cut made to insert a large saw, after which the opening is neatly cut, the frame inserted and the trim covers the edges so that no plastering beyond the pointing up around the door buck is necessary, and the decorations are not destroyed. The blocks should be laid with core holes horizontal, with joints broken vertically. They should be laid in gypsum mortar consisting of one part gypsum plaster mortar and three parts sand. The joints should not exceed $\frac{1}{2}$in. in thickness.

Metal Ceilings. Metal ceilings, which, especially in America, are extensively used in fire-resisting modern buildings, were employed as far back as 1840 by the Germans, in the construction of large buildings and factory rooms. But at that time their artistic possibilities were not dreamed of; their merit lay solely in their being fireproof. How long these first ceilings endured is not positively known, but as they were not exposed to the elements, it is thought they outlived the buildings in which they were used. These first ceilings were shallow embossed steel sheets—embossed more to fit evenly than for any other reason. Their use was restricted to buildings in which they were absolutely necessary, no one foreseeing to what length the idea might be improved. Up to the year 1895, the metal ceiling industry in America remained practically undeveloped. A few manufacturers, it is true, made ceilings before that time, but they were lacking in artistic effect, and were seldom used in any buildings but those necessitating absolute fireproof construction. The designs were of the straight line variety, necessitating only shallow embossing, which turned out sheets very unattractive at best. Not that metal ceilings had not noticeably improved since their origin; but the result of these improvements was merely the production of ceilings of stereotyped designs which failed to appeal to the artistic eye. They were also hard to apply, as they were made in steel sheets. Architects ignored them, and used other forms of interior trimming which produced better decorative effect.

Artistic Designs Introduced. It bcame evident, however, that there was a real field for metal ceilings, and that they would gladly be used if a range of artistic design and variety could be had. The idea was conceived by the Berger Manufacturing Co. that steel dies could be made to produce ceilings of designs different from any before used; these were to be true classical designs. Up to this time deep embossing was regarded as impossible with the sheet metal used. As nearly all of these classical designs required very deep embossing, radical changes had to be made, both in the form and construction of the dies and in the processes of pressing so as successfully to reproduce the ceilings without breaking the sheet metal during the process. After a long period of experimenting, these difficulties were surmounted, and many minor improvements were incorporated facilitating ease of application. Artistic dome and beamed effects are now possible on account of the ceilings being made in forms as well as in sheets. All parts are shaped for easy application and perfect matching. Eleven basic, classic designs have been adopted, embracing Greek, Roman, Romanesque, Gothic, French, Italian, and German Renaissance, Rococo, Moorish, Empire, and Colonial Art. From these basic designs, which include heavy cornice and border forms, centre plates, etc., hundreds of combinations are offered to select from. For large churches, public buildings, and structures built along artistic lines, where architectural style requires special designs, unique combinations are offered for the builders' selection.

Fireproof Paints. Although, in the strictest sense of the term, the production of a fireproof paint seems impossible, nevertheless, there are paints or coatings which may be applied to wood which will for a time prevent combustion. It is the general opinion, however, that paints of this nature are not durable, and require frequent renewing. Another complaint has been that these so-called fireproof paints, when subjected to the action of fire for any considerable time, burn, and, flaking off, expose the wood beneath to the action of the fire. Many of these paints depend upon some soluble material for their fireproof qualities. It can readily be seen what the action of repeated rains would be upon such a paint. An engineer connected with one of the largest underwriters' companies in the United States declares that those companies do not consider that there is such a thing as an absolutely fireproof paint. This same engineer considers the whitewash which is recommended by the Light House Board, United States Treasury Department, to be as good as the ordinary fireproof cold-water paint for inside use. The recipe for this particular form of whitewash is as follows: Slake $\frac{1}{2}$ bushel unslaked lime with boiling water, keeping it covered during slaking. Strain it and add one peck of salt, the salt being dissolved in warm water. Three pounds of ground rice worked up to a thin paste in boiling water. One-half pound powdered Spanish whiting. One pound clear glue. These two dissolved in hot water. Mix all together and let stand for several days. Use hot with a brush.

Boracic Acid as a Fire-Resistant. Paint experts have said that any good paint may be made more resistant to fire (not absolutely fireproof) by adding one pound of boracic acid to each gallon of paint. This acid comes in the form of a powder or flaky material, and, when subjected to heat, fuses and prevents air from getting at the wood by forming a sort of glassy coating over the wood.

Painter's Liability for Fire. A workman was engaged in burning off the old paint from the outside of a window case. The work was completed about $1\frac{1}{2}$ hours before the men left and there were then no signs of fire. About three-quarters of an hour later, however, the sash case was discovered to be on fire, and was put out. The insurance company claim that the painter is responsible. The incident, as a contemporary remarks, raises a very delicate point of law respecting the liability of a tradesman in the matter of fire insurance when engaged on repairs or in painting the property of a client. The position of the owner of the property is clear. His insurance policy covers his loss, and he will claim upon the insurance company. The point is whether the insurance company can legally claim upon the painter for the damage done. Our contemporary thinks that some responsibility attaches to the painter, but is of opinion that negligence on his part would be required to be proved, and having regard to the fact that the use of a blow lamp in removing old paint is a recognised trade custom, it would be difficult to prove negligence. Much would also depend upon the terms of the contract, if any, under which the painter was working. The contract might contain a clause which held the contractor responsible for all damage done which might be worded to include fire.

PICTURE EXHIBITIONS.

The Fine Art Society.

There are two fine minor exhibitions on view at this gallery. Mr. Warwick Goble, who exhibits water-colours illustrative of "Japanese Fairy Legends," is a new name to us, but he is certain to be heard of again, for his drawings are characterised by an inventive fancy and most beautiful and delicate execution. He perhaps owes something to M. Dulac, in the general style and feeling of his designs, though the method of execution is different. Nearly every drawing is good, and some are exceedingly beautiful in design and colour. In another room in the gallery is a collection of landscapes by Mr. W. Egerton Hine, mostly coast scenes in the South of England. These are landscapes of a high class, in a finished but sufficiently broad water-colour style. Mr. Hine seems to have a special faculty for treating rather waste seaside scenes, sandhills, etc., as in "The Dunes," "Studland Beach," and "An Eastward day in August." Between these two exhibitions, the Fine Art Society is worth a visit at present.

Maclean's Gallery.

At Maclean's Gallery in the Haymarket is an exhibition of the class of work entitled "Coloured Etchings," which is rather a mixed kind of technique. The ground work of these pictures is done by the etching-needle in the ordinary manner, and the plate is coloured in a massed colouring, giving different colours to different portions of the work, and a single impression with this colouring taken off. Each impression requires the colouring to be renewed, so that printing is a slow process. The general effect is somewhat like photo-lithography, but with a ground work of line drawing which is the work of the artist. The examples at Maclean's Gallery are all by French artists. There are some fine broad landscape effects among them, the best being those by MM. Antoni, Chabanian, and Jourdain.

The Carfax Gallery.

The "Chinese Studies," by Miss Vera Waddington, are worth seeing as a set of very clever illustrations of Chinese character and personality; they include also some sketches of Chinese architecture. The "Imperial Tomb, Moukden," with its row of absurd-looking animals flanking the approach to it, looks like a kind of childish travesty of the Egyptian and its avenue of sphinxes.

The Dowdeswell Gallery.

"Old-World Tours in Belgium and Holland," a collection of water-colours by Mr. W. L. Bruckman, sounds very attractive, but is rather a disappointment owing to conventional and loaded style of the drawings, the emphasis of mortar joints in body-colour, etc. Some curious old bits of architecture are shown in detail.

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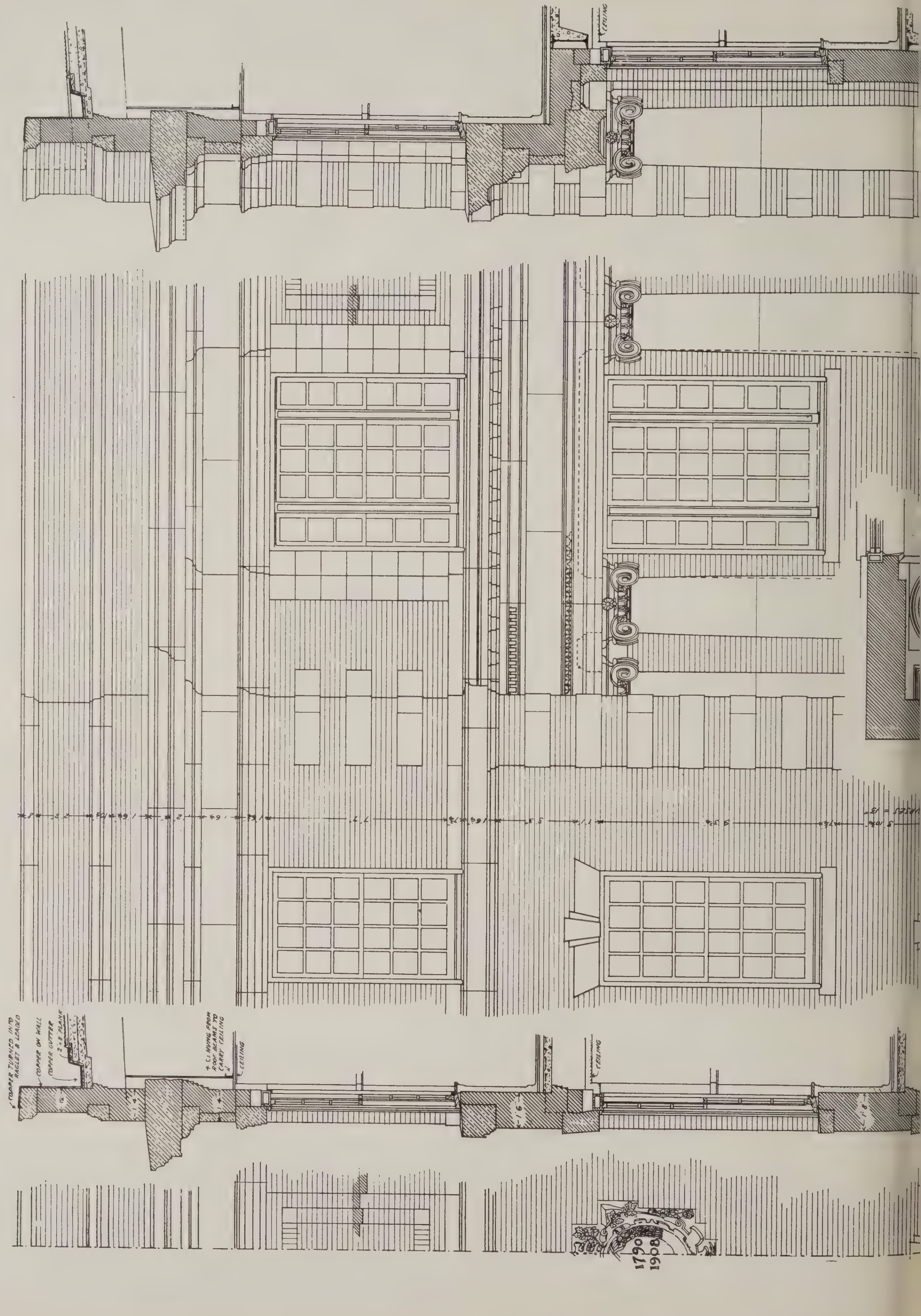
CEILING
COPPER TURNED INTO RAGLET & LEADED
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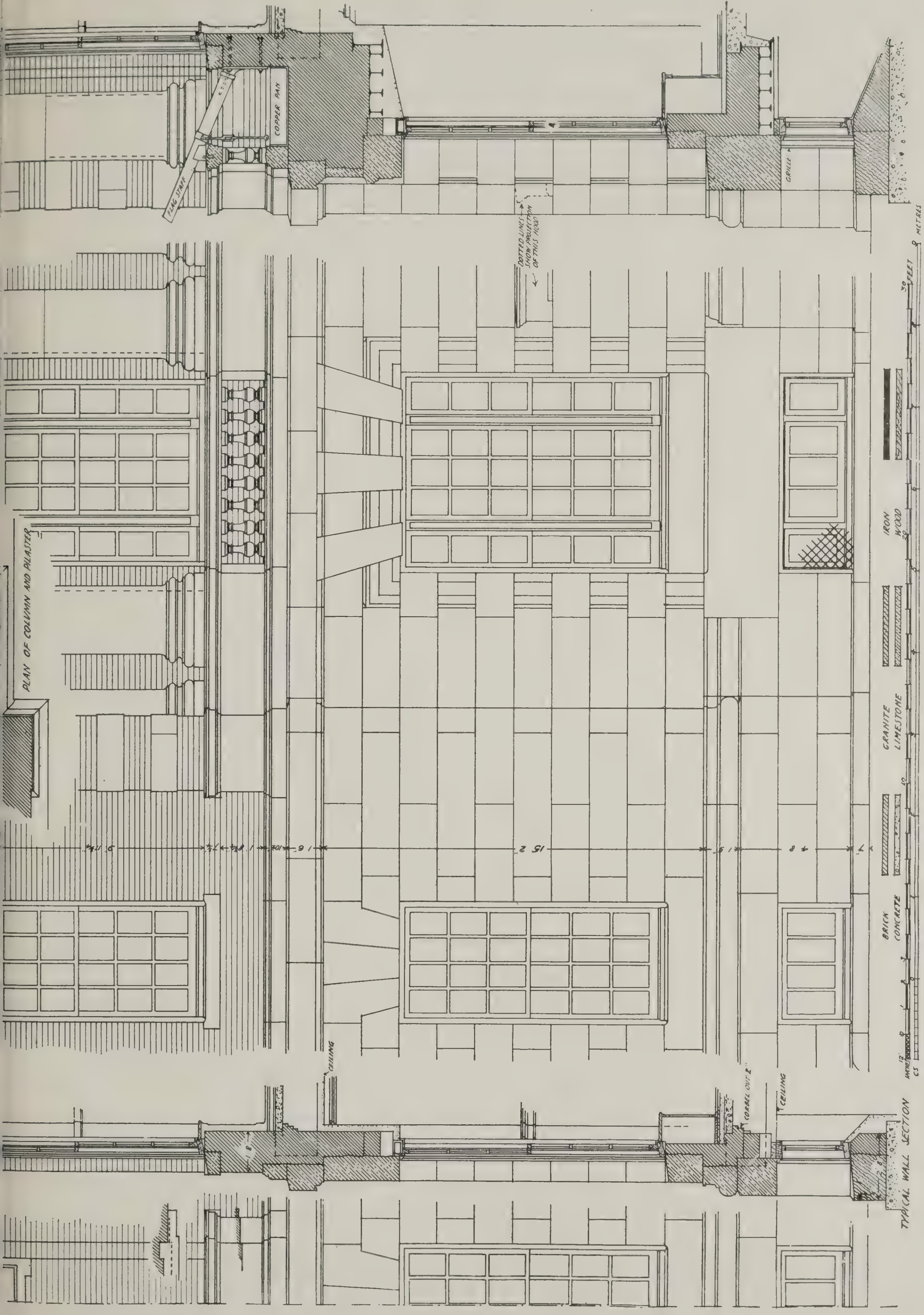

THE FRANKLIN UNION, BOSTON, MASS.: DETAIL OF CENTRE PORTION OF MAIN FRONT.
R. CLIPSTON STURGIS, F.A.I.A., ARCHITECT. DRAWN BY EDWIN GUNN, A.R.I.B.A.

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SOCIETIES' MEETINGS.

Birmingham Architectural Association.

Mr. Arthur Keen on Wren's Churches.

Mr. Arthur Keen, F.R.I.B.A., the President of the Architectural Association, gave on December 10 an illustrated lecture before the members of the Birmingham Architectural Association, his subject being "Sir Christopher Wren's London City Churches." The lecturer pointed out that one result of the fire of London was that we now possessed a unique collection of buildings designed by Wren to take the place of those that were destroyed. Out of the fifty or more that Wren built, the greater number were still in use, and were full of interest and architectural beauty. Wren was distinguished above all things by versatility and resource, and although the Gothic tradition in church building had continued until well into the seventeenth century, most of Wren's churches were uncompromisingly Classic, and entirely different in treatment from all that preceded them. The different types of churches were described by the lecturer—those that formed a simple hall without either aisles or chancel; those with a nave and aisles but still without a chancel; those on the Greek cross plan with vaulted ceilings intersecting over a central square; and, finally, the domed churches, such as St. Mary Abchurch and St Stephen's, Walbrook. Everywhere, although the ground plans of the churches were practically alike, the architectural effects produced differed to such an extraordinary extent that there seemed to be no limit to the inventive power of the architect. All the churches were interesting from one point of view or another. Many of them were of remarkable beauty, and in not a single instance was the design mean or meretricious. Mr. Keen concluded his lecture by calling attention to the irreparable loss occasioned by the carrying out of the Union of Benefices Act, with the consequent sale and demolition of churches, and he made a strong appeal for the preservation of all Wren's churches that remain.

Sheffield Society of Architects.

Mr. Purchon on "The Architecture of Cambridge."

There was a large attendance of members of the Sheffield Society of Architects and Surveyors at Sheffield University, on December 8th, on the occasion of a lecture delivered by Mr. W. S. Purchon, A.R.I.B.A., Lecturer of the Department of Architecture at Sheffield University, who chose as his subject "The Architecture of Cambridge."

The lecturer referred to the general belief among architects in the value of measuring and sketching worthy buildings as a part of an education in architecture, and to the summer course at Cambridge arranged in connection with the Department of Architecture in the University of Sheffield. He hoped to show that it would have been difficult to find a more suitable place than Cambridge for the purpose. He proceeded to trace the development of English architecture as exemplified by Cambridge buildings. Starting with the Saxon tower of St. Benedict's, he dealt with the Norman Round Church, and a few Gothic buildings, pointing out that the finest Gothic work in Cambridge was that of the Perpendicular period of which King's College Chapel was one of the finest examples. After dealing with some picturesque buildings of the Early Renaissance, the lecturer passed on to some of the fine work by Wren at Pembroke and Trinity, and to some of the buildings of the Later Renaissance by such men as Gibbs and Stephen Wright. He then dealt with the Greek and Gothic revivals, and some examples of recent work. "We have regretted," he said in conclusion, "much of the destructive work of the eighteenth century, and some of the constructive efforts of the nineteenth; we have doubtless admired a good deal of the work of men who have only recently passed away, and in the work of those who are still with us I hope we have seen something which makes us feel that architecture is still a living force. To be called upon to add to the magnificent architectural treasures of Cambridge is one of the greatest responsibilities, and one of the greatest honours which can fall to the lot of an architect, and in the work of the last few years we must feel, I think, that the architects have realised this responsibility, and have designed buildings worthy of their surroundings."

Leeds and Yorkshire Architectural Society.

Mr. Mowbray Green on the Architecture of Bath.

At the meeting held on December 8, Mr. Sydney D. Kitson, F.R.I.B.A. (president), in the chair, Mr. Mowbray A. Green, F.R.I.B.A. (late president of the Bristol Society), read a paper on "The Architecture of Bath."

The great building era of the eighteenth century in Bath was, said Mr. Green, directly attributable to the renewed interest taken by physicians in the healing waters. Within fifty years of the opening of the century, Bath had risen from a quaint remnant of Mediævalism to a fashionable and flourishing health resort; almost the whole of the charming Elizabethan and Jacobean work having disappeared, and the later Renaissance taken full possession.

In addition to changes within the city, extensive schemes of development were effected in many directions beyond the walls, so that by the end of the eighteenth century the older portion of Bath formed but a small centre of the new.

Prominent among those concerned with the making of Classic Bath was John Wood, a Yorkshireman, who, when but twenty-five years of age, commenced the building of the Queen Square scheme just beyond the N.W. boundary, one of the first of many noble groups of palatial dwellings by which he was to enrich the city, among them being the Grand Parade and Royal Forum (now the North and South Parades), the Circus, and the Crescent.

Outside of Bath, Wood's chief work was the magnificent house at Prior Park, built for his patron, Ralph Allen, for the purpose, it is interesting to note, of advertising the local stone. Conceived in a fine scale, it was in perfect harmony with its surroundings, and its position on a rising slope was enhanced by the fine sweeping stairs added in 1830-36 by H. E. Goodridge.

Wood died in 1754; he had been a busy man, commercially successful, and not forgetful of his own interests, but leaving behind such a record of buildings as few could boast.

Twenty-seven years before, he had found Bath emerging from the squalor of a Mediæval city, and far from being what it should have been as an important watering-place; and during this period he had seen erected some of the most palatial groups of dwelling-houses in any city in the kingdom.

His schemes were laid out with a sense of nobleness and fine effect, adjusting every part to the whole, and the whole to the surroundings, surroundings which had to be considered, both in relation to their present aspect and their future development. Masterly and bold in design, the façades of his buildings were grouped up in such a manner as to produce harmony and a feeling of proportion.

Wood was a man who had a very capable insight into the turn which events might be likely to take, and he tried to persuade others to see with him, but did not succeed far in this respect. Thwarted time after time, he pushed ahead and insisted on the people of his day accepting what they certainly did not always understand.

He was ably followed in his work by his son, who completed many of the unfinished schemes and built the Assembly Rooms between 1769-71.

Under an Act of 1789, a large portion of the city was rebuilt by Baldwin, his work including Bath Street, with its interesting colonnades; he also commenced the Pump Room, which was completed by John Palmer.

Pulteney Bridge, erected about 1770, would seem to be the only work of Robert Adam, although his manner influenced much of the later work in Bath.

The styles of the eighteenth century could be divided into three groups; that of the first twenty-five years, when the gabled houses and large sash windows surrounded by bolection mouldings, when the interiors were panelled with wood, and the rooms small and comfortable; the next fifty years, when the work was modelled on Classic Palladian lines, and the interiors became spacious and dignified, and plaster work was brought into general use; and the last twenty-five years, when the free manner of Adam came into vogue, and the strong methods of earlier times gave way to detailed and abundant decoration.

The lecture, which was profusely illustrated by slides, was enthusiastically received by the meeting, and in replying to a vote of thanks proposed by Mr. W. Whitehead, A.R.I.B.A., seconded by Mr. Ascough-Chapman, F.R.I.B.A,, Mr. Green referred to the lack of any information regarding Wood's early life, save that he came from Yorkshire; he attributed the decay of Renaissance tradition in Bath, as elsewhere, to the Greek revival with its consequent upsetting of many preconceived ideas of design and detail.

The next meeting will be at the society's dinner, to be held at the Queen's Hotel, Leeds, on January 12, 1911.

Glasgow Architectural Craftsmen's Society.

The Planning and Equipment of Abattoirs

At the usual fortnightly meeting of the Architectural Craftsmen's Society, Glasgow, held in the Technical College, on December 9, Mr. Boyd, vice-president, in the chair, Mr. Cook, clerk of works, read a paper on "Abattoirs, their Planning and Equipment." A brief description was given of the Continental markets and slaughter-houses to show their vastness, and how costly they were. Some of the principal by-laws of this country relating to abattoirs were stated, and reference was then made to the two slaughter-houses in Glasgow of which the lecturer had had experience. The Foreign Animals Wharf at Merklands was fully described, special reference being made to the destructor, which had been specially designed for this building. The other building, that at Moore Street, will be, when completed, the finest in the United Kingdom. Two special features are (1) the use of thin reinforced concrete walls round the killing rooms, thereby effecting a saving of space; (2) the method of disposing of the excreta. This problem is solved by placing the excreta in a sump below the killing room, and afterwards emptying into carts which go along the subway. The lecture was illustrated with lantern-views of the two slaughter-houses mentioned, and of the abattoir recently erected by the Edinburgh authorities.

Manchester Society of Architects.

Mr. Raymond Unwin on City Development Plans.

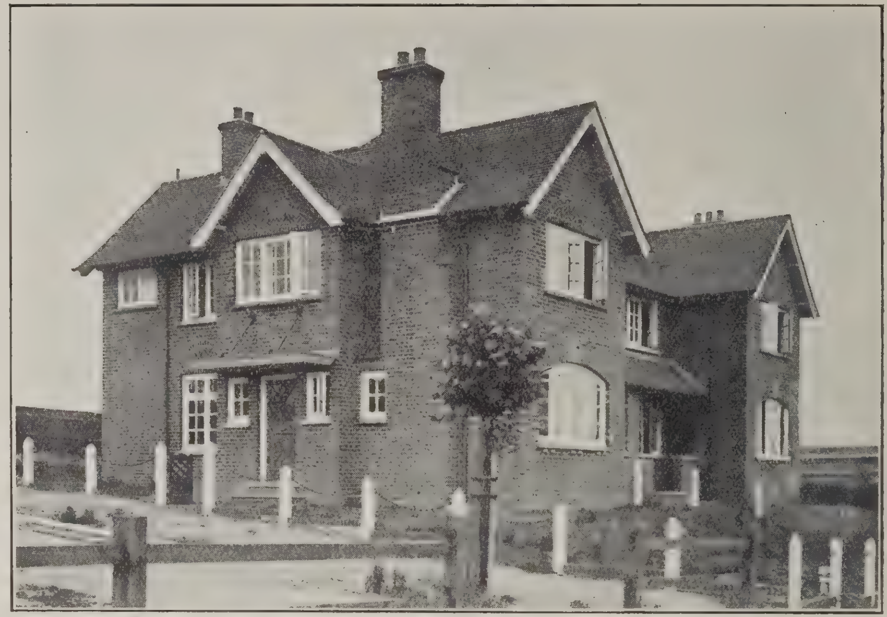
On December 7, before a very large attendance of members, Mr. Raymond Unwin gave a lecture on "The City Development Plan." He first traced the development of the planning of cities from mediæval times. The emergence of the formal type of plan was shown by three slides of plans of Paris, the first the seventeenth century city, the second dated 1735, prior to the Revolution, and the third a post-Revolution plan dated 1842. He showed how the plans of the parks outside, the early city became embodied in the street lines as the city extended, and resulted in the formation of focal points with connecting vistas.

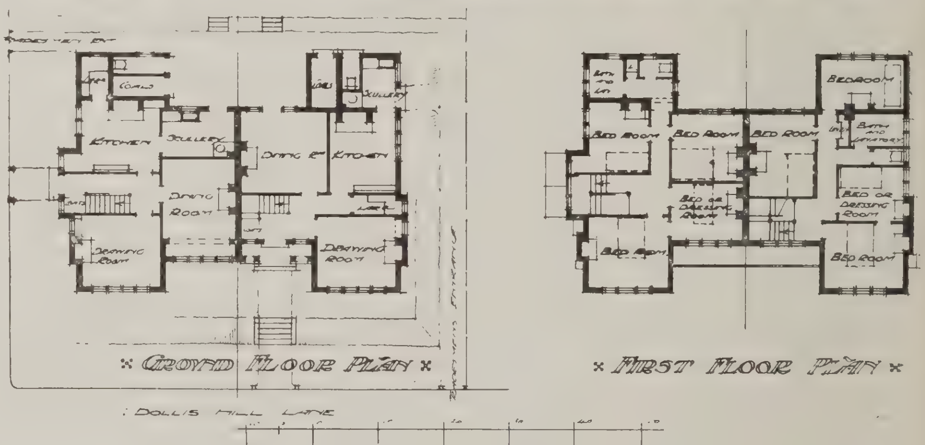
The early German plan of Mannheim led on to later German suburban planning, which so often missed perfection, and which was lacking in the imagination of French work. The movement in Germany led by Camillo Sitte was based on a careful study of the customs of the land, and was characterised by the closing of the vistas leading from the squares by buildings after the mediæval manner, and a careful treatment of the junctions of roads. American cities were often laid out in strictly formal lines, regardless of the contours of the land, and of the important consideration of diagonal access from point to point, with the result that when diagonal roads were laid out across the rectangular plans, awkward corner sites were inevitable. Even in American plans of to-day, the framework of main roads was filled in with a network of rectangular lines spreading over the whole plan, instead of each area being treated by itself, with its minor roads in proper relation to the framework. The Gothenburg plan was instanced as a fine example of a plan in which the framework had been dictated by the contours of the land, but in which a splendid formal effect had been obtained. The different characteristics of straight or curved streets were next treated. The horizontal or vertical lines of the sides of a straight street changed in emphasis as they reached from the foreground to the distance, whereas in a curved street, such as Regent Street, the buildings further down the concave side of the street were often more nearly in front elevation than were the nearer ones. As the opposite was the case with the convex side, Mr. Unwin argued that it should be treated in a different way from the concave side, and criticised the Regent Street design as failing in this respect.

Mr. Unwin dealt very exhaustively with the principles of modern suburban planning, and treated by the direction of roads, which should in the main run north and south. When the roads were east and west, it involved planning the houses with north and south frontages. The living-rooms had then to be placed all on the south side, giving too wide a frontage, and resulting in very awkwardly planned houses. The treatment of angles, the ends of vistas, and the breaking up of frontages, were finely illustrated by photographs and drawings on the screen; and the study of the plans such as Versailles was suggested as being fruitful of ideas for the lay-out of the squares and open spaces of suburbs.

A vote of thanks was proposed by Mr. Lodge, and seconded by Mr. Phil Parker, and an interesting discussion followed, in which the president (Mr. P. S. Worthington), Mr. Paterson, and Mr. Hindle took part.

J.T.H.





These houses are built externally with red sand-faced bricks and tiled sills, with red sand-faced tiles on the roof. The external woodwork is painted white, entrance doorways green, and porch, ceiling beams, and panelling stained with Carbolineum. On the first floor are four bedrooms, linen cupboard, bathroom, lavatory, etc. The architect was Mr. Edward Hastie, of John Street, Adelphi, and the contractors were Messrs. W, Gibson and Co., of Hendon Lane, Finchley. N.W.

PAIR OF SEMI-DETACHED HOUSES ON THE OWEN-OWEN ESTATE, CRICKLEWOOD, N.W. EDWARD HASTIE, ARCHITECT.

Leicester and Leicestershire Society of Architects.

A special meeting of the Leicester and Leicestershire Society of Architects was held at the Society's room, No. 5, St. Martin's East, Leicester, on December 8th, when all architects in practice in the Society's province, and their senior assistants, were invited to attend. Mr. W. M. Cowdell, President of the Society, was in the chair, and about forty gentlemen from all parts of the Province attended. Mr. A. W. S. Cross, R.I.B.A., and Mr. G. Hubbard, F.S.A., member of the Council of the R.I.B.A., gave a full explanation and details of the scheme for the admission of Licentiates to the Royal Institute of British Architects. Mr. Hubbard started by tracing the history of the R.I.B.A. from its earliest days, and its development from the Architectural Society instituted in 1831. Both speakers very clearly and concisely pointed out the great advantage, not only to architects, but to architecture, likely to result from an efficient registration bill, and urged the necessity for the Institute to have the great majority of the profession behind it before approaching Parliament.

The advantage to individual members of the profession who, by reason of their age or the arduous duties of their calling, cannot now hope to pass the very severe examination enabling them to obtain the diploma of Associate of the R.I.B.A., of being permitted until March 23rd, 1911, to join the temporary class of Licentiates, was clearly shown to those present. The possibility of the older Licentiates passing some form of examination enabling them to become Fellows of the R.I.B.A., was welcomed by a number of the practising architects present.

The addresses were followed by a discussion in which many of those present took part, and about 25 applications for Licentiateship were received during the evening.

A very successful meeting was terminated by a hearty vote of thanks to the Council of the R.I.B.A., proposed by the President, and seconded by Mr. C. Kempson, for the work they have undertaken for the good of the profession. Messrs. Cross and Hubbard were also accorded a hearty vote of thanks, proposed by Mr. W. T. Topott, seconded by the ex-president, Mr. W. E. Keites, and supported by Mr. S. Perkins Pick, for the trouble they had taken in coming to Leicester.

Builders' Clerks' Benevolent Institution.

An election for three pensioners took place at Koh-i-noor House, Kingsway, W.C. (by kind permission of the Builders' Institute), on Tuesday, 20th December. The poll commenced at 7.30 p.m., closing 8.30 precisely. The secretary is Mr. John Austin, and the offices are at 21, New Bridge Street, Blackfriars, E.C.

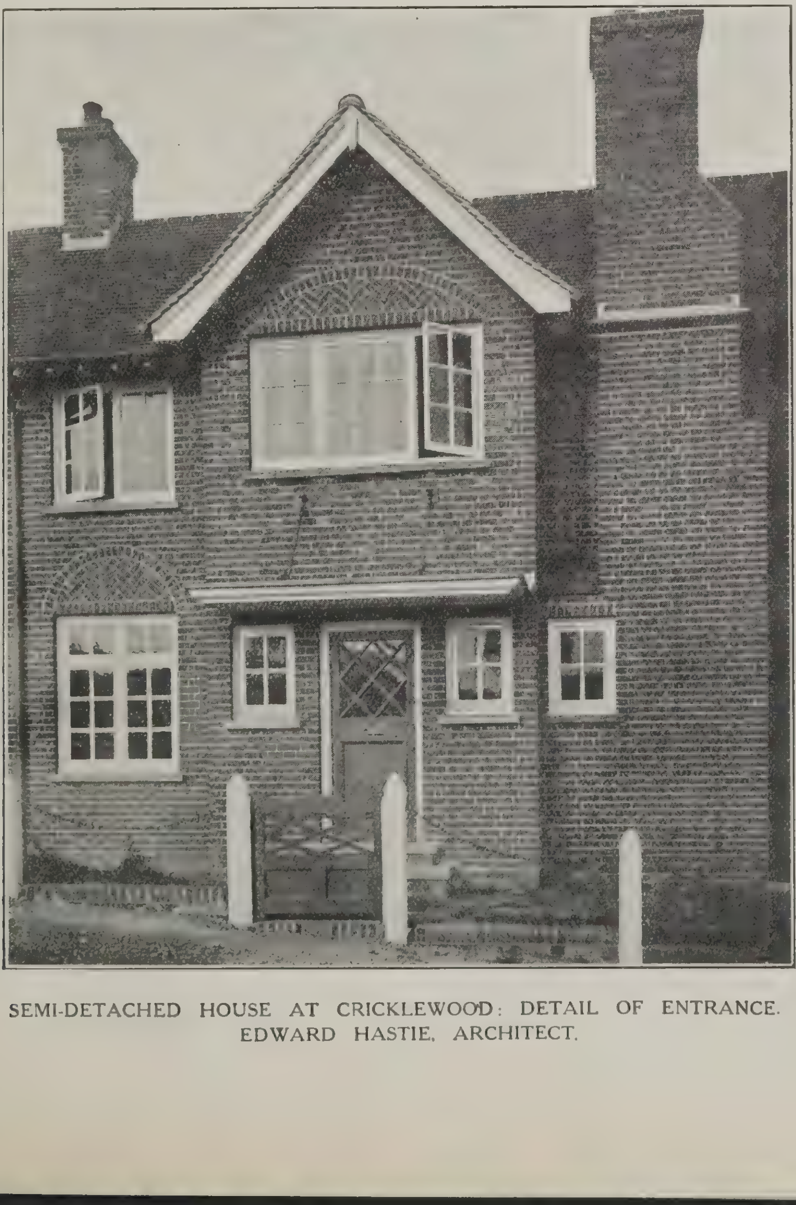
Trades Training School.

Sir Aston Webb's Advice to Students.

Sir Aston Webb distributed the prizes on December 13 at the Carpenters' Hall to the successful students of the Trades Training School in Great Titchfield Street. This school is conducted by the following City Guilds — Carpenters, Joiners, Painter-Stainers, Plasterers, Tylers and Bricklayers, and Wheelwrights. The certificates and medals gained at the Carpenters' Company's examinations in Sanitary Building Construction and in Carpentry, and in the Architectural and Building Construction Evening Classes at King's College were distributed at the same time. The Worshipful Master of the Carpenters' Company (Mr. Robert Cobay) was in the chair, and there was a large attendance.

Mr. John Willson (Chairman of the Schools Committee) presented a report, in which he said a record number of students had been reached this year, notwithstanding the competition that had arisen since they opened their doors. Mr. H. Phillips Fletcher (Director of the Trades Training School) also presented a report, saying that the ideal aimed at in the school was to encourage individualism, and this method had been found to give excellent results.

Sir Aston Webb, C.B., R.A., speaking "as a student to students," said that one of the advantages of those classes was that a young man could find out whether his particular job was the one he liked best, and they learnt to recognise and rejoice over the success of other people. They were all working in a very important time. The arts and crafts were in a time of change. All building work was in a very important time of change, and that was a great opportunity for those working in it. Materials had changed. There were two roofs at Westminster, one built of wood 450 years ago, and the other built 50 years ago of iron. The old wooden one was standing there better than ever, and the other was going on the scrap heap. That ought to be encouraging for the Carpenters' Company. Building materials were undergoing so much change that it was very necessary for them to keep actively in touch with the changes. The new General Post Office was built on an entirely different construction from what it would have been fifty years ago. It had extremely thin walls of great strength, and was built with great rapidity. Thin walls and great rapidity were becoming essentials in work in great cities. It was a very inspiring thing for young men to have to do something new, and not go on repeating what had been done before. In all the crafts similar changes were going on. The striking thing about present-day productions was their extraordinary accuracy. He doubted whether this had not been carried too far, and a great deal had been lost in better designing. Work should not only be useful and mechanically complete, but should be beautiful. Beautiful workmanship gave permanence to the object so treated. Nothing maintained a thing longer than some sense of beauty hanging round it. Many buildings were pulled down because they were unsightly, and many were kept up because they were beautiful. The sense of beauty could be given to everything—spoons, forks, tables, chairs, buildings, pictures. He still possessed a roll of faded drawings which in his student days he had the extraordinary arrogance to call designs. But when he now looked at them he lived again in an enchanted land where he worked simply for the joy of working with the best of fellow-students.



SEMI-DETACHED HOUSE AT CRICKLEWOOD: DETAIL OF ENTRANCE.
EDWARD HASTIE, ARCHITECT.

Glasgow Institute of Architects.

A quarterly general meeting of the Glasgow Institute of Architects was held on December 14, in the secretary's chambers, 115, St. Vincent Street—Mr. John B. Wilson, F.R.I.B.A. (President), in the chair. Reference was made to the death of Mr. David Thomson, who was one of the original members of the Institute, having joined in 1868. Mr. Arthur D. Hamilton, 212, St. Vincent Street, was unanimously elected a Fellow of the Institute. The secretary submitted a report on the matters which had been dealt with by the council since last general meeting. A proposed scheme of architectural education in the Glasgow School of Architecture was being considered by the council. It had been found impracticable to arrange for the proposed exhibition in Glasgow of the drawings shown at the Town Planning Exhibition in London. The council had called the attention of the Fine Art Committee of the Scottish National Exhibition to the omission of architecture from the proposed exhibits, and the committee had agreed to include architectural designs among the exhibits. The council, as trustees for the Alexander Thomson memorial, had arranged the programme for the next competition, the drawings for which are to be lodged with the secretary on December 29 1911. The subject of competition is a design for a bridge. The president has made arrangements with the following gentlemen to give lectures before the Institute, viz.—Mr. J. A. Gotch, of Kettering, on January 27; Mr. A. W. Cross, M.A., London, on February 23; and Mr. Oldrieve (on the subject of Glasgow Cathedral roof) on March 16. The matter of bringing the subject of Licentiateship of the R.I.B.A. before the members of the Institute and other architects in the Institute's province was fully discussed, and it was agreed that this could be best acomplished by issuing a circular calling attention to the desirability of all architects who are not already members of the R.I.B.A., and who are eligible for admission as Licentiates joining this class, and pointing out that the period during which applications can be received expires on March 1, 1911.

ENQUIRIES ANSWERED.

N.B.—Owing to the very great increase in the number of enquiries received the Editors desire to give notice that answers to the following enquiries can no longer be undertaken :—

- (1) ***Enquiries about buildings to measure in particular towns and districts.***
- (2) ***Enquiries embodying questions which have been set in examination papers.***
- (3) ***Enquiries which ask for or require the preparation of special designs as part of the answer.***

The Term "Coffer Dam."

G. L. M. writes: "It appears to me that the term "coffer dam" is very loosely made use of by engineers and contractors. Strictly speaking, what is a coffer dam?"

—"Coffer dam" is a term which should only be employed for a structure of two rows of piles with a filling of clay or other substance to resist the penetration of water. Coffer dams are temporary structures, and are used in preference to single-sheeting dams, when any considerable head of water has to be resisted or the enclosed area has to be kept very dry. D.

Building to Measure for R.I.B.A. Examination.

A. M. L. (Woking) writes: "I should be pleased to know if you think there would be enough detail in Abbots Hospital, Guildford, to measure for final examination R.I.B.A. drawings. I should propose doing, part at any rate, half inch elevations, whole plan ⅛in. scale, and larger details of doors, fireplaces, etc."

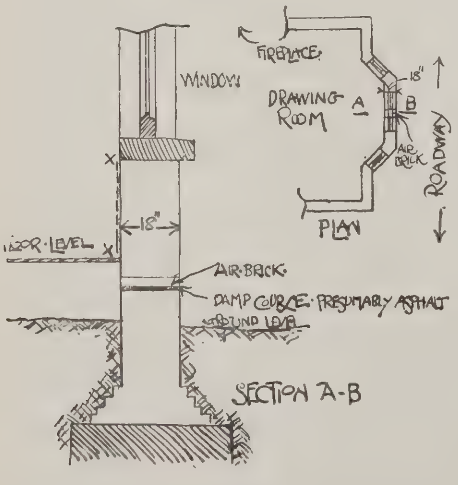
—This building would be quite suitable for measurement for the R.I.B.A. Final, and if worked out on the lines suggested should make a good set of drawings. G.

Fixing Marble Slabs to Church Wall.

A. W. S. writes: "Can any of your readers suggest the best means of fixing marble slabs to the plaster walls of a church? Large slabs would be used, with monograms and devices let in above the dado, up to the wall plate, also around windows and gable at the east end of the chancel."

Damp Wall.

Enquirer (Herne Hill) writes: "The section given in the sketch is through an external wall 18ins. thick to a drawing-room of a house. Dampness has disfigured the wall paper between the points X—X below the windowsill, and about a foot above this level beyond the window opening. The house is not of recent erection, and the damp appearing is probably due to a defect in the damp course. In order to avoid disturbing the brickwork and inserting a new damp-course, would a vertical layer of sheet lead or Portland cement laid on to the face of the wall between X—X overcome the mischief, and would there be any difficulty in fixing the plaster covering for wall paper?"

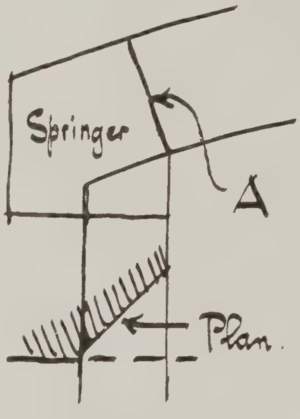


—Covering the internal face of the wall with lead foil will probably be efficient in preventing the dampness in the wall from disfiguring the wall paper, but it is a poor remedy otherwise, as it imprisons instead of excluding the dampness from the wall. If the damp course is defective it should be renewed. G.

Arched Window Head.

"Querist" writes: "Which is the correct way of starting skewback of window opening—square off face line, or upright with jamb? Dimensions in the present case are as follows: 4ft. clear inside next frame, rising 5ins. front of arch ring 8ins.

—Querist does not state whether the work is to be executed in brick or stone, though in either case it seems a matter of design, as both methods are possible. If the work is masonry the line of jamb can be the line of skewback, though this will not give a level intersection; but as the springer can be formed as sketch, this is immaterial, as the actual springing is at A If, however, the work is brick, the skewback run square off face line will be much easier to form, the splayed jamb being taken up against the soffit of the arch. G.



Building Line Problem.

J. T. H. writes: "I have put plans before a certain council for their approval for four houses and one shop. I have brought my shop front out to the same line as the bay windows in my own and adjoining blocks. There is only a building on one side of the site. The surveyor's contention is that the shop front should be set back 9ft., and I contend that 6ft. 3ins. is sufficient. Please say (1) what is the total extent to which I can bring my buildings forward? (The bylaws only enforce 36ft. street); (2), is there a building line when the site is only built up on on one side and there are no buildings to fix the point on the other side of the site? (3) how does Section 3, Building Street Act, 1888, affect this case, and can it be used when not incorporated with the bylaws of the district?"

—(1) I am of opinion that you can only bring your building line forward to the main line of the adjacent building, and not so far forward as the line of the bay windows. (2) Yes, if the circumstances allow of it, as I think they do here. (3) Section 3 of the 1888 Act appears to deal conclusively with such a case as this. The effective words run: "It shall not be lawful in any urban district without the written consent of the urban authority to erect or bring forward any house or building in any street or any part of such house or building beyond the front main wall of the house or building on either side thereof in the same street, nor to build any addition to any house or building beyond the front main wall of the house or building on either side of the same." The Act is of general application, and needs no special adoption procedure. Penalty for infringement 40s. per day after notice given. F. S. I.

THE MODIFICATION OF LIVERPOOL CATHEDRAL

Criticism of the modified design of Liverpool Cathedral continues to appear in the Liverpool papers. One correspondent thinks it "impossible to see how there can be any comparison between the two designs—the one a solemn and noble structure, and the other a ridiculous, squat sort of erection, quite devoid, so it seems, of any style or beauty!" Another correspondent—Mr. J. Slater—supposes that the objections raised are based to a certain extent upon sentiment, and are directed not so much against the provision of an enlarged central space as against the adoption of a single tower in lieu of the twin towers, which, it is thought, will detract from the dignity and grandeur of the cathedral. He suggests that "if sufficiently strong foundations are put in to allow of another section or sections being added to the tower, and raising the height to something like 350ft. above floor level, the squat appearance will be overcome, and the tower would then be more in keeping with the immensity and great height of the cathedral, and would certainly add dignity and majesty to the whole." This writer adds (with much truth, as it seems to us) that "the beauty of the design grows upon one with acquaintance," and he ventures to think that when the public have grown more familiar with it they will not regret the change. The Cathedral committee have decided to instruct the architect to proceed with the building on the basis of the new design, the detail of the central tower being reserved for further consideration. This may possibly mean that the critics who imagine "squatness"—the central tower, by the way, will be 280ft., as compared with the 260ft. of the twin towers, as originally designed, and will rise no less than 120ft. above the transepts—may ultimately be gratified by a further increase in the height of the central tower. This, however, it may be imagined, is largely a question of funds; but it would certainly be helpful to hear the architect's views on the matter. Hitherto he has very properly maintained a dignified silence with regard to the newspaper critics; but some pronouncement from him on the points raised will perhaps be made in the right quarter, and its ultimate publication can hardly fail to be extremely interesting.

Another correspondent suggests that those interested in the matter would be in a better position to judge of the effect of the modifications if a model of the cathedral were placed before them.

It has been insinuated that the modification of the design may have been imposed on the architect by the committee; but that this is a mere flight of the imagination is shown by the following letter, which has been addressed by the hon. secretary of the Cathedral Committee to the "Liverpool Post and Mercury":—

Sir,—Will you allow me, in reply to several letters which have recently appeared in your paper, to say that the origin and conception of the new design for the Cathedral is to be attributed to our gifted architect, and to him alone. He considers this to be the outcome of his matured and developed genius, and the committee are prepared unanimously to accept it as such. We have no end in view but to build the most beautiful house of God imaginable.—Yours, etc., S. A. K. Sylvester.

This effectually disposes of a most unwarrantable assumption.

THE MALL EXTENSION.

The Improvements Committee of the London County Council practically offer to recommend the carrying out of the Mall extension scheme on condition that the Government pay a third of the cost. In a report on the question they say:—"It seems clear that it was the intention of the Government to complete the improvement without any co-operation on the part of the Council or of the local authorities concerned. If the Council had received any intimation that it was expected to complete, or to assist in the completion of, the improvement, it could by purchasing property have anticipated in some measure the increase in the value of property in the neighbourhood, and it could have taken advantage of any favourable opportunities which might have arisen for dealing with the property, especially as it holds, or has held, a considerable extent of property in Spring Gardens and Charing Cross.

"Although the Council has thus been invited to take over a scheme, as to the initiation of which it was not consulted, the Council wish to do what is possible to assist in the completion of the improvement. We have accordingly considered alternative schemes for the completion of the improvement on the basis that a minimum width of 86ft. be adopted for the road. The net cost is estimated at £112,200 and £146,900 respectively, the latter scheme providing for the dealing with a larger area of property than the former.

"These scheme were submitted to the Office of Works and the Westminster City Council with an intimation that we were prepared to advise the Council to proceed with the matter, provided that the Government and the City Council each agreed to contribute one-third of the cost.

"A reply has been received from the former stating that the First Commissioner is unable to accept the view that it was the intention of the Government to complete the improvement without any co-operation on the part of the Council or of the local authorities, but finds abundant evidence to show that the Council from the first was warned that it would be necessary for it to contribute towards the cost, pointing out that the Government has already spent a large sum of money; intimating that the First Commissioner is wholly unable to advise Government to bear any further cost in respect of the road outside the Government's jurisdiction; and suggesting, without undertaking any responsibility, that the larger is far superior to the smaller scheme.

"We can find no evidence," the Committee proceeds, "to support the view put forward in this letter, but, on the contrary, the facts mentioned above make it clear that the Government contemplated completing the improvement We are glad to be able to state that the Improvements Committee of the City Council are recommending a contribution of one-third, not exceeding £50,000, of the net cost of the larger scheme. The adoption of this scheme would afford opportunities for securing that the architectural treatment of the buildings on the surplus land shall harmonise with that of the Government buildings already erected."

While admitting that the improvement will be an advantage to traffic, the committee contend that the improvement, as opening up the Government buildings and providing a fitting approach to the memorial to Queen Victoria, is of national rather than of local concern, and a substantial proportion of the cost should therefore be borne out of national funds. If the Government had been prepared to accept the offer of the Council and to contribute one-third of the cost, the committee would not hesitate to advise the Council to undertake the work and to contribute one-third of the cost. In this case the improvement would very probably be completed, as far at least as the widening of the road is concerned, by the middle of next year.

The committee conclude:—"In the absence of any offer by the Government to co-operate in the matter we have no alternative but to recommend that the Council is not prepared to carry out the extension of the Mall to Charing Cross unless the First Commissioner of His Majesty's Works, etc., agrees to advise the Government to contribute one-third of the net cost."

THE WIDENING OF FLEET STREET AND BISHOPSGATE STREET.

At a Precinct meeting in Farringdon Without recently, grave complaint was made of the alleged delay in carrying out the widening of Fleet Street. It was declared, however, that the Improvements and Finance Committee have done their utmost to facilitate the speedy completion of the improvements. In all, 28 properties are involved, and of these three have been set back. Claims in regard to twelve other properties have been under negotiations by the committee, and will be settled at as early a date as possible. The completion of the work of widening may be regarded now as a matter of months only. As bearing upon the general question of improvements, the "City Press" mentions that the Improvements and Finance Committee have been engaged in bringing to a conclusion the scheme for widening Bishopsgate Street Without between Angel Alley and the Eastern boundary. The cost was originally estimated at £316,000, and the London County Council consented to pay half that sum. The outlay on the improvement, which is now practically complete, will be considerably under that figure.

GUILD OF ARCHITECTS' ASSISTANTS.

At a meeting of this Guild which was held at Prince Henry's Room, Fleet Street, on December 13th, the hon. secretary read the correspondence which had taken place between the Guild, R.I.B.A., and the Society of Architects on the question of the inclusion of the assistants' interests in the provisions of the proposed Parliamentary Bills. Two proposals were suggested by the Guild:—(1) Registered Practitioners to employ only registered assistants; and (2) Restriction of the number of unpaid assistants and pupils in a registered practitioner's office. These proposals have been referred by the R.I.B.A. and the Society of Architects to their respective sub-committees dealing with the Bills.

Mr. S. Douglas Topley, A.R.I.B.A., then read a paper on "Rational Building," in the course of which he drew attention to the deficiencies of the office-trained architect, too often a slave of his drawing implements. He thought the position of string-courses on elevations was frequently determined by that of the T-square on the board, and roof pitches governed by the set-square.

He quoted an account of a meeting at the R.I.B.A., 35 years ago, in which the author, mercifully omitting names, described how the discussion circled round an assertion that lines one sixty-fourth of an inch in thickness produced the best results. He thought they were hardly likely to produce the western elevation of St. Paul's.

Art in building depended upon sound and reasonable construction. Photographs of work by W. Weir Schultz and Curtis Green were handed round to support this statement.

Mr. Topley favoured contract by schedule of prices, which enabled the architect to vary and improve the structure as it progressed.

He recommended a revision of architectural training to include three years' workshop training, and suggested a certificate of the R.I.B.A. final examination should be evidence that the holder had mastered at least one craft.

He looked forward with perfect confidence to the time when the term "architect" would apply only to that man who, having acquired a thorough practical training in the workshop, and a sound theoretical training in the college, went to his one job every morning and worked side by side with his assistant craftsmen.

Mr. J. H. B. Scott followed with a paper on "Difficulties of the Quantity Surveyor in relation to the Architects." He said that quantity surveyors were greatly and unnecessarily annoyed by the "alleged" specifications of architects, and suggested that if the architect supplied the quantity surveyor with a general statment of requirements, accompanied by copious notes on the drawings, these with the answered queries naturally arising from the taking off, would form sufficient basis for the specification for the writing of which the quantity surveyor should be paid in addition to his legitimate charges for the bills of quantities. But as the specification is included in the architect's duties, Mr. Scott hesitated to suggest that the architect should pay for it out of his commission. The use of a "stock" specification was particularly deplored, and also the under-estimation of work by an architect, as also incomplete drawings and amendments thereto.

The lame attempts of some architects to adjust the final account and the subsequent appeal to the quantity surveyor to reassemble the débris were described. The lack of position of the quantity surveyor in the public eye, whilst the names of architects, builders, and even clerks of works basked in the sunshine on the monumental brasses affixed to buildings, was much lamented, and, in conclusion, the lecturer trusted that so important a factor in the production of architecture would obtain due recognition in the future.

Mr. J. H. Hibbert, F.S.I., proposed a vote of thanks to the readers of the two papers. He took exception to the practical side of the educational programme proposed by Mr. Topley. Design is imaginative, and without imagination there can be no architecture. He thought draughtsmanship overrated, and that public competitions fostered fine draughtsmanship but doubtful architecture.

Mr. J. F. Burkinshaw seconded. He said quantity surveyors often illegally poached upon the architects' preserves by making both drawings and quantities without a qualified architectural assistant, and they often caused unnecessary friction between the assistant and his principal.

COMING EVENTS.

Tuesday, January 10.

Guild of Architects' Assistants.—H. Guichard Todd, F.S.A. Scot., M.I.A., on "Art and Registration," in Prince Henry's Room, 17, Fleet Street, 7.30 p.m.

Wednesday, January 11.

Northern Architectural Association, Newcastle.—Paper by Mr. J. Walton Taylor, F.R.I.B.A., 7 p.m.

Thursday, January 12.

Leeds and Yorkshire Architectural Society.—Annual Dinner, Queen's Hotel, Leeds.

Friday, January 20.

Institution of Mechanical Engineers, Storey's Gate, Westminster.—Ordinary meeting, and nominations for Annual Election of Officers, 8 p.m.

FEDERATION NEWS.

Northern Counties Federation.

The annual general meeting of this Federation was held at the Queen's Hotel, Stockton-on-Tees, on December 7th, Mr. Alex. Ross (president) in the chair. The president of the National Federation, Mr. S. Smethurst, J.P., was also present during the course of the meeting

The President drew attention to the recent death of two members of the Stockton Association, Alderman Atterby and Mr. F. W. Taylor, and moved that a vote of condolence be forwarded from the Federation to Alderman Atterby's widow and Mr. Taylor's mother.

The honorary treasurer (Mr. J. W. White) submitted the audited balance sheet for the past year, and after explaining the various items, moved its adoption, which was seconded by Mr. J. Shewan and agreed to unanimously.

The secretary presented his annual report, which stated that the work of organisation was well maintained, and that many improvements in conditions of contracting for public authorities had been effected. The report concluded with a reference to the proposed invitation to the National Federation to visit Newcastle in the summer of 1911. On the proposition of Mr. R. Heslop, seconded by Mr. T. Wilkinson, the report was adopted and Mr. Hope was thanked.

The estimated income and expenditure for the coming year was considered, and it was resolved: "That the subscription to the Federation for 1911 from the local associations be at the rate of 2s. per cent. of wages paid during 1910, and one third of the subscription received from honorary members."

Mr. Fred. W. Ranken, of Sunderland, the senior vice-president, was elected president. Mr. John Proud, West Hartlepool, the junior vice-president, was elected senior vice-president. Mr. W. T. Weir, of Howdon-on-Tyne, junior vice-president. Mr. John W. White (Sunderland) was re-elected honorary treasurer, and Messrs. Percy Bray and John C. Hope, hon. auditors.

The Executive Council was elected as follows:—Messrs. Stephen Easten, W. T. Weir, W. Foster, W. J. Robertson, A. Ross, J. Pelton, J. Simpson, F. W. Ranken, R. J. Huntley, W. B. Cooper, J. W. White, J. Davison, R. Johnson, J. Proud, G. Hudson. Messrs. Stephen Easten, T. Wilkinson, and J. Proud were re-elected representatives upon the National and Northern Centre Councils. Mr. J. W. White is a member ex-officio. Messrs. Stephen Easten and T. Wilkinson were elected representatives upon the Northern Centre Conciliation Board, and Messrs. J. W. White and J. Proud were elected representatives on the National Conciliation Board.

On the proposition of Mr. R. J. Huntley, the president and secretary were appointed as representatives to attend the annual general meeting of the National Federation to be held in January next.

The Secretary gave a report upon the case of Wallace v. Douglass, which had been taken to the Court of Appeal. The decision there given reversed the judgment of Mr. Justice Ridley, and decided that the offer and acceptance to do the work as per quantities, coupled with the conditions contained in the bill of quantities, was a contract in the sense that is generally understood in the building trade, and that to ascertain the amount to be paid thereunder it was necessary to ascertain the actual work done, and price it according to the prices in the bill of quantities. It was decided that the whole of the proceedings in the Court of Appeal, together with the text of the judgment, should be published in the Year Book and Directory, and an advertisement should be inserted in the "Architects' and Builders' Journal" advertising the fact. The extra cost of printing the report was expected to be met by the increased sale of the book.

Mr. W. T. Weir gave a report upon the conference between the representatives of the Federation and the Northern Quantity Surveyors' Association, when an understanding was arrived at to the effect that the successful contractor should be required to deposit with the architect, before signing the contract, a fully priced and moneyed-out copy of the bills of quantities, for use in valuing all variations from the contract. All clerical errors of extension or additions affecting the lump sum should be at the sole risk of the contractor. He should have no claim for any adjustment at any time, but should alter his prices and figures to fit the lump sum figure, and the total figure should not be affected.

Mr. White said that the contractor should be supplied with a separate copy of the schedule for their own reference when it was necessary to deposit the schedule, and the quantities should be returned to the builder after the completion of the contract.

Mr. Ranken reported upon the objectionable conditions of contract demanded by a local district council, who require the priced schedules to be sent in with the tender, and that the surveyor to the authority should be sole arbitrator. The Federation had made references to the Council who had waived their request for priced schedules, but adhered to their reference for settlement of all disputes to their own surveyor.

Mr. J. Proud said it was time the Federation took a definite stand and refused to send in priced schedules with tenders for any description of work, and the secretary drew attention to the rule of the Federation which stipulated that priced schedules must not accompany tenders. It was the duty of the members to see that the rule is enforced on every occasion, and the particulars of objectionable features of the terms of contracting should be communicated to the Federation at once.

Mr. J. W. White said that the members ought to work with those persons who were likely to tender against the Federation members, and suggested that the Federation should approach the Paviors' and Drainers' Association and ask them to fall into line with the Federation.

Mr. J. Pelton gave notice that at the next meeting of the Federation he would move "That it is in the interests of the Federation that application be made to the architects, surveyors, and engineers for the return to the contractor of the priced bills of quantities at the termination of the contract, as these documents are the property of the contractor."

The secretary was thanked for his report upon the Town Planning Conference, which he had attended on behalf of the Federation.

Arising out of the recommendation passed at the last meeting of the Federation with respect to the rule for dressed stone, Mr. J. W. White, seconded by Mr. R. J. Huntley, moved the following resolution passed by the Sunderland Association: "That this Association recommend to the Northern Counties' Federation that there be no restriction whatever upon the importation of hand-worked or machine dressed stone in the whole of the Northern Counties' Federation area." Mr. White said that Wearside and Teesside had no quarries in their respective districts. The case was different with Tyneside. If the Tyneside rule were adopted, we should have to get stone from quarries where the wage pay was equal to the wages paid in the district where the stone was worked into building, and that meant that for Tyneside jobs contractors were tied to Tyneside quarries. If there was to be any alteration, it should apply all round. He had obtained the various dressed stone rules in force in the Lancashire, Cheshire, and Yorkshire Federations, and the analysis was.—3 towns have a rule similar to the Tyne and Blyth; 6 towns have a rule similar to Sunderland; 14 towns allow all but machine or hand-dressed moulded stone to come in from any district.

Mr. Weir and Mr. Heslop spoke upon the question, both being in agreement that the time was ripe for a change of rule, and that the present Tyne and Blyth rule should be abolished. On the proposition of Mr. J. W. White, seconded by Mr. R. J. Huntley, it was resolved:—"That it be a recommendation to the local associations that the resolution passed by the Sunderland Association with respect to the dressed stone rule receive their immediate consideration, and that the decision arrived at by them be communicated to the Federation secretary without delay, and that the Executive Council have full power to deal with the replies received."

It was resolved to hold the next quarterly meeting at South Shields.

The members of the Board afterwards attended the banquet of the Tees-side District Association as the guests of that association.—W. H. Hope, Solicitor, Secretary.

Edinburgh.

The annual dinner of the Edinburgh, Leith, and District Building Trades Association and the Building Trades Exchange of the city and district of Edinburgh was held in Ferguson and Forrester's Restaurant, Princes Street, Edinburgh, on December 9th, Mr. David Wilson, J.P., presiding over a company numbering about eighty.

Mr. Archibald Watson, hon. treasurer of the Glasgow Master Plumbers' Association, in proposing the toast of "The Edinburgh, Leith, and District Building Trades Association and the Building Trades Exchange," advocated the formation of a benevolent fund in connection with the Association.

In reply, the Chairman said they had never ben in a better position financially and in regard to membership, notwithstanding the dull times in the trade. They were not, however, in a position that he would like them to be, and he would like very much if they could have something like what they had in Glasgow in the way of a benevolent fund. He was afraid they were no better off in the building trade than they were last year. This was the time for speculators to buy up property. If they could remove the land taxes, he had no doubt the purchase of land would in a few years prove a good speculation. Things were at their lowest ebb, and if there was a reaction and prosperity returned, buyers would be bound to get a good price.

Mr. Graham Yooll replied for the Building Exchange.

In proposing "Kindred Associations," ex-Bailie Forrest said that with improving trade emigrants would come back to this country, and empty houses would soon fill up, and the building trade would improve. They could not expect another boom fot a number of years.

Ex-Bailie Walker, Musselburgh, proposed, and Councillor Inches, Edinburgh, replied to, the toast of "The Corporation of Edinburgh."

Occasion was taken to make a presentation to Mr. James Cameron, for many years secretary to the Association and Exchange, who has taken up an important appointment at Newcastle.

Hull.

The annual meeting of the Hull branch of the Yorkshire Federation of Building Trade Employers was held at the Builders' Exchange, Posterngate, on December 13th, the President, Mr. R. Finch, in the chair.

There was a good attendance of members present, when the hon. sec., Mr. A. Peers, presented the annual report, which was taken as read and adopted.

The treasurer, Mr. F. Bilton, in presenting the balance-sheet, said that he was pleased to be able to report that the finances were in a more flourishing condition than in previous years. Mr. Geo. H. Scorrer moved a vote of thanks to the retiring officers, and Mr. W. Wright, in seconding, said that the report and balance-sheet testified to the excellent management of the Association. Mr. C. Greenwood supported.

There was a unanimous nomination for the re-election of Mr. R. Finch to the presidency; the officers for the ensuing year being elected as follows:—President, Mr. R. Finch; vice-president, Mr. F. Bilton; treasurer, Mr. A. Peers; Management Committee, Messrs. A. Goates, M. Harper, H. Sanderson, P. T. Kettlewell, H. Stephenson, H. J. Kirkwood, C. Greenwood, J. Boyce, J. H. Simpson, J. E. Railton, V. Knowles, E. M. Darneley, G. H. Scorrer, J. Taylor, T. Hicks, A. Abba, E. K. Lawson, R. E. Ashbridge, A. Christopher, C. Crane, D. Green, W. Panton, H. Drewery, J. Townsley, G. Folkard, E. Stubbs, W. Wright, H. Langton, E. M. Parsons, and Mr. E. Quibell and Mr. J. T. Levitt as past presidents. Delegates to the National Federation, Mr. R. Finch, Mr. F. Bilton, Mr. E. Quibell. Delegates to the Yorkshire Federation, Messrs. R. Finch, A. Goates, F. Bilton, J. Townsley, E. M. Darneley, F. Abba, A. Peers, E. Quibell, J. E. Railton. Delegate to the Institute of Builders, Mr. E. M. Darneley. Mr. Bilton moved a vote of thanks to Mr. A. Peers, who is retiring from the hon. secretaryship, the Association having appointed a general secretary, Mr. Peers replied.—Harold Tiplady, Secretary.

Preston.

The seventeenth annual dinner of the Preston Building Trades Employers' Association was held at the Association Rooms, Mount Street, Preston, on November 16th, when the President (Mr. S. Salthouse) was supported by about forty members of the Association.

Mr. T. B. Garnett, in proposing the toast of "The Lancashire, Cheshire, and North Wales Federation," said he thought the County Federation was doing excellent and necessary work. Parliamentary matters, questions affecting labour, insurance, and many other very important subjects, were all being watched by them in the interest of every member of the building trade.

Mr. W. Cooke, jun., in responding to the toast, stated that the Lancashire, Cheshire, and North Wales Federation had now been in existence for more than twelve years, and was making very satisfactory progress. One of the greatest workers to build up this great and necessary Federation, in fact the pioneer of the Federation, was their much respected local secretary—Mr. John Tomlison—whom he regretted not seeing present that evening owing to ill-health. Mr. W. Cooke then gave a detailed account of the doings of the Federation, and expressed pleasure at the high position their local Association occupied therein. The Federation had done excellent work in dealing with architects, surveyors, operatives' unions, and public bodies throughout the county area. The impression they had created in these quarters made them begin to consider that building trade employers were entitled to fair consideration, and he thought there was now a far better all-round understanding than had ever existed before, and this he believed to be due to the efforts of the Federation.

Mr. Gilbert Starkie, in proposing the "Preston Building Trades Employers' Association," stated that the association would be 21 years old next March.

Mr. R. H. Catterall, responding, said he was quite sure that every member had benefited by membership, which, at the very least, imparted a feeling of security.

Mr. W. S. Holland, proposing the "Town and Trade of Preston," said that while the town was still suffering through the general depressed state of the trade, he ventured to think that better times were in view. He was pleased to learn that there were that day more looms and spindles working in the town than ever before, which was a very good sign. Mr. S. Shorrock responded.—John Tomlison, Secretary.

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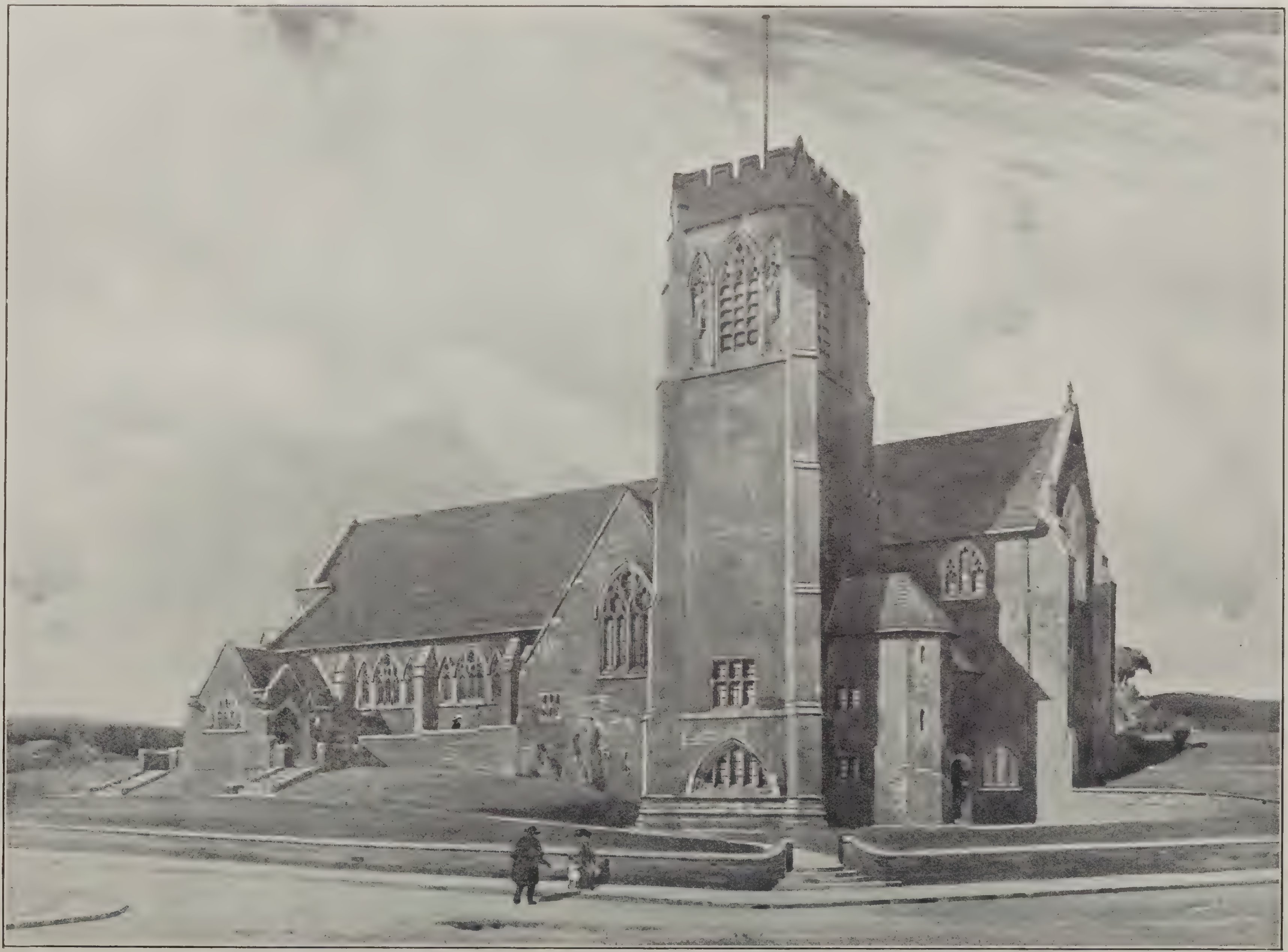
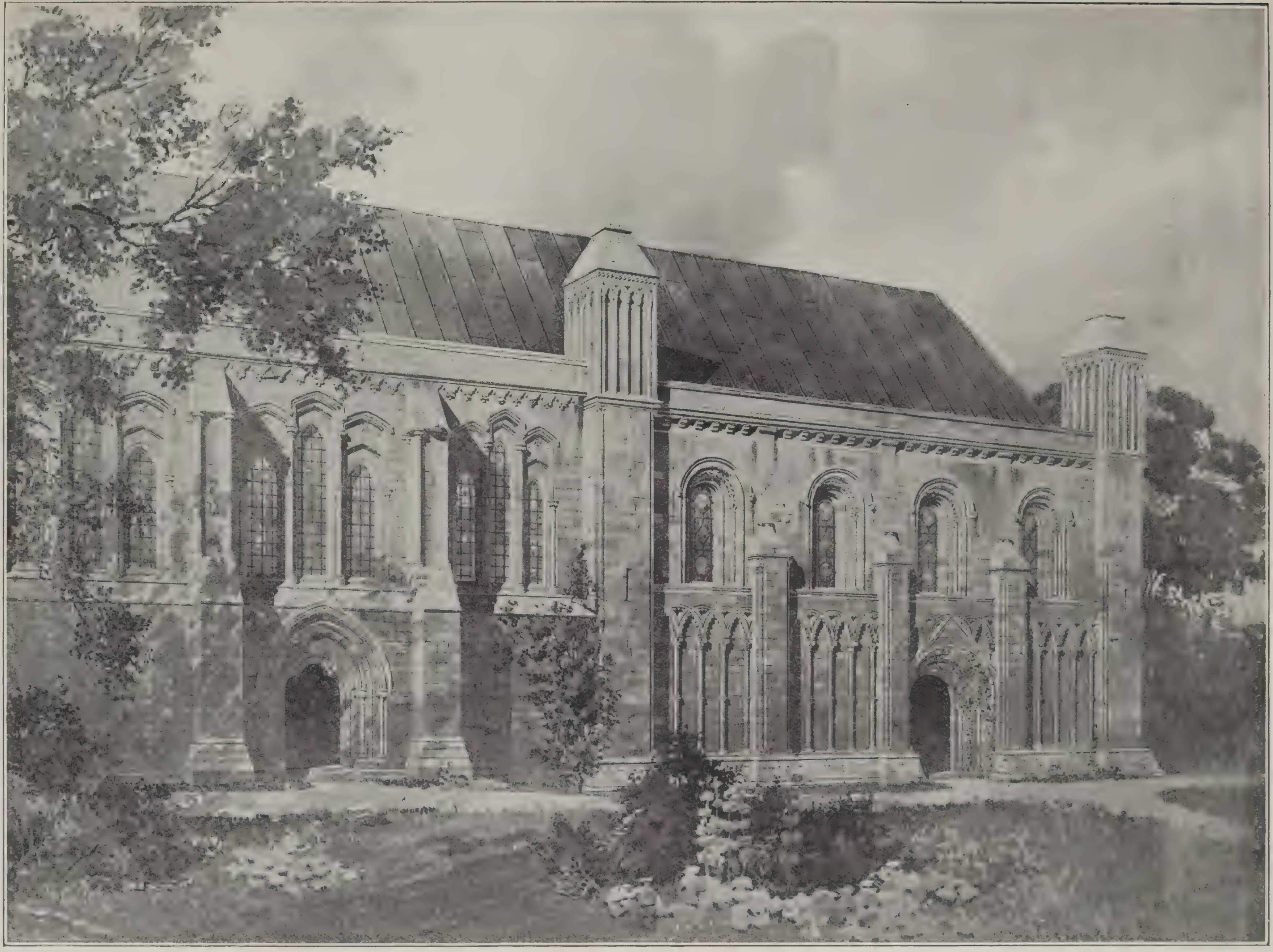
Supplement to THE ARCHITECTS' AND BUILDERS' JOURNAL, Wednesday, *December 28th*, 1910.



CHURCH OF ST. ANDREW, COULSDON. F. H. GREENAWAY AND J. E. NEWBERRY, ARCHITECTS.

Supplement to The Architects' and Builders' Journal, Wednesday, *December 28th*, 1910



CHAPEL OF ST. MARY, GLASTONBURY. W. D. CARÖE, ARCHITECT.

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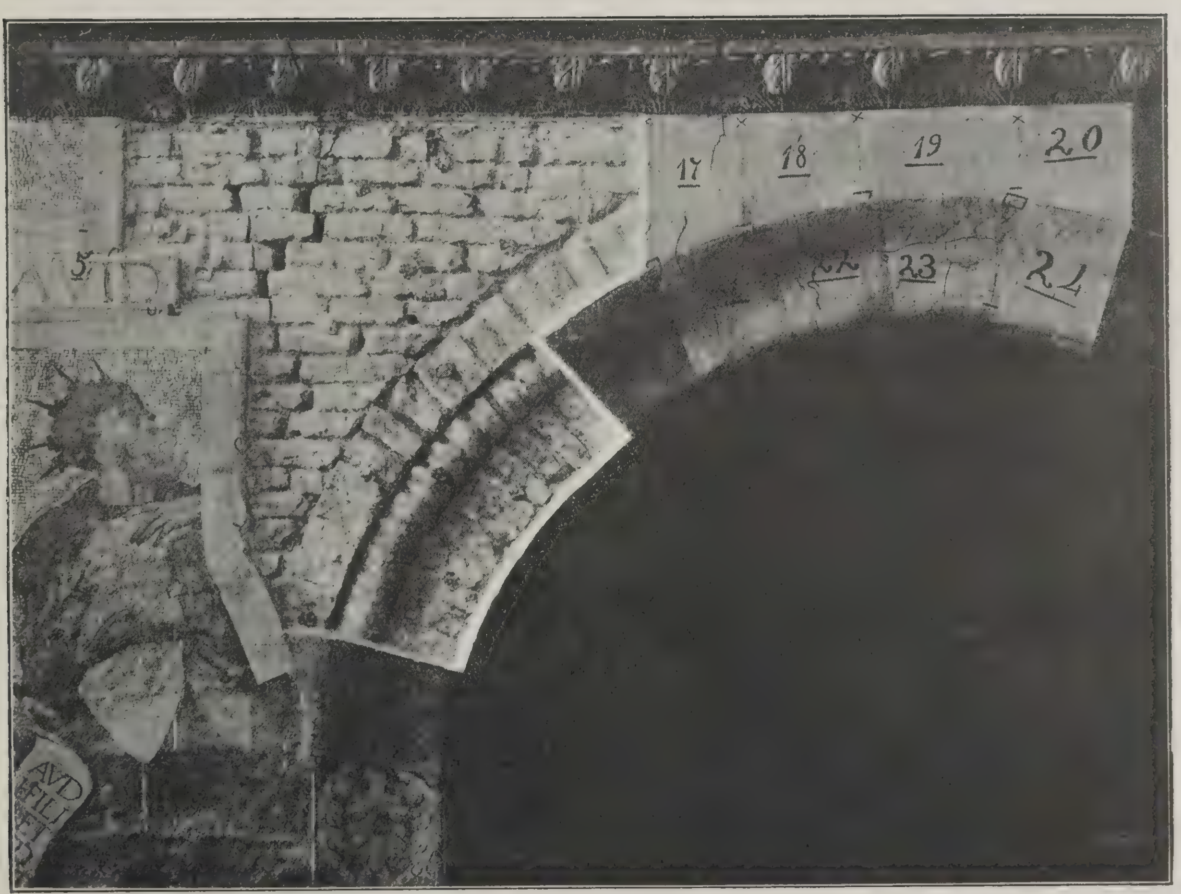
THE ARCHITECTS' &
BUILDERS' JOURNAL.

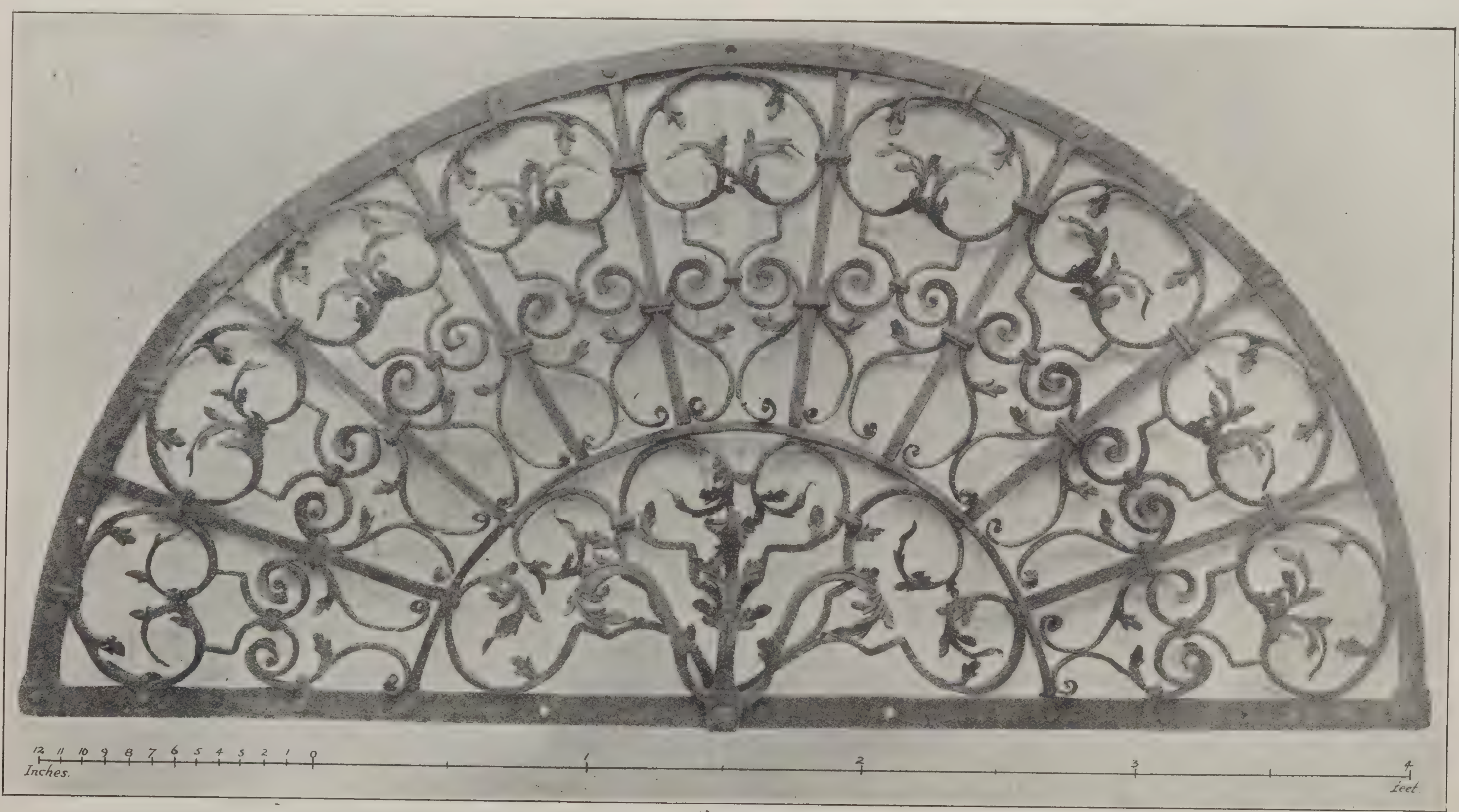
WEDNESDAY,
DECEMBER 28th, 1910.

Volume XXXII. No. 830.



There has been considerable settlement of the foundations of St. Mark's, Venice, and the above illustration shows the fracture in one of the arches. The work has been restored by Signor Manfredi. Over the centre of the arch, paper has been fixed in order to show whether further settlement occurs.

ST. MARK'S, VENICE: DETAIL OF ARCH TO THE NORTH OF THE TRIBUNE OF THE CRUCIFIX.



This striking example of ironwork is included in the collection at South Kensington. The Germans, who were very fine smiths, were nevertheless addicted to over-elaboration; but this example, from Ausburg, is kept comparatively simple. The enclosing frame is about ½ in. thick, and the radiating bars are ¾ in. square.

WROUGHT-IRON GRILLE FOR A FANLIGHT: GERMAN, LATE SEVENTEENTH CENTURY.

THE ARCHITECTS' & BUILDERS' JOURNAL.

DECEMBER 28th, 1910. *CAXTON HOUSE, WESTMINSTER.* VOLUME 32. No. 830.

TO ALL OUR READERS, AT HOME AND ABROAD, A PROSPEROUS NEW YEAR.

Some Christmastide Reflections.

MOST of our readers, when this issue comes into their hands, will be making holiday either in their own homes or in those of friends, and leaving professional interests, for the moment at least, in the background. And for men of all occupations there is a certain blessedness in the coming round of a season at which relaxation from everyday work is a generally admitted programme, becoming in fact both a virtue and a necessity. It is not a time, therefore, to trouble our readers with questions of professional interest from which they are taking a little respite. It is more to the purpose to wish them all a happy Christmas, a formula we prefer to the older one of "a merry Christmas," which is rather too suggestive of the early Victorian (or pre-Victorian) ideal of celebrating Christmas not wisely but too well.

Christmas is traditionally supposed to be a time not only of enjoyment for oneself, but of "goodwill to men," a phrase which implies the desire to promote the happiness of others, and to live in harmony with our fellows. If any reflection occurs in regard to the application of this principle among architects, it may be on the whole satisfactory. There is certainly more of general unity and mutual good feeling in the profession than there was only a few years back, when a considerable number of the ablest architects refused, for no intelligible reason, to belong to or to support the representative body of the profession, and when parties in the profession were divided with great acrimony on a vexed question of professional politics which we will not even name at this moment, but which led to somewhat violent things being said and written on both sides. Since then we have seen nearly all the former recusants join the Institute, and many of them give important assistance in its administration; and we have seen organised bodies, formerly in opposition, coming more or less into fellowship and common understanding as to their aims. To arrive at this conciliatory position something has no doubt been given up on one side, and something will probably have to be given up on the other; but it is certainly better than the marked line of cleavage which till recently divided the profession. And the well-intentioned move made on the part of the Institute, to facilitate the union in its ranks of many of the smaller practitioners who are now outside of its influence and support, if it succeeds as its supporters hope, will be a definite step towards the existence of a united profession. And it is desirable that this attempt, during the three months which remain for working it out, should be received with general support, and that differences of opinion should be sunk in promoting the effort to obtain greater solidarity in the ranks of the profession, which is one, at all events, of the phases of "goodwill to men" towards which we are exhorted at the present season.

Another point that may be mentioned is, that it has been made a charge against architects that they are a body very jealous of one another. There certainly was a time when there was a good deal of foundation for this charge, though the jealousy, or the adverse criticism of each other's works (which was the expression of it), was ostensibly and perhaps sincerely made on artistic grounds. One man had his own theory as to what architectural design ought to be, and on the strength of it condemned wholesale the works of nearly all his contemporaries. We have come across preposterous instances of this ungracious attitude towards the work of other architects from time to time; but not, we are glad to think, very recently. There seems certainly to be an approach to a condition of broader sympathies in architecture, and a feeling that *A* need not be necessarily all wrong because his idea of architectural style differs from that of *B*. As far as architecture is regarded as a pure art, of course everyone may feel justified in contending for the kind of art which he believes to be the best, without respect of persons. But even from this point of view, it must be remembered that no theory of art is infallible, and it is scarcely reasonable for anyone to assume that his view of the subject is necessarily and infallibly the only right one. And beyond this, it is to be remembered that architecture, or at least the practice of it, is a profession as well as an art, and a profession which it is desirable that the public should respect and think well of; and the public are not so likely to think well of a profession whose members seem not to be able to agree among themselves; so that here the argument of expediency as well as of "goodwill to men" comes in. As already implied, there is fortunately far less necessity for the caution than there used to be; but we fancy there is room for some improvement yet.

And may we not say a word also for the rather large army of subordinates in architecture: those who are, and from circumstances probably always will remain, "assistants," and do a good deal of the hard work of architectural practice without any chance of its prizes. It is, we fear, a somewhat dull and disheartening life; but it may be more or less so according to the extent of good feeling and mutual respect existing between the principal and his assistants. That this does exist in many instances we have no doubt, but we have heard of instances very much to the contrary. It rests with the principal whether his assistants feel that they are friends or only employees; whether their work is to some extent a pleasure, or only a task. It is a part of the doctrine of "goodwill to men" that a principal should recognise cordially the work of his assistants, and treat them as friends rather than as mere servants. He will probably get better work out of them; he will certainly make their lives pleasanter at no cost to himself. In Germany we believe the recognition of the work of a skilled assistant takes the poetical form of his name being mentioned in connection with accounts or illustrations of the building on the design of which he has worked. This is a practice well worth consideration in England. But in any case the valuable work of the assistant should receive cordial and sympathetic recognition within the office even if he has no recognition before the public.

With these few thoughts suggested by the season, we offer to all our readers our best wishes for Christmas, both for present happiness and future prosperity.

Partnership in Design.

It is a very common error to presume that a design must be the work of a single individual; and that the weaknesses of the individual are necessary to give charm to the work of art. It is necessary to point out this fact, and also to point out that it *is* an error whenever one has to consider the work of two or more artists who have, all their lives, been in constant collaboration.

Whenever such collaboration lasts for any length of time one may be sure that each artist is doing his own share to the satisfaction of the other, or others, and that each is achieving, as far as his abilities permit him to achieve, his own ideals. It is necessary to the continued success of such association that the ideals of each should not only be similar, but that they should take the same form. It is only this matter of form of expression which makes artists seem to differ at all widely upon any question of art. Fundamentally all agree—all think alike—all know which one among several designs, no matter in what form expressed, is the best—which gets nearest to the indefinable standard—perfect beauty.

Nearly everybody possesses some of the artistic instinct, a feeling, a longing after something more beautiful than that which the eye beholds; but with most people it remains for ever either wholly undeveloped, or, after some slight cultivation, becomes defiled, due to the contaminating influence of natural human vanity which leads to too much rapid conclusion, too little thought and discussion, and too light consideration of a subject as regards which conclusions must come slowly; thought and discussion must not be spared; and consideration of every little cause and effect must be deep and serious. It is against the person who dabbles in art, or who makes it a mere vehicle to social position or wealth, that we must bring in the indictment of responsibility for the creation in human works of all that is below that standard of beauty represented by normal nature. It is natural for every normal person to love that which is normal according to Nature. And the artistic instinct leads the imagination to desire to discover what constitutes that normal; and the long search which the imagination makes after the elements of the normal creates the ideal.

In the imitative arts, which deal with time and space, or form and action—such as painting and sculpture—the realisation of an approximate normal is comprehensible to all who have been intellectually stultified by the influence of the work or teachings of those who have become abnormal by following the line of the least resistance, which drains away the filth from the road that leads to the ideally beautiful. But in the creative arts (which comprehend time only music) and space only (architecture), to establish in the average healthy mind the normal—below which is all ugly and above which all is beautiful—is less easy of realisation, because that which is purely artistic—of purely human creation—lacks, for purposes of comparison, the natural assortment of species (with which everybody is familiar), among which the approximate normal may be found before the ideal is attempted. In music and in architecture the standard from or by which all variations must be measured can only be approximately fixed, because it is an average value, placed by those who have taken part in and studied its development, upon the total result of all the work produced up to a given time—it is a living standard that grows or diminishes and varies with given periods of time, climatic conditions, and the social condition of the people by whom it is created.

In all the arts it is necessary to separate clearly considerations of beauty and greatness, and reserve an especial interest in each. Thus it may be possible for the Parthenon and a cottage to be equally beautiful, as judged by the standard of the type, but it is not possible for each to be equally great. Again, it is not possible to judge a palace in England and a palace in Italy by the same standard, when the condition of intensity of light alone are so different as to render necessary a change in every proportion and effect of every detail. Nor is it possible to apply the same measure to the work produced by a savage decorating his hut, and a Greek or modern French sculptor ornamenting some great public building.

Such truth seems so plain as hardly to require the statement of them, but one has only to have had the experience which every American visiting Europe encounters to know that they are realised by very few people who discuss art, and especially by those who speak of architecture. To mention American architecture to the average layman in England is almost equivalent to inviting the challenge: "You have no architecture in America, except your sky-scrapers, that is anything but a copy of ours—you have nothing to compare with our cathedrals"—forgetful that the American has quite as much proprietary interest—perhaps more—in the artistic productions of a century and half ago and more as the Englishman has himself.

Criticism of Ancient Buildings.

The current number of the Architectural Association Journal contains an article on Amiens Cathedral by Mr. A. L. Snow, which merits a note, since it sets a rather bold precedent for criticising a celebrated mediæval building with the same freedom which would be applied to a modern building. Mr. Snow does not at all believe in Amiens Cathedral, the carving of which he considers "machine-like," and the building as a whole "a big soulless boast in stone," a character which he accounts for by giving some reasons for believing that it was built rather to promote the commercial advantage of the town than as an offspring of religious enthusiasm. We do not feel convinced (by his arguments) as to this, and we think his depreciation of the character of the detail somewhat exaggerated. But he is certainly quite right in his criticism as to the unsatisfactory general design of the west front, the poor treatment of the towers, and the want of consistent scale about the whole. Some of these defects arise from the difficulty which Fergusson pointed out as characteristic of French Gothic—the passion for great internal height, which left no possibility of producing external features which would really dominate the composition. Mr. Snow also gives some sketches of interior details, and says — "compare them with Wells, Lincoln, etc." He is quite right; and this perception of the superiority of our English detail cannot be too strongly insisted upon, in consideration of the constant efforts made by American writers to maintain that no Gothic architecture but the French is worth anything. But the point that mainly strikes us is that Mr. Snow has had the courage to assume that a mediæval building is as open to criticism as a modern one, and is not merely a production to be blindly worshipped. We want a little more of this reasoning and reasonable attitude of mind in regard to ancient buildings, and the Association ought to feel indebted to Mr. Snow for having started it.

" Scientific " Bricklaying.

The American economiser is still economising. He has extended his operations to the excavator and the bricklayer. "It was observed," he says, "that there was a lot of waste and lost motion in shovelling. Scientific observers noticed the strain necessary in lifting a shovelful of coal, of lime, of earth. They noted how, in tackling a heap of coal, there was less strain in going at the coal from the level that from any part of the heap above the level; and per contra, a pile of lime could be attacked with a shovel better by digging into it than by shovelling from the bottom. Finally, after a number of practical tests, a shovel was devised that held exactly 22lbs., which, it was calculated, was the exact weight an ordinary labourer could lift in a shovel without injuring himself, and without economic loss to his employer. Different styles of shovels were invented for coal, for lime, and for other materials. The net result of this experiment, which was conducted by Frank B. Gilbreth, of New York, was almost to double the capacity of a gang of labourers for shovelling, without in any way tiring them more than under the old conditions. Even more interesting was another experiment conducted by Mr. Gilbreth, with regard to bricklaying. In this case, the movements that a bricklayer goes through in laying bricks were reduced from eighteen to six —and the capacity for work, all other conditions being equal, was increased from 1,000 bricks a day to 2,700. How was it done? Simply scientific method. Scientific observation at first noted the absurdity of making a bricklayer bend down and pick up each brick as it was needed, and a movable platform was invented whereby the platform was always kept on a level with the wall that the mechanic was building. Then, scientific observation noted that the bricklayer went through the motion of weighing each brick with his hand as he took it up, and rejected the brick if it did not answer his requirements. So scientific observation caused the bricks to be weighed and tested before they were sent to the bricklayer. In like manner it was observed that the bricklayer had to take up each brick and make sure the right side was out. That was remedied by having the boys who worked on the movable platform arrange the bricks right side up and out before they reached the bricklayer. Finally, scientific observation saw that the bricklayer with the laying of each brick tapped it with his trowel to set it in place. If the brick was of proper weight and the mortar was adjusted properly to that weight, said scientific observation, the brick would fit into the mortar of its own weight. Whereupon this was done. So the method of bricklaying, which had been the same from the time of the Pharaohs, was at last improved by scientific method." We understand also that "scientific" observation has already indicated an economic method of sucking eggs.

What is a Structure?

THIS question, which is both perennial and almost infinitely various, was dealt with recently at Bow Street Police Court, before Mr. Curtis Bennett, when Messrs. A. and F. Pears (Limited) were summoned for having erected a structure without the consent in writing of the London County Council; and, alternatively, for extending beyond the general line of buildings a projection from a building without the permission of the London County Council, contrary to the provisions of sections 22 and 73 (8) of the London Building Act, 1894 57 and 58 Vic., c. 213). Mr. Bodkin, on behalf of the London County Council, said that the subject of contention was a projecting ornamental iron canopy or framework over the entrance to Messrs. Pears's premises in New Oxford Street. It was 18ft. long, one foot ten inches in depth, and projected four feet six inches from the front of the building. Its shape was rectangular, and it was evidently a heavy, permanent, and substantial thing. This case was another instance of the grave difficulty of dealing with the provisions of the London Buildings Act, and especially with regard to these two sections. His proposition was that this was mainly a question of fact, and in coming to the conclusion whether this was a structure or projection the magistrate should have regard to its size and character, and to its permanency and method of erection—whether it was merely hung, or whether it was bonded into the structure of the building, and whether to take it away would entail damage to the structure against which it was erected, as distinguished from the insignificant damage caused by a few holdfasts to hang up a sign. Mr. Dalby contended that the canopy was not a structure or projection as defined by the London Building Act. The magistrate said there was no doubt that this was a projection. It was a very substantial thing, and there was no question that it could not be taken down without removing part of the structure of the building. In his opinion it was a permanent structure put up and made part of a building, and he thought the consent of the Council ought first to have been obtained. He made an order for the structure to be removed within one month, and imposed a penalty of 20s. on each of the two summonses, with £10 10s. costs. On an application by Mr. Dalby, the magistrate decided to state a case for the superior Court.

Model of the British Building at Turin Exhibition.

A REMARKABLE model of the buildings in the British Section at the forthcoming Turin Exhibition is now on view at the Exhibitions Branch of the Board of Trade. The miniature is 1/500th the actual size, and is complete in every detail. Thus the Machinery Hall, 158ft. 4in. long, is in the model only 10ft. 6in. The façade, which from the Valentino Park looks down upon the River Po, and confronts the sections held under the auspices of various Great Powers, on the model is 13ft. long, but in reality has a graceful sweep of 650ft. The 3ft. height of the tallest tower represents 150ft. in the actual building; while the central and supporting domes of the main façade are each 200ft. high. The superficial space occupied by Great Britain at the Exhibition, which is to be opened on April 29th by the King of Italy, is roughly 5 acres—much more than that taken up by any of her commercial rivals—and the site, for picturesqueness, and, what is much more important, for commercial value, is the finest in the exhibition grounds.

Crisis in the Aberdeen Granite Trade.

IT appears that much discontent has been for some time felt by those Aberdeen granite firms who have largely transacted business through the agency of middlemen; and consequently a special committee of the Granite Association was appointed to enquire into the circumstances, and to suggest remedial measures. One of the chief allegations is that the agency system results in serious depression of prices; and at a meeting of the association a price list that had been drawn up by a special committee with the object of securing uniformity of quotation, was presented and discussed, when a motion approving the principle of a uniform price list was adopted by an overwhelming majority, and five members were added to the committee, with a view to the compilation of a more exhaustive price list. With respect to the American trade, it is proposed that the producers shall themselves form a company to take over the work of agency.

The Mall Extension Muddle.

THE report of the Improvements Committee of the London County Council on the Mall Improvement, which was printed in last week's Journal, has naturally excited much comment in the Press. The "Morning Post" roundly describes it as "a humiliating document." The Mall improvement, the critic continues, is a work of national importance. Its object is not merely to beautify in noble fashion the greatest city of the Empire, but to make this part of London more convenient for the growing general and local traffic. Yet the Government would reduce it to the level of a petty squabble about the extension of a suburban alley. The Chancellor of the Exchequer, with a light heart, gave £10,000 towards a picture, but the First Commissioner of Works refuses to contribute, say, £50,000 to complete a scheme which his Department began about ten years ago, and led the County Council to believe that no co-operation on the Council's part would be necessary. On the other hand, the Government aver "that the Council from the first was warned that it would be necessary for it to contribute towards the cost," and the First Commissioner points out that the Government has already spent a large sum of money on the improvement.

The matter stands thus. The Government, having created a noble memorial to Queen Victoria, now resolve that it shall remain half hidden by an ugly bottle-neck terminus, unless the County Council and the local authorities remove the eyesore. This is a sorry attempt to effect a great and Imperial achievement. This *retardataire* and penny-wise spirit seems to us ("Morning Post") the more strange after the lessons of the late Town Planning Exhibition. There we saw that the cities of the Continent and America are becoming beautiful regardless of expense. Paris is supposed to be the finest town in Europe, but not long ago we read that £32,000,000 is to be spent in making it still more beautiful and accessible. If a paltry £50,000 had been considered, the magnificent Ring Strauss of Vienna, the spacious streets and squares of Budapest, and the splendid alleys of the "Tiergarten" in Berlin, would not exist. What, asks our contemporary, would the kings and potentates who will visit London next year think, should they see amid all the pomp and grandeur of triumphant procession the unsightly obstruction that now spoils a splendid prospect, and be told that the British Government could not afford £50,000 to clear away the banal impediment?

L.C.C. New General Powers Bill.

THE London County Council Tramways and Improvements and General Powers Bills for the Session of 1911 have been approved at a meeting of the Council. The former contains proposals for the construction of about 14 miles of new tramways and the reconstruction of about a mile of existing tramways. Amongst the miscellaneous proposals are powers to provide and maintain shelters for tramway passengers. The estimated cost of the proposals in the Bill is £1,187,600, of which £357,260 is in respect of street improvements. The General Powers Bill contains a number of interesting items. Power is sought to enable the Council to develop, or let on lease for the purpose of development, on the lines of a garden suburb, any portion or portions of the White Hart Lane estate. There are further proposals for the amendment of the London Building Acts.

Architectural Modelling.

IN the current issue of "The World's Work and Play," an appreciation of the modelling work of Mr. John B. Thorp states that that eminent specialist has been making models since 1880, and that he has been instrumental in saving thousands of pounds to his clients, either by proving some vital point in the course of legal proceedings, or by suggesting some important modification of which the effect was not realised until the project was seen in three dimensions. It is notorious that, with most people, the art of reading plans is not easy of acquirement, and that hence the architect often finds it extremely difficult to explain to clients the significance of designs in the flat; but a well-constructed model can hardly be misunderstood. Another function of the model is the facile exhibition of alternative positions and dimensions. Thus, some time ago, when it was resolved to build a new tower for the church of St. Thomas, Ferry Side, a model was constructed in such a way as to extend or decrease at will the height of the tower, so that its effect in relation to the main building could be judged to a nicety. A further use for models is illustrated by the statement that Mr. Thorp has been commissioned to make a realistic model of a certain Tudor mansion for transmission to a prospective purchaser residing in the United States. The models of Old London which attracted so much attention at the Franco-British Exhibition in 1908 demonstrated the extraordinary skill to which Mr. Thorp has attained.

Appeal Under the Housing and Town Planning Act.

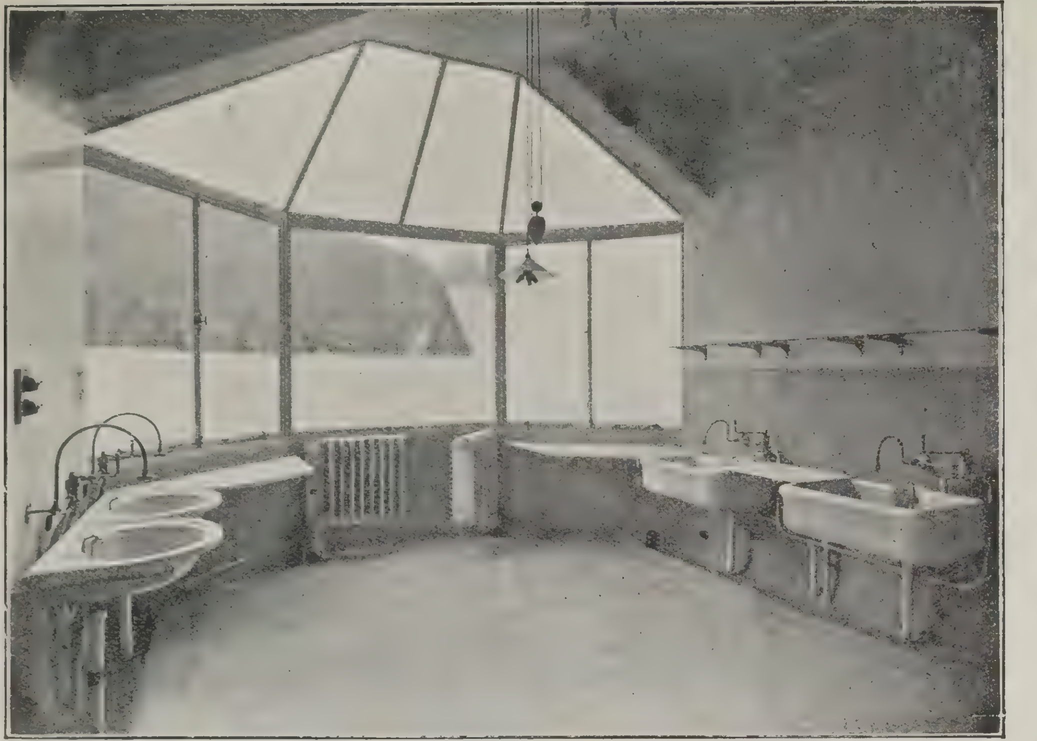
IN a report to the Kensington Borough Council upon a point arising out of the Housing and Town Planning Act, the Law and General Purposes Committee say:—"We have considered, pursuant to the reference by the council of October 25, the letter from Messrs. Rubinstein, Nash, and Co., forwarding copy of a communication addressed by them to the Press relating to certain proceedings in which a client of theirs had been concerned under the Housing and Town Planning Act, 1909, as proving the cumbersome and vexatious character of the procedure laid down thereunder. The principal grievance referred to is that the appeal from an order of a sanitary authority is not, as heretofore, to a Petty Sessional Court, but to the Local Government Board, and that the case cited showed conclusively how unsatisfactory is the procedure followed by that Board in determining an appeal. Our attention has also been called in connection with the reference to correspondence which has recently appeared in 'The Times' directing attention to the serious nature of this appeal provision of the Act in divesting an owner or occupier of all his legal rights as a citizen, and in placing him absolutely at the mercy of the Local Government Board. We are clearly of opinion that an error has been committed by the Legislature in making a Government department the appeal tribunal under the Act, and consider that the Act requires amending in the direction of the substitution of a judicial tribunal for the Local Government Board in cases of appeals arising thereunder." The committee recommend the council to make representations accordingly to the Prime Minister and the President of the Local Government Board.

The Cheap Cottage Problem.

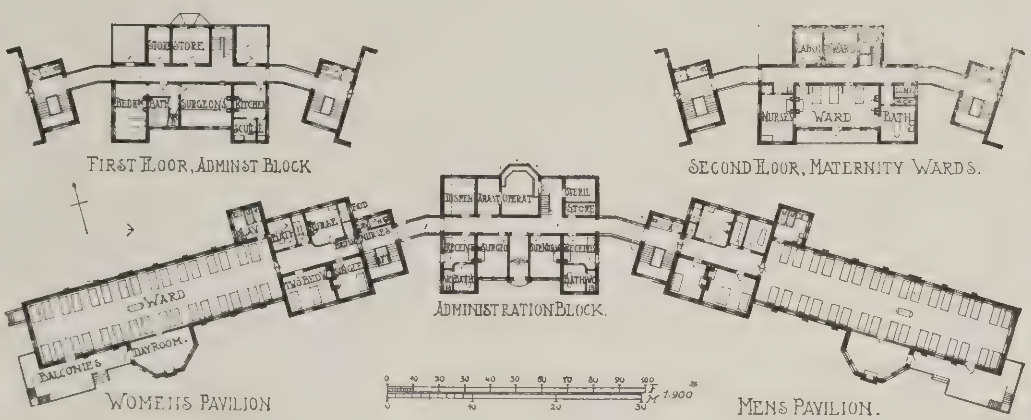
A LANCASTER correspondent of the "Spectator," Mr. Thomas B. Gorst, writes: "Having built two small houses of concrete blocks in the early part of this year, I have since given my attention to the building of workmen's cottages at a cost of about £130. I am building a block of six cottages, of which three are now finished. Each cottage contains five rooms; all the rooms are well lighted. The kitchen has a cupboard, with drawers under, and the scullery a boiler and sink, and is well shelved; the large bedroom has a hanging wardrobe; the stairs are of easy go, and have no objectionable winders. In front is a small garden 15ft. square, behind a concrete yard 15ft. square, divided from others by a 6ft. wall, and beyond it are an e.c. and coalhouse, a private road, and a garden extending thirty yards in length. I am prepared to sell the cottages and land inclusive for £145 each for three or six. The houses are each supplied with water from the Thirlmere main. My blocks are made of five parts sand and clinkers to one part of cement. The sand cost 3s. 10d. per load on the site and the clinkers 3s. 2d. per load." The editor of the "Spectator," whose interest in the question is, as our readers know, exceedingly practical, congratulates Mr. Gorst on "a very remarkable achievement."

A Classification of Architects.

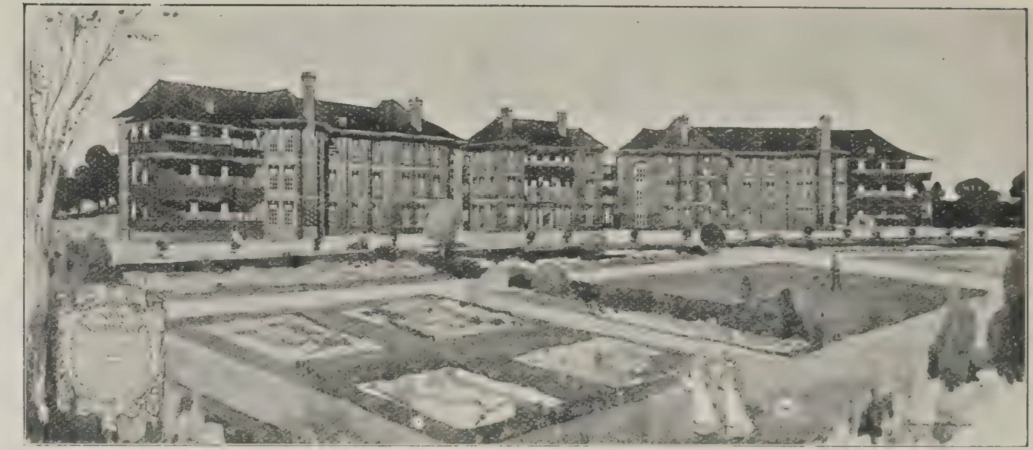
AS a corrective to the personal estimate of one's own abilities and achievements, there is nothing like seeing through someone else's eyes, and on that account it will be interesting to architects to read what a lay critic says of them in the current issue of "Printers' Ink." Dividing architects into three classes—(1) those who stand highest in the profession, (2) the "art nouveau" and garden city architects, and (3) the "lath and plaster" ones—the writer proceeds to observe that all professional classes have prejudices and architects most strongly. "Indeed, an architect will actually quarrel with the client, for whom he is being paid to build a house, as to the plan and style of the building! Often enough it is a case of paying the piper and submitting to whatever tune he chooses to play. The theoretical architects and professional lecturers are the worst designers, for the development of a highly critical faculty diminishes their power of performance, and they become at length idiosyncratic. Their knowledge covers so wide a field that they cannot trust the designer or maker of decorative materials to know his own business; they find fault with all he may offer, or waste his time on the production of ideas of their own." Such architects will therefore please note and remember.



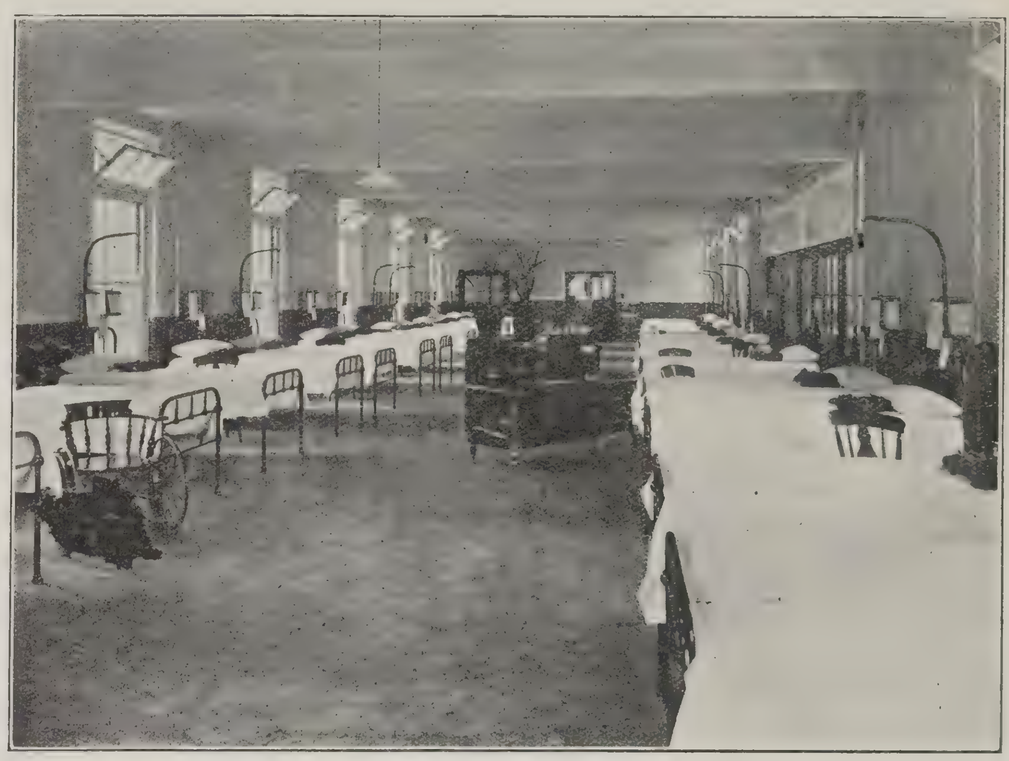
The Operating Room.



Plans.



General View.



One of the Large Wards.

NORWICH NEW INFIRMARY. MORGAN AND BUCKINGHAM, ARCHITECTS.

THE NEW INFIRMARY AT NORWICH.

The accommodation for the sick poor of Norwich having become wholly inadequate, the Norwich Board of Guardians decided, in March, 1908, to build a new infirmary, with a women's wing and a central administrative block. As these needs are common rather than peculiar, the manner in which they have been met, as shown in the accompanying illustrated description, will be seen to possess much general interest and practical value.

The building, which was ceremonially opened on October 26, 1910, is erected on vacant ground to the west of the existing old infirmary, and is situated so as to obtain the greatest amount of sun possible. It contains the administrative block and the women's pavilion, the old infirmary building being used at present as a men's pavilion. The whole design, when completed, with a new men's pavilion, will accommodate 215 patients, including 110 women and 105 men, and a resident medical officer.

The administrative block contains, on the ground floor: entrance hall, offices for resident medical officer and superintendent nurse; receiving rooms for men and women; dispensary; anæsthetic, operating, and sterilising rooms. The second floor contains a suite of rooms for the resident medical officer, and store rooms, and the third floor contains the maternity wards.

The women's pavilion is connected to the administrative block by a well-lighted corridor, the three floors having the same plan, which includes, on each floor, a large ward for thirty-two beds, a single bed ward, and a two-bed ward, a day room screened off from the large ward, duty room for charge nurse, linen store, bathroom and lavatories, and small stores.

A large balcony is arranged on each floor, with entrance from the day-room and large wards, suitable for beds for open-air treatment, to which is connected the emergency staircase. Adjoining the connecting corridor is the main staircase, in the well of which is an electrically driven push-button bed lift fitted with the latest improvements for guarding against accidents of any kind.

Spacious basements are arranged below the ground floor of each building, which serve for the distribution of hot water for service, and for heating the building. An electrically driven pump is also fixed in the basement for supplying the storage tanks situated in the roof with water from the house wells.

The building has been constructed as far as possible with fireproof materials, the whole of the floors, supporting beams, ceilings, and staircases being built *in situ*, with reinforced concrete, the floors being covered with Doloment jointless flooring, and the walls to a height of 4ft. with green glazed tiles. The details of the construction, including the woodwork, have been designed to avoid angles, corners, and crevices which are likely to contain dust, and the whole building can therefore be kept perfectly clean with the least possible labour.

The nurses' duty rooms are provided with the latest designs in convenient gas cookers and steam hot-plate closets. The operating room has a large plate-glass bay window with top light, and is well fitted with surgical lavatories and glass shelves, and steam-heated swinging radiators, with fresh-air inlets, screened for cleansing the air from dust before admission. The floor and walls to a height of 4ft. 6ins. are laid with white marble mosaic, and the upper portion of the walls and ceilings are treated with white petrified liquid, which gives a glazed surface without joints, and is perfectly smooth.

New bedrooms to accommodate twelve additional nurses have been added to the Nurses' Home, and the dining and sitting rooms have also been enlarged.

The architects are Messrs Morgan and Buckingham; the building contractor being Mr. W. J. Hannant, of Norwich; and the following is a list of the other contractors:—Bricks, Messrs. Cunnell Bros.; plumbing and sanitary fittings, Messrs. Watson and Kirby; stone work, Mr. Edward Potter; plaster work, Messrs. Crotch and Son; escape stairs and iron railings, Messrs. Barnards, Ltd.; electric pumps, Messrs. Pank and Son; tile workers, Messrs. Craven, Dunnill and Co., Jackfield, Shropshire; reinforced concrete, Messrs. Bradford and Co., Homerton, London; electrical lift, Messrs. Smith, Major and Stevens, Janus Works, Battersea; central ward stoves, Messrs. Musgrave and Co., St. Ann's Works, Belfast; jointless flooring, the British Doloment Co., Ltd., Caxton House, Westminster; heating and hot-water service, the Brightside Engineering Co., Ltd., Sheffield; locks and door furniture, Messrs. Wing and Webb, Wolverhampton; iron casements, Messrs. Crittall, Braintree; addition to the nurses' home, Messrs. Scarles Bros.; electric lighting, the Norwich Corporation. All whose addresses are not otherwise indicated are of Norwich.

The cost of the women's wing of the New Infirmary, including the central administrative block, was £12,500, and the cost of furnishing and equipment £1,750 The extension of the nurses' home cost £1,500, and the furnishing £130.

NURSES' HOME, NORWICH INFIRMARY. MORGAN AND BUCKINGHAM, ARCHITECTS.

Additions to a West End Church.

Additions at the west end of the Church of St. John the Baptist, Holland Road, Kensington, were dedicated by the Bishop of London last week. The church was founded by the Rev. George Booker 42 years ago, and has now been completed by the addition of a stone front bearing a statue of St. John the Baptist, sculptured by Mr. Taylorson, a new baptistery, and new north and south porches, at a cost of £5,000. The large west window has been filled in with stained glass in memory of the late John Burgess Knight. The windows in the baptistery and the porches represent different aspects of the Saviour in His work, and have been given privately. The original architect of the church was Mr. J. Brooks, and the additions have been designed by Mr. Adkins.

* * *

Glasgow Alhambra.

Glasgow Alhambra, the new theatre of varieties which has been erected on the site formerly occupied by the Waterloo Rooms, has just been opened. The building has been designed by Messrs. John Burnet and Son, Glasgow, in conjunction with Mr. J. Emblin Walker, and constructed by Mr. George L. Allen, Glasgow. The vestibule, which is circular in form, is entered, from Wellington Street, through a mahogany screen with six swing doors. The floor is of white marble, and there is accommodation for some 2,500 persons—350 in the orchestra stalls, 594 in the stalls, 258 in the dress circle, 370 in the family circle, 264 in the second tier (front amphitheatre), and 600 in the gallery.

* * *

The Licentiate R.I.B.A. Movement.

A largely attended meeting was held at the Liverpool Architectural Society's rooms on December 12th, with Mr. Arnold Thornely, the president, in the chair.

Mr. A. W. S. Cross and Mr. Hubbard delivered their addresses in explanation of the R.I.B.A. Council's policy in creating the new class of Licentiate members. The meeting cordially supported the Institute's proposals, and many architects asked for application forms.

Thanks to the energy of the president of the Liverpool Society and its hon. secretary, Mr. Fraser, many architects went from a considerable distance to Liverpool, and gave some interesting experiences, showing the necessity for carrying forward the Institute's policy of obtaining registration. On the following evening Messrs. Cross and Hubbard addressed a meeting at Rhyl, at which Messrs. Thornely and Fraser again attended. This meeting was arranged at the suggestion of Mr. George Humphreys, of Llandudno, who made an excellent speech in support of the movement. All the architects present who were not attached to the Institute or any allied society, signified their desire of joining the Institute as Licentiates.

THE MALL DEADLOCK.

At the meeting of the London County Council on December 20th, Lord A. Thynne presented the report of the Improvements Committee on the subject of the extension of the Mall to Charing Cross.

Sir George Goldie moved to amend the committee's recommendation that the Council was not prepared to carry out the extension unless the Government contributed a third of the cost to the following effect:—"That in view of the refusal of His Majesty's Government to co-operate in the matter the Council is not prepared to carry out the extension of the Mall to Charing Cross."

Sir John Benn said he thought the Council would agree that the condition of things with regard to the completion of this great public improvement was a scandal. The conception of the improvement was the relief of the traffic in this part of London. Some £300,000 had been spent upon it to provide a great thoroughfare to Pall Mall. The object of the committee seemed to be to cast blame on the Government, which had carried out to the letter the policy of the Government which preceded it. He was in agreement with the proposal that this matter should be settled on the principle of joint contribution, and later he would move that this principle should be carried through the value of the sites of the houses given by the Government to be deducted from the Government contribution.

Colonel Probyn considered if this were done the City of Westminster should be compensated in respect of the loss of rates on the houses pulled down to clear the sites.

Lord A. Thynne said the Council had never been consulted as to the plans of this improvement. If the Council had been made acquainted with the plans, the property it was proposed to pull down to make room for the extension would have been acquired much more cheaply than was possible now. The Government said in effect:—"It is your business to complete this improvement," and refused to consider any proposal of the Council. He thought the Government should meet the Council in a more generous spirit.

Mr. F. Smith said this was a national improvement, which should be paid for nationally.

The amendment was carried by 35 votes to 30, and became the motion before the Council.

Sir John Benn afterwards moved an amendment in the terms he had suggested, but he withdrew it to second an amendment submitted by Mr. Hayes Fisher to the effect that the Government be invited to meet three representatives of the Council—himself, Lord Alexander Thynne, and Sir John Benn—with three representatives of the Westminster City Council, with the object of settling the proportion which shall be paid towards the completion of this national memorial.

The amendment was accepted unanimously, and became the resolution of the Council.

THE PRELIMINARIES OF SCHOOL PLANNING.

BY PHILIP A. ROBSON, A.R.I.B.A.

The lecture of which an abstract of the first portion is given below is largely an elucidation of the Building Rules of the Board of Education, with a brief historical introduction. It was delivered at the Royal Institute of Public Health, and was entitled "The Hygienic Planning of Schools." A further section will appear in a future issue.

WITHIN the limits of a short address on so vast a subject as the Hygienic Planning of Schools, it is impossible to deal with it in any but a somewhat general manner. The author proposed, therefore, to limit himself chiefly to such matters as appertain to public elementary schools.

The Rise of Elementary Schools.

The first important association for the general spread of education was the Society for Promoting Christian Knowledge. Its charter, granted in 1701, proves that its object was to set up catechising schools and lending libraries, and to distribute good books in and near London. By 1741 the Society had assisted in the establishment of over 2,000 schools, both for girls and boys. The State did not awake to the crying need of systematic education till 1833, when actually £20,000 was voted for this purpose; whereupon the National Society, and the British and Foreign Schools Societies, were established. Further grants were made in 1835 and 1839, and from the latter date to 1860 the total grants of the State amounted to £4,378,183. In 1870, after full statistics as to the impossibility of private enterprise coping with the appalling arrears of educational neglect, came Mr. W. E. Forster's famous Elementary Education Act, which was followed by a supplement in 1876. Henceforth it became compulsory for every child to attend school, which had to be provided within reasonable reach. The remaining Acts which concern us are the so-called Free Education Act of 1891; the Voluntary Schools Act of 1897; and finally, the Act of 1902, by which all schools are placed under one secular authority, and all elementary schools are financed alike in regard to maintenance. The control of schools, and the allocation of grants necessitated the formation of a Department of State called "The Education Department," latterly known as "The Board of Education," which attends to all matters dealing with education through local educational bodies popularly elected.

Hygienic Importance of Site.

Each of these local authorities finds that the call for a new school will depend, after filling existing wants, on the probable growth of the town. Possibly a factory is being built involving the increase of 1,000 small houses. At once a site must be found, and it is at this initial stage when so many irremediable mistakes are made. Back-land is bought with practically no frontage merely because it is cheap, and although it is liable to be shut in by high buildings.

At this critical moment the skill of an experienced architect is needed who might at once say: "This site has no recommendations. It is deficient in frontage to a main road; it slopes to the north instead of to the south; it is impossible to drain it satisfactorily, as it is below the level of the adjoining sewers; the adjoining land drains on to it; no level playgrounds can be made except at great expense, and the subsoil is clay." Such condemnation would show the least educated member of any committee that this site was to be avoided at any price. Of course it is necessary in some crowded districts to take what can be got; but this, fortunately, is exceptional. It is, therefore, all-important to know what a good site is.

Building Regulations.

The following points laid down in the Building Regulations (1907), which are nearly the same as those which the author's father drew up while acting as consulting architect to the Board of Education, are worthy of special notice: "In planning a school care must be taken to secure that there shall be an open, airy playground proportional to the size and needs of the school, and the site should if possible have a building frontage suitable to its area as far as the site permits. The building should not be placed near a noisy street or a main thoroughfare; where this is, however, unavoidable, the class-room windows should be placed on the side opposite to the street. A site open to the sun is especially valuable for the children, and important in its effects on ventilation and health. The class-rooms should be so arranged as to ensure the admission of direct sunlight during some parts of the day."

The minimum size of a site, after deducting all wastage—as a cookery centre, caretaker's house, etc.—is a quarter of an acre for 250 children. This amount may be lessened to the irreducible minimum of 30 sq. ft. of open space per child if the school be of more than one storey.

Except in the case of very small schools, the playgrounds for the sexes are to be separated. They should be fairly square, properly levelled, drained and enclosed. Part should be covered, as a playshed (with top ventilation) against a boundary wall. Sharp buttresses, recesses, and corners should be avoided. The infants should, of course, have their playground on the same level as their classrooms, and it should be as sunny as possible.

An Ideal Site.

The ideal site faces south or south-east, has a gravel subsoil, is on high ground sheltered from the north by trees of the genus Pinus, and is fairly level, and away from all dust and noise. This is rarely attainable, especially in towns. The following few points which occur in practice are of value to members of a "sites" or "building" committee. If one side of the site fronts a broad, quiet road, so much the better; if the houses opposite the site are low the light and air will be better; the back parts of the surroundings of a site should be carefully examined, as it may be impossible to set the buildings back properly to avoid noise and dust from the street by reason of some noxious trade smell; if so, such a site is unsuitable. Narrow passages against school buildings are a nuisance—they are insanitary, and act like one of Bach's long silver trumpets for resonance.

The approaches to a site should also be carefully considered—for instance, girls should not have to pass a noisy public-house. The subsoil should be carefully examined by boring in three or four places. Some sites, apparently ideal, may be found to have undesirable subsoil below a good top stratum of gravel. The site should be easily drainable both for surface water and for the lowest part of the proposed new buildings, probably the heating chamber. The adjoining land should not drain on to the proposed site.

In towns it may be desirable to have a roof-playground for the sake of economy.

I have dwelt at some length on sites because the hygiene of a school begins with its site, and herein lies a matter of great permanent importance. You may pull down your buildings, but you cannot change a bad site into a good one. Thus by initial carelessness it is possible to cause unintentional but grievous harm to countless generations.

Playgrounds.

In Great Britain sunshine is a great source of health. Playgrounds should, therefore, receive the maximum amount of sunshine at such times as they are most used. In other words, they should face south, or as nearly south as is practicable. Examples have been held up as desirable models from American and German schools. They do not apply here.

The under-draining of a playground is often forgotten. This should be carefully done with 2in. or 3in. agricultural pipes laid to proper falls. All playgrounds should be levelled, enclosed, and laid with tar pavement to sufficient falls to effectually and rapidly remove surface water. Gravel is sometimes used for economy's sake, but it proves expensive in the long run, as it is always working into holes; it provides handy material for window-breaking, and dangerous ammunition for snow-balling, and finally, it supplies much dirt, which is brought into the school. If tar paving is used it is best to lay it in two layers, and then in a year's time two more. This will be found thoroughly practical, and lasting.

Covered playgrounds are often provided, but they should not be open all round, nor even on three sides, because in east winds they are more than uncomfortable, and may be dangerous to health. A seat in a covered playground or playshed is useful in summer. All sheds should have apex or ridge ventilation. Unnecessary corners should be avoided, but buttresses may be sometimes rendered useful by painting wickets thereon for cricket when a playground is of sufficient size to warrant the monopoly of space which the game exacts. Near the infant school it is not unusual to place two or three closets specially for babies, apart from the other latrines.

Access for carts is desirable by double gates. These soon pay for themselves by the saving of hand-labour. The lockable entrances should be separate for the sexes.

Entrance and Staircases.

A main entrance to the building is usually unnecessary, and therefore extravagant in elementary schools. But the sexes should have separate entrances from their respective playgrounds, and the cloakrooms and staircases should be adjacent. It is a waste of the best aspect to place staircases on the south side. If the building be a long one, care should be taken that the staircases are not at the extreme ends. All staircases must be of easy gradient, and reasonably fireproof, and should be sufficient to allow of the whole school being cleared in three minutes, without the very doubtful aid of emergency stairs. These latter really apply to cases involving sleeping accommodation, and are ridiculous in day-schools. I consider that external iron staircases, which are very rarely used or tested, will prove to be sources of accidents, and in the case of day schools they indicate bad planning. If considered necessary, then another staircase should have been built in the first instance. All external doors should be made to open both ways—outwards to facilitate egress, in the case of panic; and inwards so that they may stand open and be unaffected by rain. Immediately outside there should be one broad step, say of 4ft., and immediately inside a metal scraper—not sunk in a mat space, as these are very difficult to keep clean. It is best to keep the outer threshold step up an inch or two to allow for the mat. An excellent mat is called the Rolamat, which is easily shaken clean. Strong iron scrapers, securely attached to the outside of the building, are also very useful in keeping as much dirt as possible outside the inner swing doors, which should be provided in all cases. With regard to staircases, any upper floor accommodating 250 or more children requires at least two. The usual width of staircases is 3ft. 6in. to 4ft., with a 9in. wall each side, and on both walls should be placed convenient handrails. The walls should have glazed bricks, tiles, or granolithic material, at least to the height of a man's shoulder. It should be remembered that any staircase wider than 5ft. will allow more than two people to pass, and this is dangerous in public schools. Thus, if you increase the usual 4ft. to 6ft. there is room for three children to pass abreast, and the centre one, in case of panic, would fall and create a dangerous block. Hence a wide staircase of this description must have a strong iron division and handrail in its centre, but the better plan would be to provide a second staircase.

The stairs should be of a very easy gradient; 5½in. rise by 13in. tread is admirable. The flights should be short, say, twelve steps as a maximum; the stairs non-slippery, and the whole reasonably fireproof. No windows are allowed. A good rule for staircases is that twice the rise of each step, plus the tread, should be equal to 24in. This gives what is called an "easy going."

SOCIETIES' MEETINGS.

Society of Engineers.

The first annual general meeting of the Society of Engineers (Incorporated) was held on December 12th, at 17, Victoria Street, Westminster, Mr. Diogo A. Symons, M.Inst.C.E., President, in the chair. The result of the postal ballot for the election of council and officers for 1911 was announced as follows:—President, F. G. Bloyd; vice-presidents, J. Kennedy, A. Valon, H. C. H. Shenton; members of council, Professor Henry Adams, C. T. Walrond, Norman Scorgie, Percy Griffith, T. E. Bower, Henry C. Adams, J. R. Bell, S. Cowper-Coles, Frank Latham, H. P. Maybury; associate member of council, E. Scott Snell; hon. secretary and hon. treasurer, D. B. Butler.

It was announced that the Council had awarded the following premiums in respect of papers published in the Journal during 1910:—The President's Gold Medal to Mr. W. C. Easdale for his paper on "Sewage Disposal Ideals"; the William Clarke Prize, value £5 5s., to Mr. S. M. Dodington for his paper on "Public Slaughterhouses"; the Bessemer Premium, value £5 5s., to Mr. C. W. V. Biggs for his paper on "The Inspection and Testing of Engineering Materials and Machinery"; the Nursery Premium, value £3 3s., to Mr. Henry C. Adams, for his paper on "Current Professional Topics"; a Society's Premium, value £3 3s., to Mr. A. H. Allen for his paper on "Electricity from the Wind"; a Society's Premium, value £3 3s., to Mr. C. R. Enock, for his paper on "Engineers and Empire Development."

The Chairman presented the report of the Council, which showed that the formation of the Society, by the amalgamation of the Society of Engineers and the Civil and Mechanical Engineers' Society, had been fully justified by the success of the first year's work.

Manchester Society of Architects.

Professor Capper on Westminster Cathedral.

In a paper read before the Manchester Society of Architects on December 14, Professor Capper, M.A., A.R.I.B.A., Director of the School of Architecture, Victoria University, Manchester, said that the idea of building a great Roman Catholic Cathedral in London might be said to date from the restoration of the hierarchy, with the appointment of an Archbishop of Westminster, in 1850. But it was not until the time of Cardinal Vaughan's prelacy that Mr. J. F. Bentley was, without competition, entrusted with the great work of designing the building.

Cardinal Vaughan laid down certain conditions as to size, space, chapels, and the style of the building, but otherwise Bentley had a free hand in the design. Owing to its proximity to Westminster Abbey, and to the existence of a great classic Cathedral such as St. Paul's not very far distant, it was considered desirable to avoid competition with either, as far as style was concerned, although Bentley had a decided leaning towards Gothic. Cardinal Vaughan, however, selected Byzantine, and Bentley felt that his duty was to accept the style (which he called "primitive Christian"), and adapt it to congregational needs. Almost immediately after his appointment, Bentley left for a tour of the domed churches of Italy, but curiously enough did not proceed to Constantinople.

Professor Capper then traced the evolution of the domed church from the simple nave with two or three domes, as found in the South of France, to the Greek cross type with five domes, as at St. Mark's, Venice, and proceeded to explain how Bentley's final design was arrived at, by plans showing three different stages in its development. The first scheme showed aisles axial with the eastern chapels, and two campanile at the west end. In the second, the nave arcade was continued across the transepts, which greatly helped the continuity of the interior, and, at Cardinal Vaughan's request, one of the campanile was omitted. The third and final plan showed the addition of the sanctuary aisles and a narthex, and the removal of the campanile to the north-west. Some very interesting diagrams showing the construction of the building were explained by the lecturer, who pointed out that externally the main flying buttresses were placed opposite the centre of the domes, and not opposite the piers, as one would expect. Externally, Professor Capper said, it was essentially a brick church, but he thought that the effect of the stone bands was perhaps rather too stripy, until they had toned down with age. The site was much too confined to afford a proper view of the building.

Mr. J. F. Bentley died suddenly on March 2, 1902, and it was not until January, 1903, that the bronze cross was fixed on the campanile. In conclusion, Professor Capper compared the cathedral with that of Alby, a brick building of the thirteenth and fourteenth centuries, with a vaulted roof of 60ft. span, and a dignified and impressive exterior, which he thought was a more restful treatment than that adopted at Westminster.

Derby Technical College.

Mr. Hamilton Thompson on Mediæval Buildings.

Mr. A. Hamilton Thompson, M.A., concluding his series of lectures at the Technical College, Derby, on mediæval castles, dealt with that interesting period when Gothic traditions in house building began to merge into the Renaissance, with its highly ornate but somewhat Classic detail. Among the most interesting examples shown on the screen was a fine picture of Wollaton Hall, Nottingham, and the lecturer described in detail the remarkable blending of Gothic work in the windows and general plan with the elaborate ornament of Continental origin. He was doubtful whether the statement that the house was designed by John of Padua would bear examination. A great many other late Gothic and Classic buildings were shown, among them being Hurstmonceux Castle, with its massive towers and sham battlements. Mr. Thompson made an appeal to his audience to do their best to preserve all local examples of antiquity which their town possessed, mentioning especially the Church of All Saints, the Jacobean House in the Wardwink, and the many fine Georgian houses in Friargate.

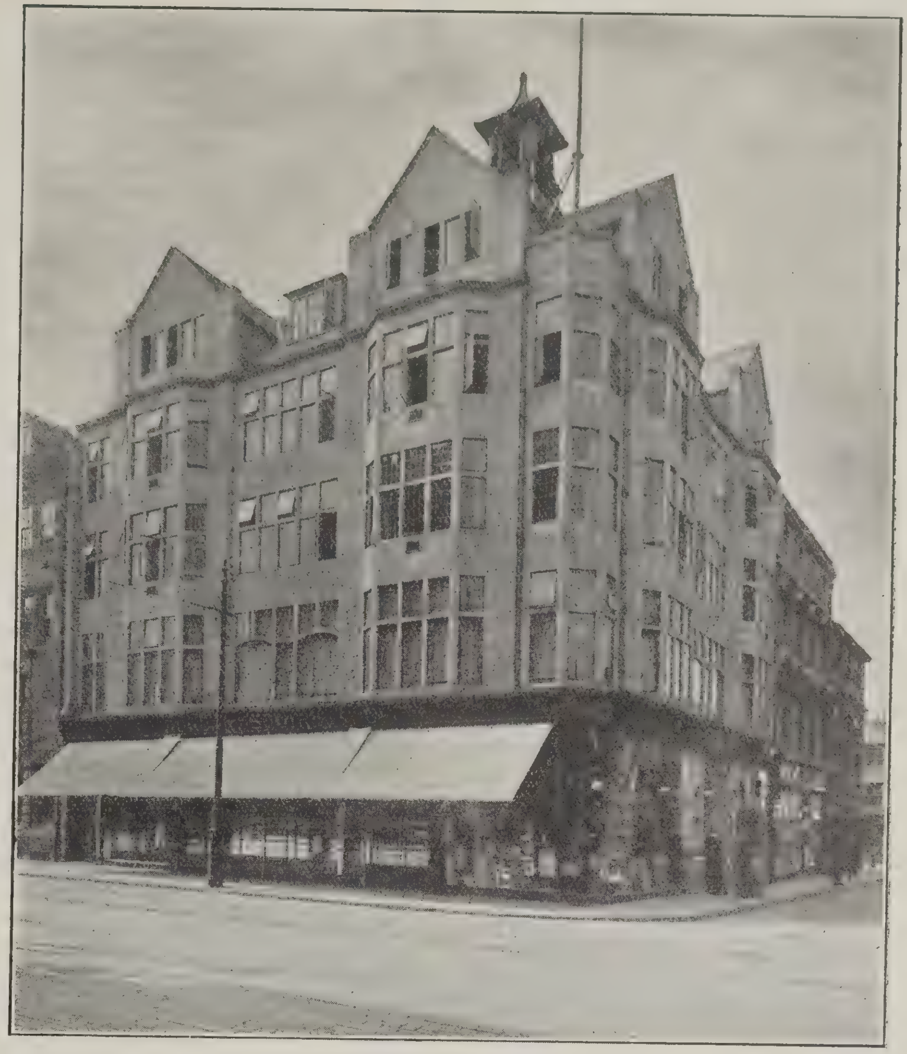
Institution of Civil Engineers.

At the ordinary meeting on Tuesday, December 20th, Mr. Alexander Siemens, President, in the chair, the paper read was "The Winning of Coastal Lands in Holland," by A. E. Carey, M.Inst.C.E. The following is a brief abstract:—

The first section dealt with the history of the gradual reclamation of the Dutch lowlands from the sea, and the general topography of the country. Reference was then made to historic inundations and to the devastation which the country has suffered from time to time by the bursting of the protective dams, and the principal reclamations, which has so largely altered the map of Holland.

The administration of the Dutch sea-defences was dealt with, and comparison drawn between the Polder Boards of Holland and the Courts of Level Commissioners in England. As an example of local administration, the author gave the income and expenditure of the polder in the Island of Schouwen. Attention was called to the national character of the work in Holland, and the assistance given by the Government in subsidising reclamation work, and in taking over the entire maintenance and control of sea-defence works, in cases where the local inhabitants would be unable to maintain them owing to lack of funds.

The construction of the typical Dutch "dike" or "dam" was then discussed, and a method of thatching earth slopes with straw was described, some details of the cost of facing the larger dams being given. A comparison was drawn between the principles adopted by engineers in Holland, and those of such river-walls as protect the Essex marshes in England. The gradient of the sea face of these walls is steeper than in the Dutch walls, which necessitates a higher crest-level in the latter case. The author describes a singular phenomenon, known as a "fall," which occurs on the submarine slopes, forming the toe of a protective dam, and discussed its causes. Attention was called to the extreme depths of water which occur close in to the artificial coast-line. The steps taken by Dutch engineers to repair the sites where "falls" have occurred were explained.



NEW BUSINESS PREMISES, HOTEL STREET AND MILLSTONE LANE, LEICESTER
EVERARD, SON AND PICK, ARCHITECTS.

Reference was made to the facing of sandy foreshores with concrete, and a short explanation of the new systems of coast-defence work, adopted by Mr. de Muralt, a Dutch State Engineer, whose methods have largely been adopted by the Dutch Government and Polder Boards, was given. For the protection of underwater slopes, fascine rafts, sunk under the weight of rip-rap stone, have hitherto been employed, and a comparison was drawn between the older method and one now frequently adopted, which consists in floating out prepared concrete masses to sea, the mattress being suspended from the under side of a flat pontoon, and then lowered, by methods described in the paper, to the sea-bed.

The paper then gave a brief account of the principal works of reclamation in Holland, including the West Kapelle dam, Osse breakwater, the Langendijk, the Hondsbosse dam, the Petten dam, and the Prinz Hendrik dam, at Texel. The greatest project of all, however, is that for the reclamation of the Zuyder-Zee, and the author described briefly financial and economic considerations pertaining thereto, and the schemes put forward by Van Diggeen, in 1849, and Colonel Biejerinck, in 1865, and the findings of the Dutch Royal Commission of 1892.

The controversy proceeding in Holland as to the best procedure in carrying out the project, which involves the reclamation of 1,500,000 acres, was referred to. Briefly, the alternative schemes are:—(1) To close the inland sea by a reclamation dam running from Wieringen to the coast of Friesland, near Piaam, thus shutting out the North Sea from the area to the south, the reclamation works being effected at leisure in the lake which would then be formed behind the dam. (2) To carry out the series of smaller reclamations before the closing of the entire sea.

In connection with the reclamation-dam, a suggestion as to the use of armoured concrete put forward by Mr. L. A. Sanders, of Amsterdam, was mentioned.

NEW BUSINESS PREMISES, LEICESTER.

New premises for Messrs. Morgan, Squire and Co., Ltd., have been recently erected in Hotel Street and Millstone Lane, Leicester, at a cost of about £14,000. The building is generally of steel framed construction with Portland stone elevations above the shop fronts. Messrs. Everard, Son, and Pick, of Leicester, are the architects, and the following firms carried out the various works named in the erection of the building:—General contractors, A. and W. Chambers; stonemasons, W. Thrall and Son; slaters, Ellis, Partridge and Company, Ltd.; plasterers, Rimmington Brothers; founders and structural steelwork engineers, Gimson and Company, Ltd.; plumber, Wm. Freer; painter, J. Norton; heating, Ashwell and Nesbit, Ltd.; electric lighting, J. E. Lester; lifts, R. Waygood and Co., Ltd., London, S.E.; shop front and window fittings, Saml. Haskins and Bros., London, E.C.; shop fittings, W. Matthews; glazed wall tiling, Pilkington's Tile and Pottery Co., Ltd., near Manchester; terrazzo paving, the Empire Stone Co., Ltd., London, W.C.; electric light fittings and wrought-iron casements, Collins and Co.; composition flooring, British Doloment Co., Ltd., London, S.W.; ironmongery, G. T. Coleman; pneumatic tube apparatus, Lamson Pneumatic Tube Co., Ltd., London, E.C.; telephones, Gent and Co., Ltd. The firms are of Leicester where not otherwise specified.

WALL GARDENS AND GARDEN WALLS.

The architect of to-day is expected to know so much about the arrangement and adornment of gardens, that a gardening article with which walls are intimately associated should make a strong appeal to those members of the profession who are keeping abreast of the movement. Such an article appeared, at considerable length, in a recent issue of the "Times," and contained, besides the observations summarised in the following extract, a great deal of useful guidance as to the varieties of plants that may be most conveniently applied to the adornment of such walls as are here described; but that is a matter which is somewhat beyond our province.

Walls are usually built to be screens and barriers, not to be flower beds; so plants growing upon them seem to be in the wrong place, to have come there by chance, and to be signs of neglect like plants in a garden path. There are some gardeners who take a pride in growing plants in the most unexpected places; and often the result of their ingenuity is that all their plants look like weeds. It is the same error as that which produced carpet-bedding; for a hollyhock in a wall is as much out of place as houseleeks and stonecrops arranged in patterns in a bed. When once you have recovered from your wonder at the sight of a hollyhock growing in a wall, you would much rather see it decently displaying its charms in a border.

But there are walls and walls; and some, remarks the "Times'" expert, are much better suited to gardening than others, though none perhaps are suited to the cultivation of hollyhocks. The wall which is built for a screen or a barrier and made of stone and mortar may be covered with creepers or shrubs rooted in the ground below it. But it is evidently not designed for plants to root in places where the mortar ought to be; and, if it is covered with such plants, it looks as if it were half-way to a ruin. That may be merely owing to the force of association; but association is an important element in all beauty, and flowers are grown for their beauty. It is melancholy and uncomfortable to associate gardens with ruin and decay.

But where a garden is on a slope there may be another kind of wall, built, not for a boundary or a screen, but so that the slope of the garden may be divided up into levels and steep banks. Such walls will, of course, have earth behind them, and their object is to contain that earth and at the same time to provide a more interesting substitute for the usual steep bank of grass or clipped laurels or other dull shrubs. They are, in fact, something between an ordinary wall and a rockery, with a regular arrangement of stone, but without mortar. If they are properly built they are well suited for the growth of many plants; and plants growing upon them do not look like weeds if they are well arranged, since there is a mass of earth behind them in which we should naturally expect plants to grow, and since there is no mortar to be disturbed by their growth. Such walls, if they are of any height, should have a slight slope, so that the earth between them may not wash away, and so that the plants in the lower courses may not be too much over-shadowed by those above them. There is no need for a slope where the wall is only a few feet high, as in that case it can be planted in the higher courses with trailing plants that will soon cover its whole surface. Straight low walls of this kind make an excellent boundary to a sunk garden, serving at the same time as a shelter for the plants on the ground and as a home for many plants that will not thrive so well on the level.

Whether the wall is straight or sloping, the stones should be regular in shape, if rough hewn, and should be built close together. However thin, their exposed surface should be flat, so that no projection may make a drip on the plants below them. In some cases plants already well grown may have to be planted among the stones, and this should be done, if possible, in the course of building; otherwise their roots cannot be properly spread out and they will probably die. But, whenever possible, it is best to sow seed or to plant very small seedlings in the wall, so that the plants may be acclimatized to their peculiar conditions from the first. There is many a plant that will thrive in a wall if it has never known anything else, but will die if it is transplanted from a border in which it has already made large roots. In any case it is most important to arrange the plants on some system. Indiscriminate planting in a wall looks worse even than indiscriminate planting in a border, for it suggests mere weediness at once. The plants should be arranged in masses, more long than broad, and interweaving with each other at their extremities; and there should not be too great a variety of them. Half a dozen different species well arranged and contracted look far better on a long wall than fifty. Care should also be taken to plant projecting plants only near the base of the wall; otherwise they will overshadow and perhaps kill any plants below them; and, in any case, no plants should be used which project so much that they look insecure or get in the way of any one who walks along the base of the wall. Indeed, some experience is necessary for the choice of plants that will both look well and thrive well in a wall; and the gardener should not begin with rash experiments.

OUR PLATES.

S. Andrew, Coulsdon.

The site for this Church slopes very considerably from north to south, and slightly from west to east. Advantage has been taken of the contour of the ground to plan the tower towards the lowest part, and on a lower level will be provided the choir vestry, lavatory accommodation, and the heating chamber.

On the main floor level the church will consist of a chancel, chapel, nave, aisles, transepts, priests' vestry, with sacristy and a return way or ambulatory between the vestry and chancel. The organ will be in the tower over the priests' vestry and return way.

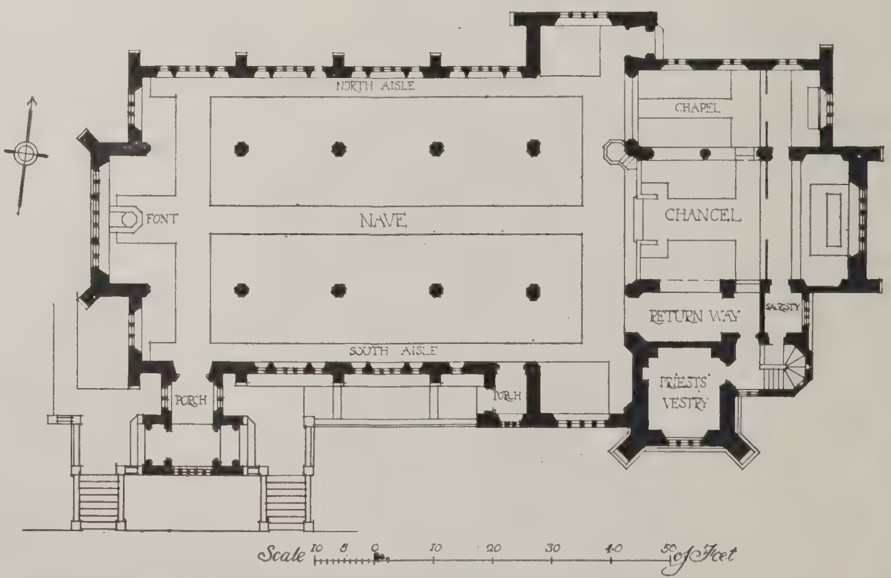
The accommodation, including choir, will be for 660.

The materials intended to be used externally are dark brown bricks with Monk's Park stone dressings, and the roofs are to be covered with red handmade tiles. Internally the piers and arches will be of Corngrit or Corsham stone, the walls generally being plastered. The architects are Messrs. E. H. Greenaway and J. E. Newberry, of 21, Queen Anne's Gate, Westminster.

The drawings from which the illustration is taken was exhibited in this year's Royal Academy Exhibition.

Chapel at Glastonbury.

Our plate of the chapel at Glastonbury (architect, Mr. W. D. Caröe, F.R.I.B.A.) is reproduced from a drawing which was exhibited at the Royal Academy.



CHURCH OF ST. ANDREW, COULSDON. F. H. GREENAWAY AND J. E. NEWBERRY, ARCHITECTS.

(See Centre Plate.)

MAGAZINES AND REVIEWS.

The only paper in the "Art Journal" that is of much interest in the continuation of Sir F. T. Piggott's notes on "A Japanese Drawing Lesson." The information as to the methods of manipulating the brush which is the Japanese artist's favourite implement, are really instructive, and may give valuable suggestions to teachers in art schools. The number contains two fine illustrations, a coloured print from a picture of Constable's, and a print of a capital etching of some old riverside houses at Limehouse, by Miss Mabel F. Robinson.

The "Burlington Magazine" has a leading article on the subject of "National Memorials and King Edward VII." The pessimistic view taken as to existing memorials is rather exaggerated; the Albert Memorial is by no means a failure, except in respect of the actual portrait statue; it is the fashion to sneer at it now, but there is a great deal of merit, both in the architectural design and in the sculptural decoration. The "Burlington," while admitting that the average man requires a portrait statue as one element at least in a memorial, urges that this (with its pedestal we presume) should be the subject of a competition "throughout the Empire, to ascertain the trend of the artist mind in coping with such a subject when set before them." We can hardly think that any purpose would be served by extending the competition beyond Great Britain. If this country cannot furnish sculpture equal to the occasion, it is quite certain the Colonies cannot. The only good result from an Empire competition might be to stimulate the study of art, and the ambition to excel in the Colonies. But we agree in thinking that a competition would be preferable to the selection of a single eminent sculptor without competition. In regard to anything beyond a sculptural memorial, the "Burlington" favours the establishment of a museum of the arts of the Oriental countries under our rule. We do not see that this, though an excellent thing in itself, has any special reference to King Edward VII., and we repeat once more our opinion that the best and most suitable memorial would be a new façade to Buckingham Palace.

The "English Review" contains a nice and thoughtful article by Mr. Francis Grierson on "Art, Science and Beauty," which contains more of original thought and suggestion than is usually to be found in articles of this type. The author is thoroughly in earnest, and some of his remarks form a wholesome criticism on the present rage for the eccentric and the ugly in art. "The art of an age is the highest achievement of its civilisation. . . When the sense of beauty begins to wane, people indulge in the humorous and the satirical; the sensational and the trivial, then take the place of dignity and harmony. And the time comes to every nation when art is weakened by becoming popular."

The "Contemporary" concludes this month the reprint of Holman Hunt's most interesting and characteristic article on "The Pre-Raphaelite Brotherhood." Though Hunt certainly over-estimated the importance of some of his own works, the article brings out vividly the extraordinary ignorance, prejudice, and even dishonesty of statement, which men like Hunt and Millais had to contend with at the outset of their career. The difference is that Millais entirely vindicated the position he claimed; Hunt only partially did so. His great pictures are great rather in spite of his style than because of it.

In the "Fortnightly Review" Mr. M. H. Spielmann writes an article on "The Position of Fine Art in the New Copyright Bill." He has a good deal to say on the point of copyright in architecture, on which he looks doubtfully, for reasons which are worth attention, but are not, we think, conclusive. He implies that much of the progress of architecture in ancient and in modern times has depended, and does depend, on repetition—on the influence of a school of detail, etc. So it does, but that can surely be separated from the kind of imitation referred to in the Copyright Bill, which consists in actually reproducing a building. And there is the fact, as Mr. Spielmann admits, that copyright law in architecture has worked in a perfectly satisfactory manner in France. The objections to it in this country seem to be part and parcel of that prejudice against the architect, and indifference to his art, which appears to be a traditional heritage of Englishmen.

OBITUARY.

Mr. Robert Mawson.

Mr. Robert Mawson, well known as the proprietor of the Lakeland Nurseries, and as brother to Mr. Thomas H. Mawson, Hon. F.R.I.B.A., died at the age of 46, at his residence at Windermere, on December 15th, after an illness extending over a year. Mr. Mawson was the second son of the late Mr. John William Mawson, seed merchant and florist, of Ingleton, Yorkshire, whose widow later removed to London, where each of the three brothers received a thorough professional and practical training with some of the then best known nurserymen and landscape gardeners, the eldest brother having for two years previously studied architecture. Returning North twenty-six years ago, they began business at Windermere, and five years later the two young brothers, Isaac and Robert, became sole owners of the nursery business which they had established. With great energy the two young men worked and extended their connection, not only in this country, but on the Continent and in America. The younger brother dying nine years ago, the business came into Mr. R. R. Mawson's hands. The famous Windermere nurseries, always thrown open to the public, and annually visited by thousands of people from all parts of the country, have been largely extended and improved during recent years. Mr. Robert Mawson, who made no profession of any special knowledge as a garden architect, possessed a unique acquaintance not only with the horticultural part of a garden, but with every phase of garden construction. Not only did he carry out much of the work designed by his brother, but he built up an extensive connection amongst architects generally, for whom he carried out numerous important works, including many which have been illustrated in the architectural journals. Some of the best known works are: The gardens at Wych Cross, Forest Row, Sussex, for Mr. Douglas W. Freshfield; Chelwood, for Lady Brassey; Wood, North Tawton, Devon, for the late Mr. W. Lethbridge; Hannaford, Ashburton, South Devon, for Major Bolitho, D.S.O.; Walmer Lodge, Walmer, Kent, for Mr. Albert Ocks; The Hill, Hampstead, for Mr. W. H. Lever; Rushton Hall, Kettering, Northamptonshire, for Mr. J. J. Van Allen; Foot's Cray Place, Sidcup, for Mr. S. J. Waring; Little Onn Hall, Staffordshire, for the Misses Ashton; Dunchurch Lodge, Rugby, for Mr. J. Lancaster; and High Head Castle, near Carlisle, for the late Judge Hills. The business will be continued by the executors under the management of Mr. Mawson's two nephews, who have been closely associated with him for many years past.

Mr. William Ridley.

Mr. William Ridley, who was well known as a contractor in Consett district, died on December 6th, at North View, Wallsend. The deceased, who was 48 years of age, was the builder and proprietor of the Olympia Skating Rink, Wallsend, which was opened a few weeks ago. Mr. William Ridley was a son of the late Mr. J. Ridley, a builder well known in Tow Law; but for many years he had resided at Consett, and engaged in building operations.

Mr. Edwin Turner.

The death occurred, of December 9th, of Mr. Edwin Turner, architect, of Llandudno, after an illness of some months' duration. Mr. Turner, who was seventy years of age, was well known in North Wales, having been in practice at Llandudno for nearly forty years. He went to that town from the East Coast upwards of forty years ago as an assistant to Mr. George Felton, then the agent to the Mostyn estate, and the successor to Mr. John Williams, Bodafon. Some time later Mr. Turner commenced to practise on his own account, and was the architect of many large buildings in Llandudno, including the St. George's Hotel and the Craigside Hydro. He built the tower of Trinity Church and the Church House, and restored St. Tudno's Church on the Great Orme. He did a great deal of domestic architecture. He was the master of the St. Tudno Lodge of Freemasons in 1888, and subsequently attained to provincial rank. For many years he was the treasurer of the St. Tudno Lodge.

London History and Topography.

At the meeting of the London County Council on December 20, it was stated that a letter had been received from Mrs. Harben, of St. James's Court, Buckingham Gate, on behalf of herself and her co-executors, making known the terms of a bequest devised to the London County Council under the will of her late husband, Mr. Henry Andrade Harben, who was himself for some years a member of the Council. He bequeathed to the Council all his books, manuscripts, prints, drawings, maps, and plans relating to the history and topography of London and its environs, including the county of Middlesex. Mrs. Harben wrote that she knew well how profound was the interest her late husband took in the work of the Council. It was his appreciation of its work, and his desire to promote its dignity, that prompted him among other reasons to make this bequest. Sir George Goldie moved that Mr. Harben's generous bequest be gratefully accepted, and that thanks be accorded to Mrs. Harben for her letter communicating its terms. The motion, seconded by Sir J. W. Benn, was unanimously adopted, the letter being referred to the Local Government Records and Museums Committee for consideration and report.

THE ARCHITECTURAL DRAWINGS OF THORPE AND SMITHSON.

BY J. ALFRED GOTCH, F.S.A., F.R.I.B.A.

In the sixth of his series of lectures on "English Vernacular Domestic Work," Mr. Gotch showed and described a number of contemporary drawings of Elizabethan and Jacobean drawings, mainly from the two great collections, the Soane and the Coke.

IN all houses which have been continuously occupied, a certain amount of change is sure to have taken place. If, therefore, we wish to know how an Elizabethan house appeared to its builder; to know what he had in his mind as he developed his ideas; to ascertain just what accommodation was provided, and how it was arranged, we cannot do better than examine some of the drawings made by designers of that time.

"Surveyors" Designs.

Fortunately for our purpose, there have been preserved two important collections of drawings made by surveyors—or, as we should now call them, architects—of the time of Elizabeth and James. In addition to these there are, scattered up and down the country, preserved in great houses or the archives of colleges, a number of isolated drawings of that period, which are valuable enough, but they cannot vie with these two collections. Of these two, one is preserved in the Soane Museum in Lincoln's Inn Fields, and may be seen by anyone who applies on one of the days when the museum is open. The other collection is in private hands—those of Col. Coke, of Brookhill Hall, near Alfreton. The Soane collection is largely the work of John Thorpe, who flourished in the time of Elizabeth. The Coke collection is attributable to John Smithson, who was working through the whole of the reign of James I. The two men probably overlapped a few years, and were designing simultaneously; but, speaking broadly, Thorpe is an Elizabethan, and Smithson a Jacobean. The Thorpe drawings have long been well known, but the Smithson drawings were rediscovered only about three years ago. Huntingdon Smithson was living at Bolsover in 1601, and was the architect of Bolsover Castle. He died in 1648, and was buried in the chancel of Bolsover Church.

Smithson's Drawings.

In examining the Smithson drawings, some doubt arises as to their authorship. Mr. Gotch thinks that some at least may have been the work of John Smithson, father of Huntingdon, the Smithsons having been a family of architects living and working in the neighbourhood of Nottingham.

The drawings themselves are of varying degrees of excellence, some being carefully executed, as though for publication, others roughly done, as though for practical use. They comprise plans of houses, and a few elevations; plans and elevations of stables; surveys of houses and of gardens; details of doorways, windows, screens, chimney-pieces, and monuments, as well as drawings of panellings and fittings, and of a few implements. It is clear that they were valued by some successor of Smithson, who must have collected and preserved them. To some he wrote titles, such as "A Screen by Smithson"; and it is curious to find that the explanatory writing on some of the drawings is in the same handwriting as these titles—almost as though an assistant, after Smithson's death, had collected the drawings of his eminent master, with a view perhaps to publication, certainly to preservation. There are ninety-nine sheets in all, and probably more than twice that number of drawings, since many of the mounts contain two or more. Of the ninety-nine sheets there are some seventeen or eighteen which cannot be attributed to Smithson, leaving about eighty which may fairly be credited to him. The number ran consecutively up to eighty-nine. After that there are gaps, showing that some drawings are missing. Col. Coke informed the author that a number were lent many years ago to Mrs. Chaworth Musters, of Colwick, and unfortunately perished in the fire which destroyed that house.

Thorpe's Collection.

Thorpe's collection was arranged by himself in a bound book. A few are highly finished, the rest are in all stages of development, down to the merest outlines of a plan or elevation. They are nearly all plans and elevations of houses. There are a few full-size details, and some strapwork gables and other details of like nature; but there are no chimney-pieces, windows, screens, or similar features. There are many rough sketches jotted down at the side of the larger ones, alternative treatments of the same subject; and the whole series affords a vivid insight into the working of the designer's mind. A very remarkable and clever designer he was, unsurpassed, the author ventured to say, as a planner of houses. Every fresh examination of his drawings increases one's admiration of his ingenuity, and almost every one of his plans had a touch of the grand manner about it.

The Period Covered.

Seventeen of Smithson's drawings bear dates, which, of course, is a very valuable fact. These range from 1599 to 1632. Nine out of the seventeen are dated 1617, 1618, or 1619, and from this the conclusion may fairly be drawn that this Smithson was in his full career at that time—a time when John Thorpe must have been approaching the close of his long and busy life. A few of Thorpe's drawings are dated, but not many; the earliest is 1570, and the latest 1621. As Thorpe tells us that he laid the first stone of Kirby in the year 1570, the two sets of drawings, his and Smithson's, cover practically the whole of the reigns of Elizabeth and James, and furnish an invaluable series of examples showing the development of domestic architecture during that interesting period.

Development of Planning.

The planning of houses built before the middle of the sixteenth century was, as a rule, somewhat haphazard, subject always to the old-established arrangement which made the hall the chief apartment, and placed it between the family rooms at one end, and the servants' quarters at the other. This, of course, was the root idea that had dominated every plan, large or small. But in large houses, and in houses that had been extended, the additional accommodation had been provided in the manner which seemed at the moment the most convenient, without much thought of what the general effect would be in regard to appearance. There was but little endeavour to arrange the various rooms systematically; far less was there any attempt at symmetry. It is true that in one or two instances, towards the close of the fifteenth century, a manifest striving after symmetrical arrangement is apparent—at Kirby Muxloe, for example, and at Hurstmonceux. But none of the great houses of Henry VIII.'s time, even, were anything more than approximately symmetrical. As the influence of Italian design grew stronger, however, symmetry became more highly prized; and by the end of the third quarter of the sixteenth century it had obtained a complete hold of English designers, and dominated their plans in the most obvious way.

Old Features Retained.

The old jealousy of free approach still lingered on in many cases; courtyards were still retained, formed either within the building itself or by a high surrounding wall. Windows were carefully protected by iron bars. It is difficult to determine how far these arrangements were considered really essential, how far they were mere survivals of ancient ways, and how far they were retained for the sake of architectural effect; for contemporary with the courtyard plan was the isolated block, practically free from defensive outposts, and almost as approachable as a modern villa standing in its own grounds. There is no definite point at which the courtyard type was superseded, as being no longer necessary, by one less enclosed. The type to be adopted became a matter of choice according to individual taste or architectural necessity.

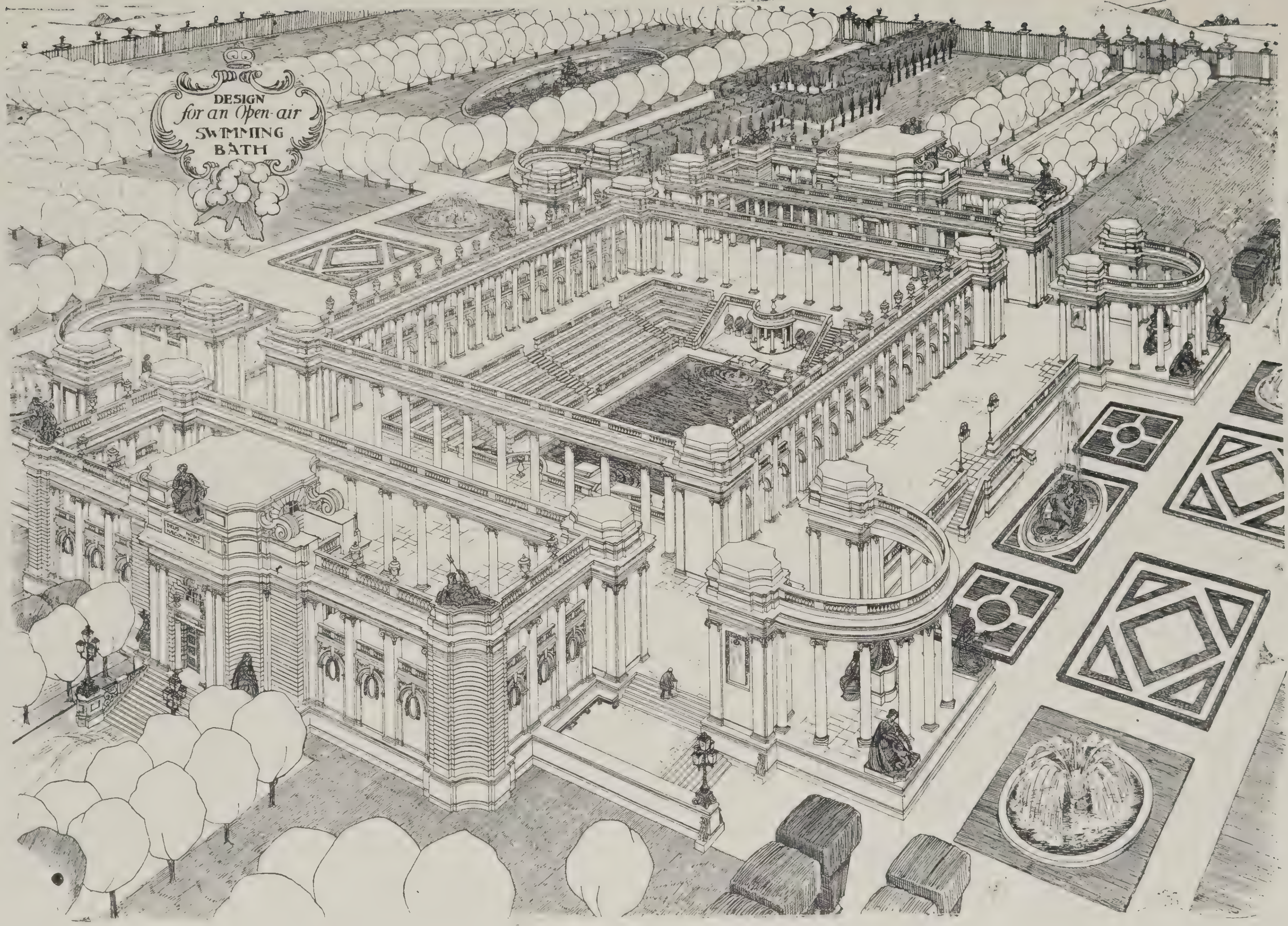
By the time that Thorpe began to design, this change in ideas was virtually established, and accordingly we find that he made use of various types. The courtyard at Kirby in 1570; the open access type at Wollaton in 1580, where there is no court either within or without the house; the H type in other instances. It is interesting, however, to find among Smithson's drawings a plan of Wollaton with a court in front of each face of the house. Robert Smithson may have added these courts.

But whatever type Thorpe adopted, he always treated it symmetrically. If the symmetry did not affect the whole design it affected its component parts, such as the various façades and the courtyard; and we shall find that as the years advanced the symmetry hardened, as it were; so that the later examples are more rigidly dealt with than the earlier. This hardening is apparent not only in the plans, but in the elevations. The fanciful touches which gave so much charm to the earlier buildings were gradually withheld; the treatment became more staid, the detail more ponderous. The change is noticeable in Thorpe's own drawings, and is quite apparent in comparing his with Smithson's.

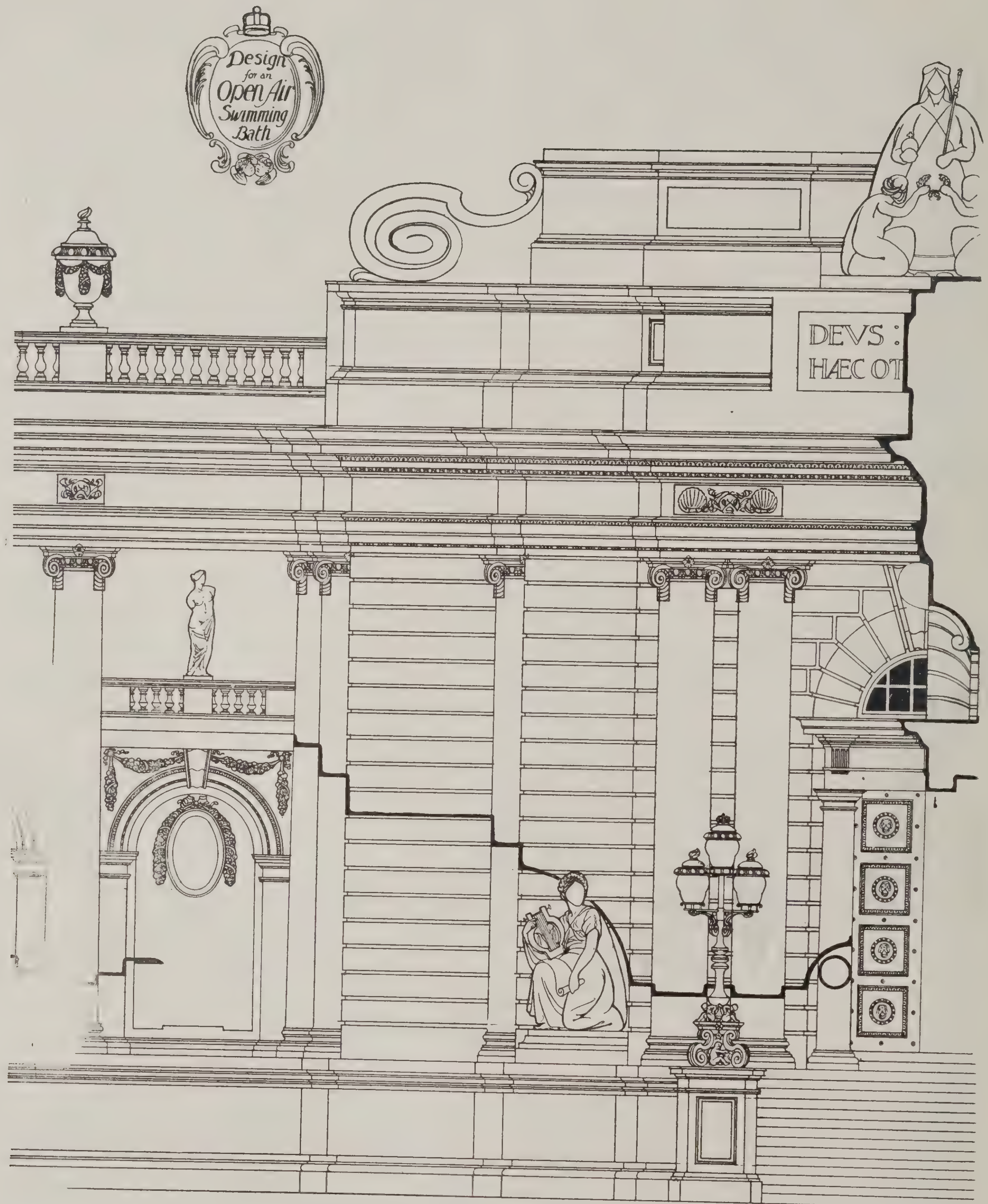
Another Important Change.

Another interesting and very significant change which these drawings illustrate is in the disposition of the hall. Hitherto it had always been the centre or heart of the house. The chief entrance had always led direct into the screens or passage cut off from the lower end of the hall. This passage gave access on one side to the buttery, pantry, and kitchens; on the other side to the hall itself, from the upper end of which the family rooms and the grand staircase were approached. But during the closing years of the sixteenth century and the opening years of the seventeenth, this disposition began to be modified. The hall began to be regarded sometimes as a separate apartment, not necessarily the centre of the house, sometimes as a vestibule leading

(*Continued on page* 677.)



BY MAURICE LYON.

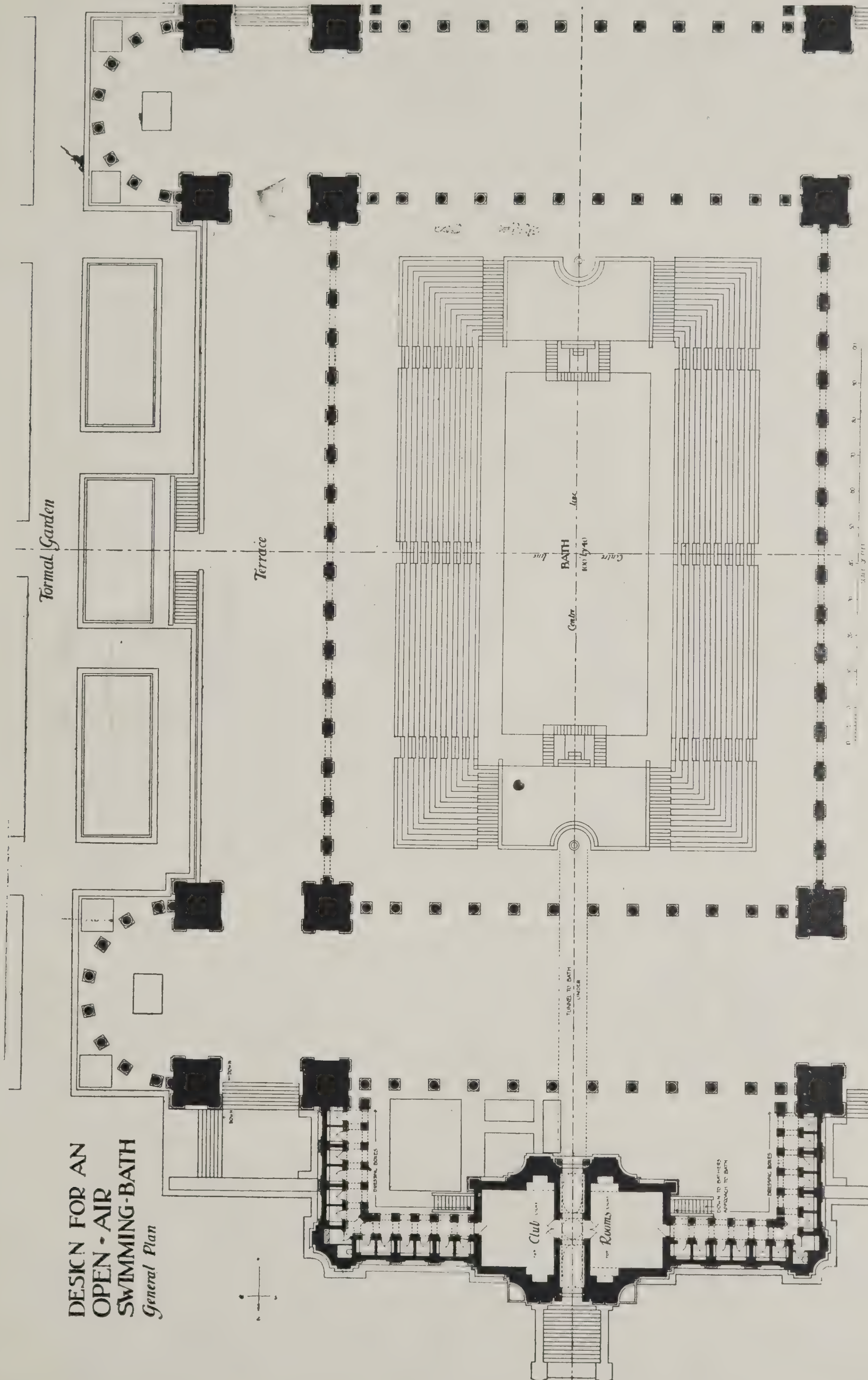


DETAIL OF ENTRANCE FRONT

ſcale of feet

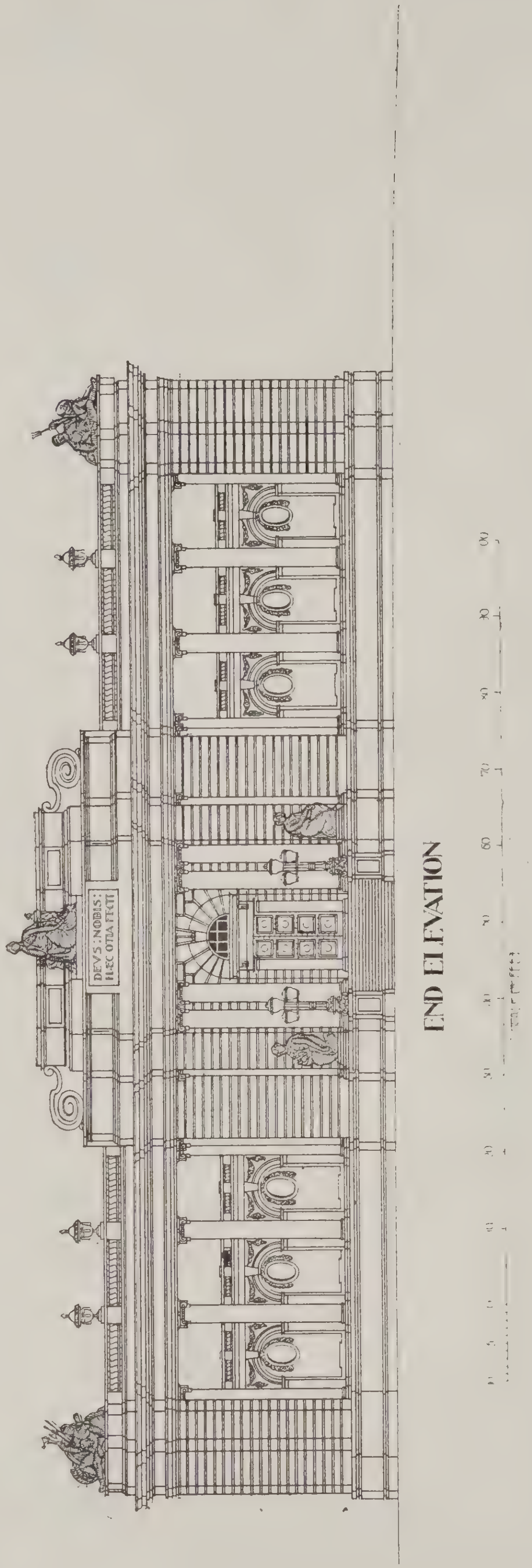
The accompanying drawings show a design for an open-air swimming bath by Mr. Maurice Lyon, submitted in one of the recent Tite competitions of the Royal Institute of British Architects. It is of course on a very grandiose scale, and is hardly likely to be carried out in this country; but it possesses, nevertheless, several features of interest, and shows considerable grasp of architectural design. Mr. Lyon at the time this design was prepared was a Student at the School of Architecture at Liverpool University, which is under the direction of Prof. C. H. Reilly.

BY MAURICE LYON.

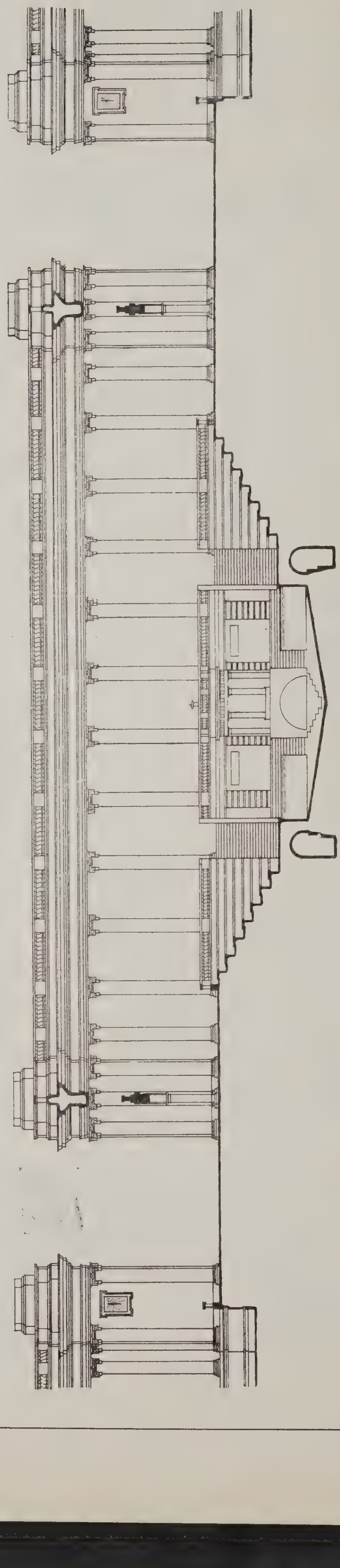


DESIGN FOR AN OPEN-AIR SWIMMING-BATH
General Plan

BY MAURICE LYON,



END ELEVATION



CROSS SECTION

BY MAURICE LYON.

to the living-rooms, and not as itself the chief living-room. The deposition of the hall from its historic pre-eminence as the principal apartment, and the converting of it into a fine vestibule, marks the final severance of the new from the old. With this change mediævalism practically lost its last hold on the English house; henceforward house-planning was to be carried out on new lines. Thorpe and Smithson are the last exponents of the old tradition; the change which their later designs foreshadow was consummated by Inigo Jones and his followers.

Some Notable Examples.

Among the illustrations shown on the screen were the following:—Burghley House, built between 1577 and 1587; Thornton College, on the H plan (about 1603); the "house for Sir Walter Coap at Kensington," now known as Holland House, and said to have been built in 1606; Lord Sheffield's house; Lord Exeter's house at Wimbledon (1588); Worksop Manor, which had about it much of the Italian feeling which Smithson seems to have highly prized; and many other examples from Thorpe and Smithson.

The Dawn of Scientific Planning.

In conclusion, the author said that Smithson, although a very ingenious and inventive man, was not nearly so ingenious in house-planning as Thorpe was. The study of Thorpe's drawings is an intellectual treat. The study of Smithson's is interesting in the highest degree, but the interest is of a different kind—as much archæological as architectural. Both collections are invaluable in their way, and give an illuminating insight into the methods of design at a remarkable period—remarkable not only because of the number and magnificence of the buildings it produced, but also because these buildings combined in themselves the old freedom of fancy with a new and serious effort at scientific planning.

"THE GREATEST ARCHITECTURAL OPPORTUNITY IN THE WORLD."

Rarely has a city of importance the architectural advantage of unity in conception. An instance that comes to the mind of a contributor to the "Illustrated London News" (Mr. A. Hugh Fisher) is that of Jaipur. In 1728, Jai Singh, the chief of a Rajput State, deciding to move his capital, built that great city. To-day, Australia has before it the problem of building upon a tract of open country a city worthy to be the central seat of Government of a country half as large again as the whole of India. On a recent tour in Australia, Mr. Fisher visited the site of what is to be the centre of the new Federal capital, which has been found necessary, owing partly to the rivalry of Sydney and Melbourne. It has now been determined that the seat of Government of the Commonwealth shall be in the district of Yass-Canberra, in the State of New South Wales. Soon after crossing the Cooma Railway line the party entered cleared land, and were within the boundary of the capital site—the nine hundred square miles now reserved as Federal territory. Then Canberra Church spire came into sight, peeping from a clump of eucalyptus. Close there the future Government House may be built. The Survey Camp itself is in a gully a quarter of a mile south-west of Kurragong Hill, three miles south-west of Mount Ainslie, and two miles south-east of the Black Mountain. The office is a wooden hut among the canvas tents, and here Mr. Fisher found two surveyors, Mr. Broniowski and Mr. Martin, at work on a large contour plan. Sixteen square miles here in the middle of the Federal Reserve are being surveyed in contours, and drawn on a scale of four hundred feet to the inch, with a separate contour for every five feet of difference in height. This is the plan, which will be reproduced for extensive circulation, to enable architects to make schemes for the capital city of the future—as interesting an architectural problem as has ever yet been propounded.

The top of a hill six miles away has been chosen for an observatory, but the location of the Government buildings, etc., will depend upon architectural schemes for the new city. It will be easily practicable from the contour-plan for models of the site to be prepared, and the opportunity for architects of combined imaginative and practical ability is, Mr. Fisher declares, the greatest of modern times.

COMPETITIONS

LIST OF COMPETITIONS OPEN.

January 21, 1911. School for Taunton.—The Education Committee of the Borough of Taunton invite architects practising in that borough to submit designs for a provided school for 440 children. No premium is offered, but the author of the selected design may carry out the work at the commission of 5 per cent. Address George H. Kite, Town Clerk, Municipal Buildings, Taunton.

Jan. 31. Glasgow Public Library.—The Corporation invite from architects competitive plans of a branch library proposed to be erected at the corner of Saracen Street and Allander Street, Possilpark. Premiums of £50, £30, and £25 respectively will be awarded to the authors of the designs adjudicated first, second, and third in order of merit. Designs must be lodged on or before Tuesday, January 31. Particulars from A. W. Myles, Town Clerk, City Chambers, Glasgow.

Feb. 1, 1911. Dublin. New Pavilion, Royal Hospital for Incurables at Donnybrook.—Particulars in our issue for October 12.

Feb. 8, 1911. Penrith Secondary School. The Governors of Queen Elizabeth's Grammar School, Penrith, are prepared to receive competitive designs for the erection of a new secondary school, accommodating 200 students, with provision for the conduct of technical and evening classes. The following premiums are offered: 1st, £50; 2nd, £25; 3rd, £10. The designs must be sent in not later than February 8th, 1911, to James Cropper, The Vicarage, Penrith, Clerk to the Governors.

March 1, 1911. Municipal Offices, Coventry.—This competition is open to all architects, and the assessor is Mr E. Guy Dawber. Particulars (on receipt of two guineas) from Geo. Sutton, Town Clerk, 10, Hay Lane, Coventry. See our issue for November 23rd.

March 15, 1911. Theatre at San Salvador.—Particulars in our issue for October 26.

No Date. Tredegar (Mon.). Model Village.—The Directors of the Oakdale Navigation Collieries, Ltd., offer a prize of 100 guineas for the best set of plans for the building of a model village for this colliery. Particulars from Mr. A. S. Tallis, general manager, Oakdale Navigation Collieries, Ltd., Tredegar, Mon.

No Date. Southport Elementary School.—Local architects (including those residing in Birkdale) are invited to compete. Particulars from Mr. J. Ernest Jarratt, Town Clerk, Town Hall, Southport.

No Date. Llandrindod Wells Pavilion.—The Urban District Council of Llandrindod Wells invite competitive plans of a pavilion to be erected in the Recreation Ground; first and second premiums. An assessor will be appointed. Particulars from D. C. Davies, Clerk to the Council, Llandrindod Wells.

No Date. Bradford Royal Infirmary.—The Board of Management of the Bradford Royal Infirmary invite architects to submit competitive plans, with estimates, for the erection of a new infirmary on a site in Duckworth Lane. A block plan of the site, with a schedule of conditions and instructions, may be obtained from the Secretary Superintendent of the Royal Infirmary, Bradford, on receipt of a deposit of three guineas, which will be returned to each competitor submitting a bona-fide design. The Board have appointed Mr. Keith W. Young, F.R.I.B.A., to act as assessor, and they agree to accept his decision in the matter. The deposit amount will be returned to applicants who decide not to compete provided the instructions are returned within a month after the receipt of replies to the competitors' questions.

SIR JOHN SOANE AND HIS MUSEUM.

Coincidently with the publication of Mr. J. Alfred Gotch's lecture on the Thorpe drawings in the Soane Museum comes a new catalogue of that institution. It is the ninth edition, revised and enlarged, and contains forty illustrations and plans. In the introduction, which is signed by the curator, Mr. Walter L. Spiers, Soane's career is usefully summarised. Born at Reading on September 10th, 1753, the son of a builder, John Soane at the age of fifteen entered the office of George Dance the younger, who built the grim old gaol of Newgate which has not long ceased to be. Soane, as a student of the Royal Academy, was, in 1772, at the age of nineteen, awarded the silver medal for a measured drawing of the Banqueting House, Whitehall; and in 1776 he won, for a design for a triumphal bridge, the gold medal and travelling studentship. Thereupon he went to Italy, returning in 1780 to begin a successful practice which lasted until his retirement in 1833.

Soane, it is recalled, held many public appointments, including that of architect to the Bank of England, of which he designed the exterior and many of the public offices. As "Attached Architect" to the Office of Works, he erected many Government Buildings, as well as several churches for the Royal Commissioners. He became an A.R.A. in 1795, R.A. in 1802, and Professor of Architecture to the Royal Academy in 1806. It was the occupation of this post which led him to form his museum. He was knighted in 1831, and died at his house, No. 13, Lincoln's Inn Fields, on January 20, 1837.

It is in this house that Sir John Soane's Museum is contained, and is open to public inspection on about 122 days in the year. In addition to the pictures, sculpture, and other subjects of art, there is a library containing about 8,000 volumes of architectural, antiquarian, and general literature published prior to 1835, besides some thousands of architectural and topographical drawings ranging in date from the sixteenth century to the early years of the nineteenth. Besides the splendid volume attributable to John Thorpe, there is a priceless volume of Wren's designs for Hampton Court Palace and other buildings; and other British architects represented are William Kent, Sir William Chambers, the George Dances, elder and younger, Robert and James Adam, and Soane himself; while there are several volumes or portfolios of Italian drawings. The books on architecture are not very numerous, but include several notable editions. The paintings, furniture, and fictile ware include much that is of great interest, and in particular there are a Hogarth Room (containing the two complete series of "The Rake's Progress" and the "Election") a "Flaxman Recess," and a Model Room. The catalogue includes among its illustrations some excellent reproductions of "The Rake's Progress," and is altogether one of the most interesting examples of its kind.

NATIONAL REGISTRATION OF PLUMBERS.

The importance of the work of the plumber in relation to public health was emphasised by the Lord Mayor at the Guildhall in welcoming a conference called by the General Council of the National Registration of Plumbers. The Lord Mayor this year is the Master of the Plumbers' Company, which inaugurated and supports the registration movement. The efficiency and wholesomeness of sanitary arrangements and the water service were, he said, a vital consideration to people of all classes. In the professions it was not lawful for a man to practise until he had passed an examination and attained to a certain degree of efficiency. Plumbing was a craft which in its importance did not fall behind the professions in importance to the people, and he ventured to think that no amateur or inefficient craftsman should be allowed to meddle with it. In every centre of the United Kingdom plumbers, architects, and public authorities were getting more closely into touch with one another, and with the Company. The movement towards marking the work of registered plumbers was proving of great public advantage. He looked forward to the time when the scheme would be better known in order that the safeguards imposed under the registration movement might be fully secured to the public.

The Lord Mayor, as Master, afterwards entertained the freemen of the Plumbers' Company and other guests to dinner at the Mansion House.

After Sir Thomas Barlow, President of the Royal College of Physicians, had given the toast of "The Lord Mayor and the Corporation," the Chairman proposed "Civic Institutions and their Relation to Commercial and Industrial Training." The Lord Mayor prefaced his speech with the announcement that there was to be a conference at the Guildhall to discuss the question of industrial training. He described the importance of the science of the Plumbers' Company, and traced the history of the body for some 500 years. Coming to present-day conditions, he insisted on the efficiency of workmen. This efficiency spelt preservation from disease. The plumbers' craft was a preventive craft. The Company wanted to be rid of inefficiency; it wanted the right of registration and licence.

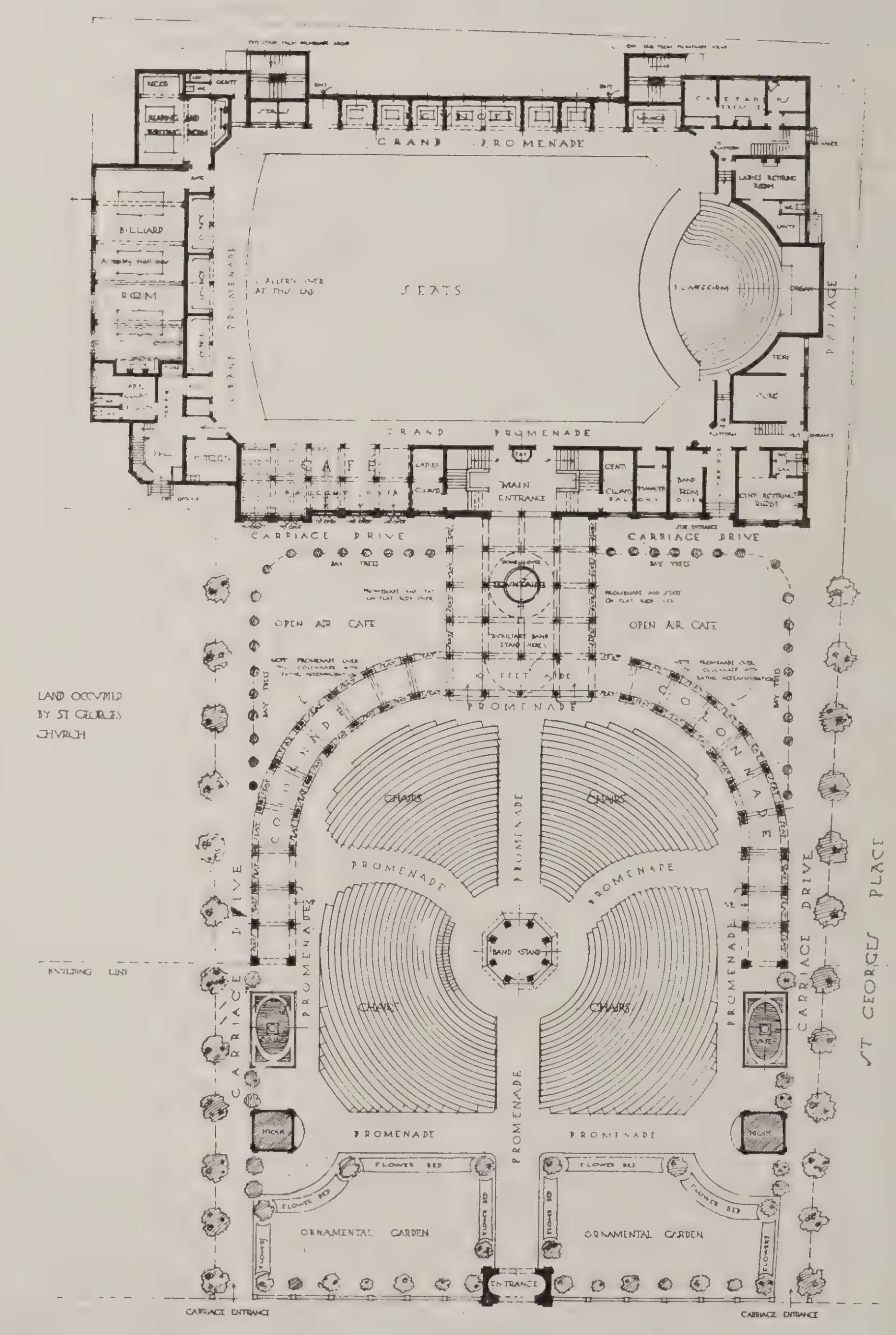
Sir Swire Smith spoke of the necessity for thoroughness of training instead of the smattering of everything that was now given to the youth of the nation.

Mr. Appleton, the Secretary of the Federation of Trade Unions, referred to the wastefulness of the modern system of education. The children of this country should be given a high system of education; a third of the money spent by the nation on elementary education was wasted. The Trade Unions resented this waste of public money, and of the youthful intelligence of the country on this mere payment for cramming. The country must be thorough in its methods, and there must be a return to the old apprenticeship days.

Sir Robert Morant also addressed the company.

PLAN FOR A MUNICIPAL CONCERT HALL.

The main feature of the scheme of the proposed municipal concert hall for Southport is to provide an enclosure fronting Lord Street, for the accommodation of the band and its audience, and to provide also a covered promenade, architectural in treatment, accommodating 800 people. The colonnade is designed in the Tuscan manner, to be executed in Portland stone. As will be seen from the accompanying plan, it is of crescent shape, and has in its centre a sheltered bandstand, while there is an "open-air" bandstand in the centre of the gardens. On the roof of the colonnade, and entered from the main staircase, or from the balcony of the large hall, is a balustraded terrace, which could be used as an open-air café and promenade. The main entrance to the concert pavilion is through a large sculptured hall, and a carriage drive is provided to the front entrance. The hall will seat 3,000 people, and contains a large stage. Lounges are arranged all round the room, and the terrace can be approached from the main balcony. The total cost is estimated at about £20,000. The architect is Mr. George E. Tonge, 137, Lord Street, Southport.



PLAN FOR A MUNICIPAL CONCERT HALL. GEORGE E. TONGE, ARCHITECT.

THE WEEK'S NEWS IN BRIEF.

Whitley Bay Pleasure Buildings.

In the account of these buildings, on page 638 of the Journal for December 21, it should have been stated that the whole of the terrazo flooring and steps—some 900 yds.—have been supplied by Messrs. Emley and Sons, Ltd., Newcastle-on-Tyne, who also supplied the wrought-iron entrance gates.

* * *

Cottage Accommodation in Rural Districts.

A discussion on cottage accommodation in rural districts took place at a meeting of the Warwick Rural Council, when Mr. Broughton Dugdale (vice - chairman) moved, "That it is expedient, in the cause of public health and morality, that the majority of new dwelling-houses to be built in the district should contain not fewer than three bedrooms, and that a by-law be made that any person who shall erect a dwelling-house, unless the Council in its discretion otherwise decide, shall provide not fewer than three bedrooms in every such dwelling-house." He contended that for reasons of health and decency there should be more houses in the rural districts with three bedrooms. He was well within the mark in saying that it was desirable that five out of every six cottages should have three bedrooms, and that twelve out of thirteen should have more than one bedroom. Lord Algernon Percy (chairman) pointed out that there were many people, such as old couples, widows, and young married folks for whom a house with two bedrooms would be sufficient. For houses with three bedrooms such people would be called upon to pay higher rents than they could afford. The Clerk doubted whether the Local Government Board would sanction such a by-law. The resolution was defeated by eight votes to seven.

* * *

Salford New Council School.

With reference to the notice on p. xvi. of the Journal of December 21 respecting the contract for Salford new Council School, Robert Hall Street, for the Salford Corporation, we are requested to state that the quantity surveyor was Mr. Frank Hewitt, M.Q.S.A., of Manchester, who was appointed by the Corporation.

* * *

Southwark Cathedral.

In order to improve the entrance to St. Saviour's Cathedral from London Bridge Approach, it is proposed to construct an arch and a flight of steps from London Bridge over a footway into the cathedral grounds. The Works Committee of the Southwark Borough Council report that the adoption of the scheme would effect a desired improvement in the approach to the cathedral, and would improve the road around the cathedral. The committee, however, regret they are unable to see their way to make any contribution towards the cost of carrying out the improvement.

* * *

Excavations in Italy.

The Italian Minister of Education, Professor Eredaro, has announced an interesting and important programme of excavations. He considers the most urgent work to be the thorough excavation of the Ara Pacis, the completion of Professor Vaglieri's excellent researches at Ostia; the extraction of the Roman galleys from the Lake of Nemi; and the systematic exploration of the Palatine, for which a foreigner has offered £6,000, which the Italian Government has accepted. The Minister promises to proceed at once to the restoration of the great Apulian fortress of Castel del Monte, and of the Cathedrals of Pienza, Spoleto, and Ancona, as well as to the purchase of the Castle of Lodovico il Moro at Ferrara.

* * *

The National Art Competition.

The Board of Education have issued an illustrated book respecting the national competition of 1910. It contains a list of students rewarded, with the report of the examiners on the selected works of schools recognised under the regulations for technical schools, schools of art, and other forms of provision of further education in England and Wales. The number of works sent up for competition was 11,715 from 241 schools of art and branch schools of art, 639 from 32 evening science classes, 758 from 95 evening and day art classes, and 74 from two technical institutions. Fourteen gold medals, 94 silver medals, 206 bronze medals, 497 prizes of books, and 1,063 commendations were awarded.

* * *

Change of Address.

Mr. Edmund A. Fermaud, architect, intimates that after December 19th, his address will be 17, Dartmouth Park Road, Highgate Road, N.W.

* * *

New Middle Schools at Tiverton.

New middle schools at Tiverton, which have just been opened, have cost approximately £11,000. The new building comprises separate schools for girls and boys, and has been planned to accommodate 105 girls and 106 boys in class rooms on two floors. This is exclusive of the assembly hall and joint block of rooms for science work, etc. There are also facilities for future extensions at little cost to accommodate an additional twenty girls, and twenty boys. The science section is intended for the joint use of both schools, and is self-contained. It includes a chemical laboratory 35ft. long by 20ft. 6ins. wide, to be known as the "Lazenby Laboratory." There are also in the central block a physical laboratory, 29ft. long by 20ft. 6in. wide; balance room and science store; lecture room, 30ft. long by 19ft. wide. and a library 23ft. 6in. long by 19ft. wide. The total length of the building is about 182 feet, and its greatest width is about 55 feet. At the opening ceremony, the architect (Mr. Ashford), and the builder (Mr. H. W. Pollard) were included in the votes of thanks.

SEWARD v. CARDIFF CORPORATION.

The claim by Mr. Edwin Seward, F.R.I.B.A., for £10,000 for work done in the preparation of plans for a library and national museum has been heard at great length in the Official Referee's Court of the Royal Courts of Justice, before Mr. Muir Mackenzie; Mr. Ernest Pollock, K.C., Mr. Vaughan Williams, and Mr. Herbert appearing for the plaintiff, while the defendants were represented by Mr. B. Francis Williams, K.C., Mr. J. Sankey, K.C., and Mr. St. John Williams. The evidence was very voluminous, and the witnesses included several well-known architects. At the time of going to press with this issue (somewhat earlier than usual) the case had not concluded, and further details are reserved until a complete view is possible.

LONDON MASTER BUILDERS ASSOCIATION.

The monthly meeting of the Council of the London Master Builders' Association was held at Koh-i-Noor House, Kingsway, on December 15th, the president (Mr. L. Horner) in the chair. There was a very large attendance of members.

Ten members of the Council were elected to serve on the Executive Council of the National Federation.

A very satisfactory report was received as to the composition of the new handbook. The book will now be issued to architects, quantity surveyors, and builders, on the 1st of January of each year.

The Finance Committee's report was received and adopted, and Messrs. Minton, Robertson and Co., were re-elected auditors for the current year.

Six firms (four ordinary and two associate) were elected to the membership of the Association.

The notification that alteration of some of the clauses of the Form of Contract was desired by the National Federation, was forwarded to the Institute of Builders; that body, together with the Royal Institute of British Architects, being the authority to decide every question on the Form of Contract.

The furtherance of apprenticeship was again under consideration, and it was decided for the present to leave the matter in the hands of the Committee of the Institute of Builders, which is now sitting. The Association is there well represented.

The Bills affecting the trade to be brought before the next session of Parliament were referred to the Parliamentary Committee.

The subject of revised methods of measurements of slating and tiling was reported upon by the Committee. The Council was reminded that, some eighteen months ago, the Quantity Surveyors' Association, after conference and agreement with the London Association of Slate Merchants and Master Slaters, issued a pamphlet containing the revised methods. The Surveyors' Institution received a deputation from the Council of the London Master Builders' Association on the subject, and, after due consideration with a desire to obtain uniformity of measurement, have agreed to accept the Council's proposals. The Committee has since met the London Association of Slate Merchants and Master Slaters, and agreed with them that the new methods of measurement shall carry allowances set forth below, and that these shall come into operation on January 1st, 1911. The report of the Committee was submitted to the Council of the London Master Builders' Association, and was approved and adopted.

Slating.—Net area, after deducting all openings 4ft. superficial or over. Mansard, vertical, dormer cheeks, small surfaces under 10ft. superficial, circular, conical, octagonal, or turret roofs to be measured separately.

Eaves.—A lineal measurement to be taken to the equivalent of half the length of slate deep. If irregular or cut to follow drips of gutters, an extra measurement of 6in. to be taken. If bedded or pointed, to be charged separately.

Verges.—A lineal measurement equivalent to 6in. wide to be taken at all square verges and secret gutters. If on rake, take an additional 6in. If slate-and-a-half or special wide slates are specifically ordered to be used, add a further 12in.

Top Edge.—A lineal measurement, equivalent to 6in. deep, to be taken on either side of ridges, under sills of dormers, lanterns, skylights, and any openings where top course slates are used.

Square Abutments.—A lineal measurement, equivalent to 6in. wide, to be taken where slating adjoins sides of all chimney stacks, dormers, skylights, and other openings; also at one end of slope where slating finishes between parapet or party walls.

Circular Cutting.—A lineal measurement, equivalent to 12in. wide, to be taken.

Raking Cutting.—A lineal measurement, equivalent to 6 inches wide, to be taken at all rakes.

Valleys.—A lineal measurement, equivalent to 6in. wide, to be taken on both sides of all valleys.

If special wide slates or slate-and-a-half are specifically ordered to be used, take an additional 12in. on both sides.

Hips and Angles.—A lineal measurement, equivalent to 6in. wide, to be taken on both sides of all hips and angles. If special wide slates or slate-and-a-half are specifically ordered to be used, take an additional 12in. on both sides.

Mitre Cutting.—A lineal measurement to be taken for all mitres, in addition to the usual cutting, whether at hips, valleys, or other places where slates are close cut; to include all necessary oil cement.

Ridge and Hip Coverings.—A lineal measurement of all ridges and hips, including setting and pointing in cement.

All splays, cut-ends, mitres, intersections, and stop-ends to be numbered and taken separately.

Tiling.—Net area, after deducting all openings containing a 4ft. superficial or over.

Mansards, vertical, dormer cheeks, small surfaces under 10ft. superficial circular, conical, octagonal or turrent roofs to be measured separately.

Eaves.—A lineal measurement, equivalent to 6in. deep. If irregular or cut to follow drips of gutters, an extra measurement of 6in. to be taken.

If bedded or pointed, to be charged separately.

Verges.—A lineal measurement, equivalent to 6in. wide, to be taken at all square verges and secret gutters. If on rake, take an additional 6in.

Top Edge.—A lineal measurement, equivalent to 6in. deep, to be taken on either side of all ridges, under sills of dormers, lanterns, skylights, and any openings where top courses are used.

Square Abutments.—A lineal measurement, equivalent to 6in. wide, to be taken where tiling adjoins side of all chimney stacks, dormers, skylights, and other openings; also at one end of slope where tiling finishes between parapet or party walls.

Circular Cutting.—A lineal measurement, equivalent to 12in. wide, to be taken.

Raking Cutting.—A lineal measurement, equivalent to 6in. wide, to be taken at all rakes.

Valleys.—A lineal measurement, equivalent to 6in. wide, to be taken on both sides of all valleys, including all necessary tile-and-a-half.

Bedding and pointing to open valleys to be charged separately.

Valley tiles to be measured extra only, over the usual measurements on both sides.

Hips and Angles.—A lineal measurement, equivalent to 6in. wide, to be taken on both sides of all hips and angles to include all necessary tile-and-a-half.

Hip and angle tiles to be measured extra only, over the usual measurement on both sides.

Mitre Cutting.—A lineal measurement to be taken for all mitres, in addition to the usual cuttings, whether at hips, valleys, or other places where tiles are close cut, to include all necessary tile-and-a-half.

Ridge and Hip Coverings.—A lineal measurement of all ridges and hips, including setting and pointing in cement.

All splays, cut ends, mitres, intersections, and stop ends to be numbered and taken separately.

Many matters of interest were brought to notice and fully discussed.—THOS. COSTIGAN, Secretary.

FEDERATION NEWS.

Yorkshire Federation.

The annual general meeting was held at the Federation offices, West Bar Chambers, 38, Boar Lane, Leeds, on December 15th, 1910. Councillor W. G. England, J.P. (president) occupied the chair, and was supported by 46 delegates from affiliated associations.

The annual report and balance sheet of the Executive Council for the year ended November 30th, 1910, was approved and adopted, and 1,500 copies were ordered to be printed for circulation among the members; the final printing to be left over to January until the new representatives are appointed.

On the motion of Mr. A. J. Forsdike, seconded by Coun. J. W. Mallinson, the best thanks of the Federation were tendered to Mr. W. T. Ledgard for his painstaking and energetic services as honorary treasurer during the past year.

The retiring president moved the election of Mr. A. J. Forsdike, of Sheffield, as president for the ensuing year. Mr. Forsdike, he said, had worked assiduously for many years to strengthen the Sheffield Association, and during the lengthy period he had held office in connection with the Federation, the members were indebted to him for conspicuous services, regular attendance, and active support. He also had the virtue of being very approachable, and his sound advice and great experience, combined with his kindly manner, had been of inestimable service to many members when seeking counsel and assistance. He felt sure that Mr. Forsdike would thoroughly maintain the best traditions of the office, and make a model president.

Mr. W. Longden, the president of the Sheffield Association, seconded the motion, thoroughly endorsing all that the president had said about Mr. Forsdike.

The motion was carried with acclamation, and the retiring president, Councillor England, invested Mr. Forsdike with the insignia of office, and congratulated him upon his appointment.

Mr. Forsdike thereupon took the chair, and expressed his sincere thanks to the Federation for placing him in such an honoured position. He stated that for more than eleven years he had taken a lively interest in the Federation, and he desired publicly to acknowledge the devotion and self-denying efforts of the past presidents. Each year the responsibilities of the Federation were increasing, and he left sure that the members would give him the same generous assistance and devoted co-operation which had been the mainstay of the Federation in the past. No president had it in his own power to make the Federation a success, and he therefore craved for the sympathy of all the members, and asked for their hearty and loyal support. Although great good had been accomplished in the past, there was much more still to be done. He made an earnest appeal to the younger members to interest themselves in the work of the Federation, to cultivate a spirit of charity and broad-mindedness, and to inspire themselves with a real knowledge of the tremendous issues which they had at stake. It would be his earnest desire to enhance the prestige of the Federation, and it would give him the greatest possible pleasure to do anything that would further the interests of the members.

Mr. Forsdike moved that the best thanks of the Federation are due and hereby tendered to Coun. W. G. England, J.P., for his most valuable services as chairman of the Executive Council during the past year, and the addition of his name to the list of ex-officio members of the Council. Mr Forsdike said that Councillor England had set an example that it would be most difficult to follow. He had rendered most painstaking and valuable services, and had ungrudgingly devoted both time and money to the work of the Federation.

Mr. J. Townsley, in seconding the motion, referred to the successful and conspicuous way in which Coun. England had carried out his duties as president. He also referred to the vast amount of unseen work of an executive character which Councillor England had faithfully and excellently rendered, which had been of immense benefit and importance to the Federation.

Mr. Lindley, of Barnsley, expressed the great satisfaction which the Barnsley Federation had felt when one of their members had been appointed to the distinguished position as president of the Yorkshire Federation, and their great pleasure and satisfaction at the eminent manner in which Coun. England had fulfilled their most sanguine expectations during his year of office.

The motion was carried with great cordiality, and Coun. England thanked the members for the hearty manner in which it had been passed. He cordially acknowledged the spirit of camaraderie which existed among the members. He looked upon the Federation as having a three-fold object—combination among themselves, protection against outsiders, and conciliation in its highest and noblest form.

Mr. J. Townsley, of Hull, was appointed Senior Vice-president, and Coun. J. W. Mallinson, of Huddersfield, Junior Vice-President.

The best thanks of the Federation were tendered to the promoters of the Sheffield Building Trades Exhibition and the Sheffield Master Builders' Association, for the contribution forwarded to the Federation funds. It is gratifying to hear that the exhibition was both a trade and financial success.

It was resolved to forward a letter of warm sympathy to Mr. W. H. Dews, the president of the Leeds Association, together with an expression of earnest hope that he will speedily be restored to his usual health and vigour.

Mr. W. T. Ledgard, of Leeds, was re-appointed treasurer of the Federation for the ensuing year.

It was reported that no further nominations for appointment of committees and representatives had been received. It was thereupon resolved that the recommendations of the Executive Council for appointment of committees and representatives for the ensuing year be approved as follows:—National Administrative Committee, the President; Finance and Emergency Committee, the President and two Vice-presidents, the Treasurer, Coun. W. G. England, J.P., Messrs. A. Moulson, W. E. Biscomb, and P. Rhodes; National Federation and Northern Centre: The President, Messrs. J. Townsley, W. T. Ledgard, and A. W. Sinclair, and Coun. W. G. England, J.P.; National Conciliation Board: The President, Messrs. A. W. Sinclair, and P. Rhodes; Northern Centre Conciliation Board: The President, Coun. W. G. England, J.P., and Messrs. W. R. Thompson and R. Finch.

Mr. Sinclair emphasised the exceptional advantages of the Federation Insurance Scheme, and urged that it would receive extended support in order that the Federation might derive still further financial benefits. He referred to the unrestricted cover of the policy and its complete indemnity, and he made an earnest appeal to members to give the scheme a trial, as, by so doing, they were not only helping themselves, but were at the same time strengthening the finances of the Federation.

It was reported that correspondence had taken place with the West Riding County Council with respect to revision of the condition of contract, and an assurance had been obtained that the matter would receive the earliest possible attention.

Mr. Lindley called attention to the undue delay that was taking place in the issue of final certificates by the West Riding County Council.

Further correspondence with H.M. Office of Works as to enquiries by Clerks of Works was read and considered satisfactory.

The case of a Harrogate member who had been subjected to a penalty of £70 arising out of alleged delay in completion of contract was carefully considered, and the member in question had been given certain advice by the Emergency Committee.

The judgment in the case of Boyd and Forrest v. The Glasgow and South-Western Railway Company, is of the greatest importance to contractors, both from the magnitude of the amount in question, and the principles involved. The material to be excavated was found to be hard after it was represented to be soft. This was not denied, but the railway company pleaded that the claim was barred by a clause excluding any demand based on inaccuracies in the schedules. It was held that the misrepresentation was material to the contract, which was thereby vitiated, and that it mattered not that there was no intention to cheat or injure the plaintiffs. A balance of £106,688 on a lump sum contract of £243,000 was allowed with costs.

Attention was drawn to the fact that the General Federation of Trade Unions has drafted a model fair wages clause to be inserted in contracts advertised by public authorities, religious or philanthropic associations, and private persons. The principal section provides for wages and hours in accordance with agreements between employers' associations and trade unions in the district. In the absence of such agreement, then the standard rate of wages fixed by the trade union is to rule. It was resolved to refer the matter to the local associations, with a request that it be given careful attention, with a view to prompt and energetic steps being taken in the event of the subject being raised.

Coun. W. G. England, J.P., reported that a meeting of the National Administrative Committee had been held in London on December 13th, when the following, among other business, was transacted:—Electrical wiring and fitting: The resolution of the Yorkshire Federation had been referred to the Employers' Parliamentary Council. Unemployment insurance: The National Federation is in communication with the Home Secretary, and the President hoped to be favoured with an interview at an early date.

The monthly report of the Lancashire, Cheshire, and North Wales Federation was presented.

It was reported that Mr. Henry Pye, of 61, Rook Street, Barnoldswick, had been appointed as secretary of the Barnoldswick Association, in place of Mr. J. C. Addyman (resigned).

Mr. Longden, on behalf of the President, invited the Federation to hold the next meeting on Sheffield, and it was resolved that the invitation be accepted, and that the meeting be hold on Thursday, February 16th, 1911.—J. DAVIDSON, Secretary.

THE ARCHITECTS' &
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WEDNESDAY,
DECEMBER 31st, 1910.

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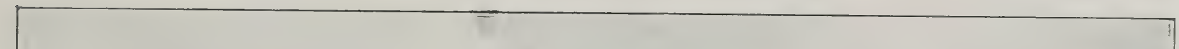

The Churchill Cottage Homes provide twelve comfortable houses for the deserving poor, and are planned around a square having a working garden on one side, the entrance to which is by the gate shown in the above view.

TERRACE STEPS AND GATE, CHURCHILL COTTAGE HOMES, CHEDDAR VALLEY, SOMERSET.
SILCOCK AND REAY, FF.R.I.B.A., ARCHITECTS.

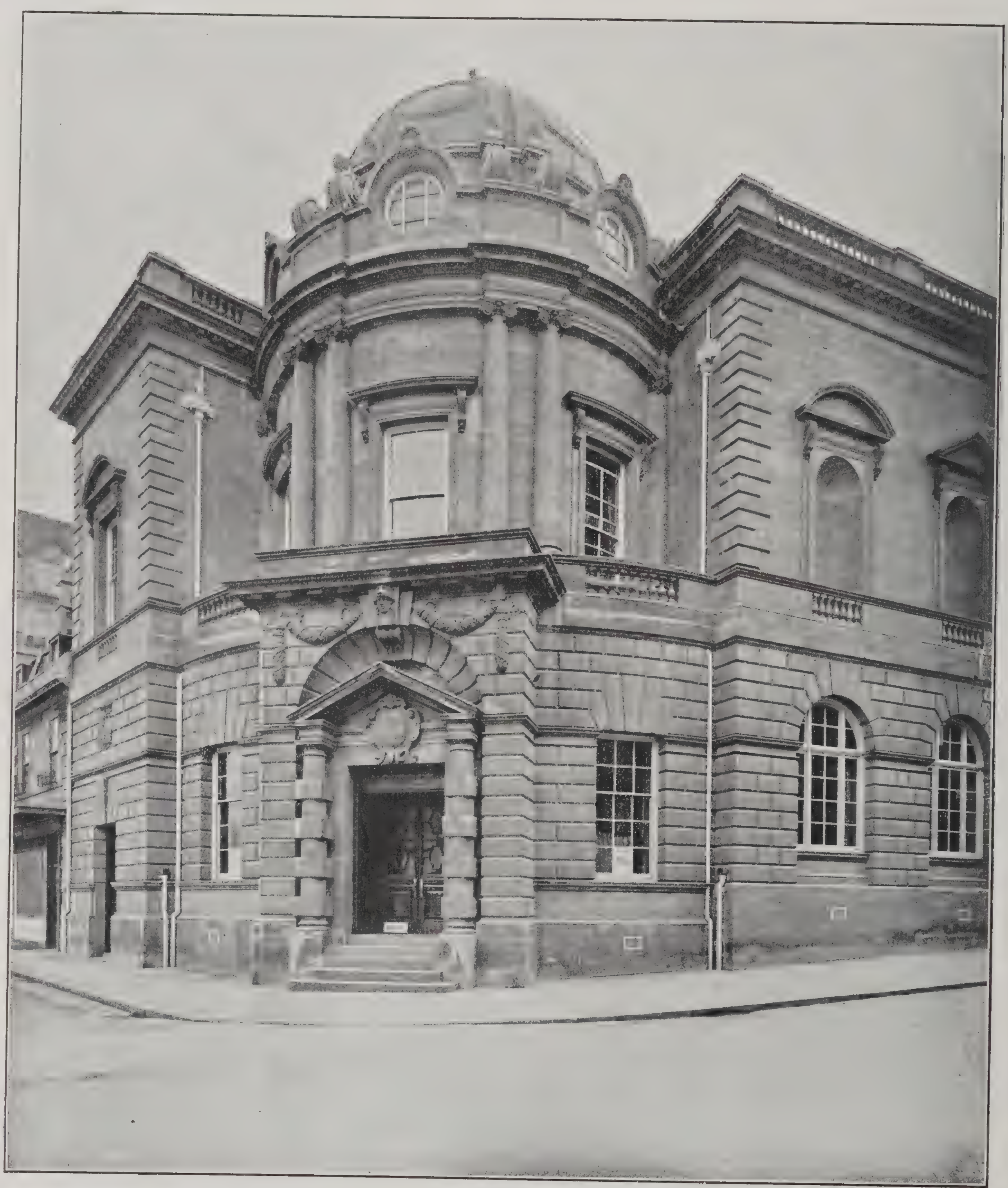

Photo: E. Dockree.

ENTRANCE TO PICTURE GALLERY, BATH. THE LATE J. M. BRYDON, ARCHITECT.

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THE ARCHITECTS' &
BUILDERS' JOURNAL.

DECEMBER 31st, 1910. CAXTON HOUSE, WESTMINSTER VOLUME 32. No. 831.

ARCHITECTURE DURING THE PAST YEAR.

AT the close of a year one naturally looks back to consider what has been the course of architecture during the year, and what is its present position and its promise for the immediate future.

It has not been a year of any very notable architectural achievement. The most important incident in respect of projected new buildings has perhaps been the Usher Hall competition at Edinburgh; and though this resulted in the selection of a design externally pleasing and well-balanced in an architectural sense, it can hardly be said to have thrown any new light on the problem, hitherto very insufficiently understood, of the planning and designing of rooms for music. Another important competition was that for the Welsh National Museum. All the three premiated designs in this competition showed that kind of combination of columnar orders with heavy angular masses which seems the special note of the "Free Classic" of the day. There is an unquestionable effectiveness and a monumental character about this type of design, but it rather wants coherence, and a good deal of it is mere passing fashion, which will give way in time, perhaps, to something more truly artistic and consistent. In the meantime we have seen coming into use, not in public buildings, but in street fronts of average size, a type of detail which has partly been fostered and encouraged by the example of some eminent architects (or their assistants?) which consists in apparently hanging a building all over with small projecting blocks that have no meaning, and end in nothing, except in what looks like the tag-end of a heavy "swag" depending from them. This kind of detail, which is a mere trick of fashion, is unfortunately easily imitated, and seems now to be the stock-in-trade of every speculative builder who keeps an architect on the premises. It is a style of detail so bad and so absurd that it can hardly last long.

The completion of the block of buildings at the end of the Victoria Memorial roadway, designed so as to reconcile, or rather to conceal, the different lines of axis of the Memorial Road and of the Strand, is now complete and disembarrassed of its scaffolding. It answers its purpose, and the public can now see that the archways in it are not "tunnels," as someone called them in a newspaper controversy; yet we cannot but regret that this large building, which blocks out so much in both directions, was substituted for the circular fountain which appeared in the original design as the meeting-point of the two axes of road. And while on the subject of the Victoria Memorial Road, we may ask when are the commonplace and vulgarly designed electric lamp standards, placed there *ad interim* by the Westminster Borough Council, to be removed and replaced (as promised) with permanent designs of a better character? It is high time that it were done; many people already imagine that these ugly lamp standards are part of the permanent design.

The progress of the Liverpool Cathedral, the only English Cathedral of first-class dimensions erected in modern times, has attracted special interest owing to the bold change from the first contemplated design, in the addition of a large central tower. If carried out as illustrated, this will be a very fine addition to the building, without it being in any way necessary to sacrifice the subordinate towers at the entrance end.

The problem of the proposed new St. Paul's Bridge over the Thames has occupied a considerable amount of public attention, both within and without the architectural profession; and not in a satisfactory manner. In the case of Vauxhall Bridge, we had to fight against official ignorance and indifference, and it was only by dint of public ridicule that the Bridges Committee of the County Council were at length compelled to call in an eminent architect, and the present fine bridge was secured. It is evident that the same kind of fight will be necessary over the St. Paul's Bridge. The official body concerned with it have refused to disclose what they are doing; they evidently do not in the least realise that this is a matter in which they are responsible to the public at large for producing something which will be architecturally great; and they have treated the advice of the Institute of Architects as if it were an impertinent interference. All this is only a repetition of what has been gone through before in similar cases; but an Act of Parliament has to be obtained for carrying out the bridge, and the authorities will certainly not be likely to obtain that until they have produced their scheme for public comment and criticism.

In some respects the most important event of the year has been the Town-Planning Conference set on foot by the Institute of Architects. The consideration of Town-planning in a comprehensive manner and from an architectural point of view has become one of the leading ideas of the day; it is perhaps even in danger of being carried a little too far and becoming a kind of craze. But if the Conference brought out some rather visionary and impractical papers, it was well worth holding for the sake of the splendid exhibition of plans which was organised at the Royal Academy rooms, and which attracted a great deal of attention from the general public, as well as from architects. There has never been such an opportunity before of seeing together, and comparing, the methods of laying out the modern portions of cities practised in all the important countries of the world; and all who visited the exhibition must have been struck with the grandiose idea of the American architects in regard to the improvement schemes of Chicago and Washington. The former, indeed, may have been thought too Utopian to have any chance of actual realisation; but these great American schemes tended at all events to fire the ambition and emulation of town-planning architects.

While these town-planning schemes are concerned with the future of our architecture, some assistance has been given towards the preservation of its past by the labours of the Royal Commission on Historical Monuments, whose Report was issued during the course of the year. The Report concerned only one county, Hertfordshire; but as far as that county was concerned, it constituted such a complete county history of architecture, with such numerous illustrations, that one can only hope that the architectural and archæological contents of every county may be treated in a similar manner, and thus

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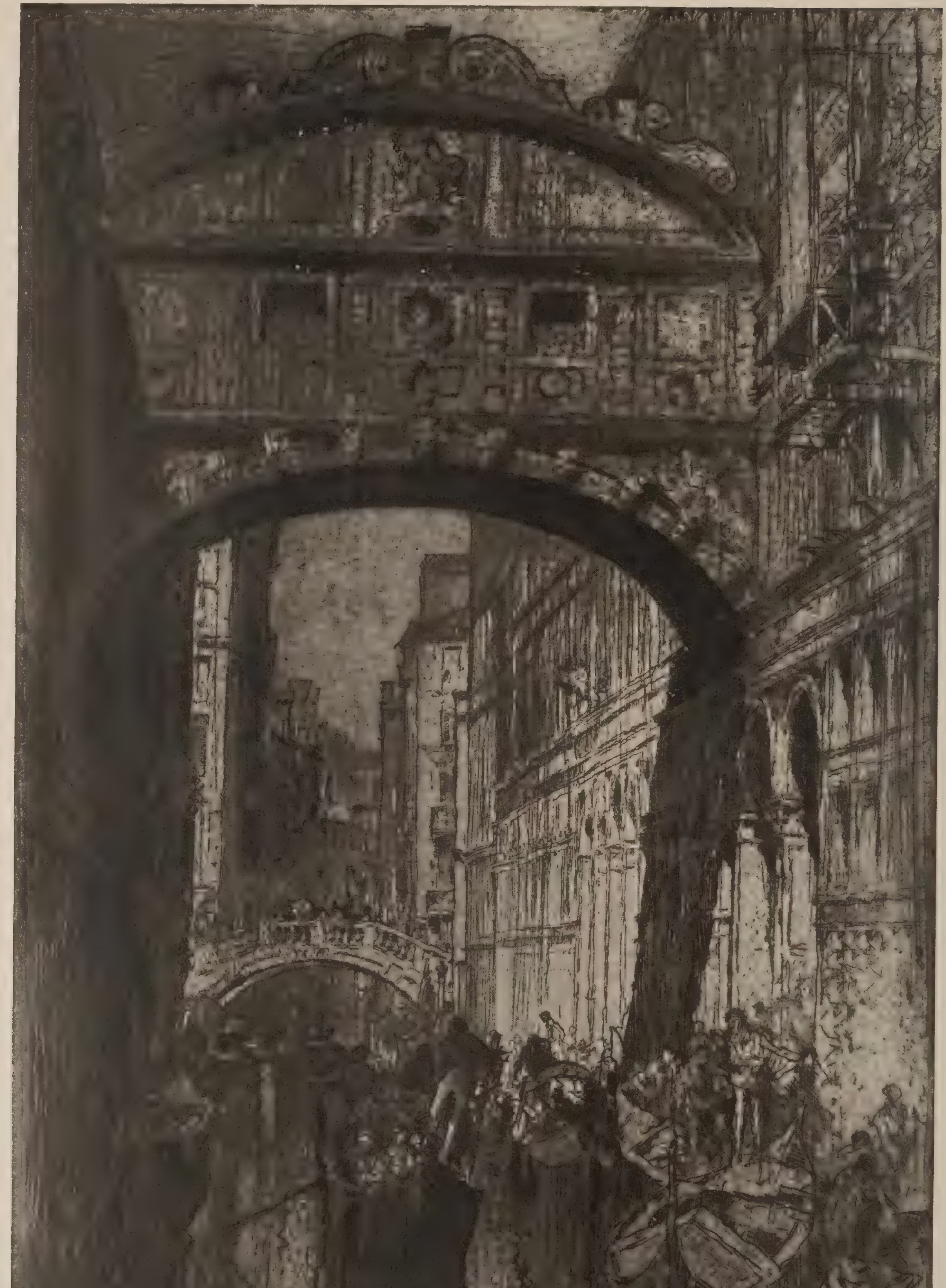


THE "BRIDGE OF SIGHS," VENICE.

From the etching by Frank Brangwyn, A.R.A.

form a complete body of history of the remains of ancient architecture in England. This must be a work of time; but in the meanwhile the mere fact of the existence of such a Commission, and the tone taken in its Report in regard to the interest and the value to the country of our ancient monuments, should be sufficient to create a more enlightened public opinion on the subject, and to render it easier than it has been in past times to check the spoliation of such monuments by ignorant or indifferent owners.

The much-vexed question of copyright in architectural design has come to the front again during the year in connection with the Bill for establishing copyright in works of art; a Bill in which architecture was mentioned only to be associated with a clause depriving the architect of any of the legal remedies provided for other artists. This is only one among many instances of the apparent impossibility in this country of getting Government authorities or lawyers to understand what an architect is or what are his claims to legal recognition and protection. This deficiency in the Bill was, of course, fully considered and dealt with by the Institute of Architects, and clauses proposed which would safeguard the interests of architects. In the present state of politics it is doubtful, of course, whether the Bill will be heard of again; but if one on similar lines is brought in by a future Parliament, it will probably be found that the representations made by the Institute Committee have not been altogether in vain.

A new stage in the history of the Institute of Architects was reached during the year. The long desired acquisition of enlarged premises, as the property of the Institute, has at last been brought about, and with the commencement of the present Session the Institute entered, one may say, on a new lease of life, with an additional finely designed suite of rooms, and the advantage of being able from this time to devote their fine library entirely to the uses of a library, instead of having to use it both as library and meeting room. Those who remember the old days of the Institute of Architects, in its limited premises and with its comparatively small amount of committee work, and compare it with the Institute of to-day, with its enlarged premises, its examinations, and its numerous committees dealing with all classes of subjects connected with the interests of the profession, must admit that it presents a remarkable example of progress and development from comparatively small beginnings. The next thing the Institute of Architects has to do is to rebuild the façade of its house, and that will crown the edifice.

Westminster Cathedral.

The "Catholic Directory" for 1911 contains the following statement with reference to the present condition of the Roman Catholic Cathedral at Westminster, the first stone of which, it is recalled, was laid on June 29, 1895:—"With the exception of the mosaic in the great entrance arch of the west front, the exterior is now complete. In the interior two of the side chapels are finished; the marble and bronze work has been done in the Chapel of the Blessed Sacrament, as well as the marble work in the Lady Chapel; and the altars in all the chapels were completed and consecrated last year (1910); the Archbishop's throne and the marble front of the sanctuary have been erected, and the upper part of the sanctuary paved with marble; the noble baldachino of marble and mosaic, supported by eight columns, has been erected over the high altar; and there is a recumbent statue in marble of Cardinal Vaughan, together with some beautiful marble work in the Chantry Chapel; and much work has been done to the Sacred Heart Chapel, as well as to the Mortuary Chapel of St. Edmund in the crypt, which contains the tombs of Cardinal Wiseman and Cardinal Manning. Over the latter's tomb there is a recumbent figure in bronze executed by the late John Adams Acton, who died in 1910. The Stations of the Cross in mosaic are paid for, but up to the present only the marble frames are in position. The electric light pendants are also in place, and while they are a great architectural addition to the fabric, they may not be used till they are paid for; including all work in connection with them, they (12) cost £2,004, or one £167. The expenditure, including payments for the Cathedral Hall and the cloisters, had amounted (in October, 1910) to £258,700."

The Temple Church Organ.

The Temple Church organ, which has for some months been under repair and reconstruction, was opened on December 17. This famous instrument, the pipes of which are of exceptionally soft, sweet, and brilliant tone, was originally made by the famous organ-builder Bernard Smith, called Father Smith, in 1682-4, and purchased in June, 1688, by the Societies of the Middle and Inner Temple for £1,000. Smith was the most famous organ-builder of his time, and this was the largest and most famous of his organs. It has been said of the organ pipes and stops made by him that "their fame is equal to that of pictures or single figures by Raphael. A single stop known to be of Smith's workmanship is still invaluable; the touch and mechanism of modern instruments may be superior to those of Smith, but for sweetness of tone I have never met with any pipes that have equalled his in any part of Europe." The Masters of the Bench decided last year to have the organ taken down and reconstructed, with the substitution of pneumatic action for the old "tracker" action, the addition of 11 new stops, and other improvements, while carefully retaining and preserving the pipes and stops of Smith and Schulze. The work was entrusted to Mr. F. Rothwell, of Willesden, who has for some years had charge of the organ, under the supervision of Dr. H. Walford Davies. The "Times" of December 17 contains a full description of the instrument.

A Monument to Perrault.

A monument to Charles Perrault was unveiled recently, without any public ceremonial, in the Tuileries Gardens, Paris. Complaints are rife regarding the number of statues—frequently dedicated to nonentities—which cumber the public places of modern Paris, yet, as the Paris correspondent of the "Times" observes, no one who was ever really a child can fail to approve this tardy act of public recognition of the creator of Tom Thumb, the Sleeping Beauty, Red Riding Hood, and a hundred other "Contes des Fées" that have opened new worlds to many generations of children. The choice of the site of this monument, which takes the form of a bust of Perrault, around which a ring of children is dancing, is peculiarly appropriate. Perrault, who began to publish his fairy stories in 1697, was originally a lawyer. He became a friend of Colbert, and was elected a member of the Academy. After Le Nôtre had transformed the Tuileries, it was Perrault who begged Colbert to leave the gardens open, that children might play in them, and children have never ceased to take advantage of the privilege.

Mr. Brangwyn's Etching of "The Bridge of Sighs."

The magnificent etching of "The Bridge of Sighs" at Venice which is reproduced as a supplement plate in this issue shows the talent of Mr. Frank Brangwyn, A.R.A., in a fresh direction. During the past few years Mr. Brangwyn has been building up a great reputation for himself, and he is now considered to be the foremost decorative painter in England. He has been heralded as a colourist of peculiar distinction by his fellow-artists, and is regarded by them with a whole-hearted and growing enthusiasm. In the accompanying etching, which we are able to reproduce by courtesy of the artist, the same fine feeling for composition and decorative effect is observable, making the picture one of great charm, immediately captivating.

BRYDON'S WORK AT BATH.

IN a city like Bath, containing buildings by such able designers as the two Woods and Baldwin, new work is at once challenged by comparison with the old; and it is no easy task to meet that challenge effectively. This, however, the late Mr. Brydon did, his work there rising to a high level of achievement. It includes the additions to the Guildhall, the restoration of the Roman Bath, the new Concert Room, the new Technical Schools, and the new Picture Gallery and Reference Library, some photographs of which are here reproduced.

Brydon first went to Bath about ten years before his death (which took place in 1901). At that time, architectural students who visited the city for the sake of the noble buildings left by the eighteenth century observed that taste was literally dead; in fact, a kind of opposition to good work had sprung up. For example, the best views of the famous Crescent were spoilt by the intrusion of a modern Gothic spire; the front of the Guildhall was injured by the addition of semi-Gothic archways; while, to the south-east, a police barrack, and, later, a vast hotel, helped to indicate that the Bath of the Woods and of Baldwin, of Allen and Nash, was a thing of the past.

Up to that time Brydon's strict views on art seem to have kept him in comparative obscurity. There was no room in the London of the Albert Hall or the Natural History Museum for an artist who had studied Inigo Jones's Whitehall designs, and had analysed the composition of Wren's City churches. He is said to have employed himself in designing furniture, and when he first appears on the walls of the Royal Academy it is with drawings of villas, and especially of studios. A foreign genius, Tissot, was in England in those days engaged in the uncongenial work of drawing caricatures. He appears to have early recognised Brydon's abilities; a studio in Grove End Road led, when Tissot had returned to his own land, to a château in France. Both studio and château figured in exhibited drawings. Summerfield, near Roehampton, and Lewins, in Kent, followed, and after them some work among the picturesque hills which surround Bath. Here he was introduced to such examples of the

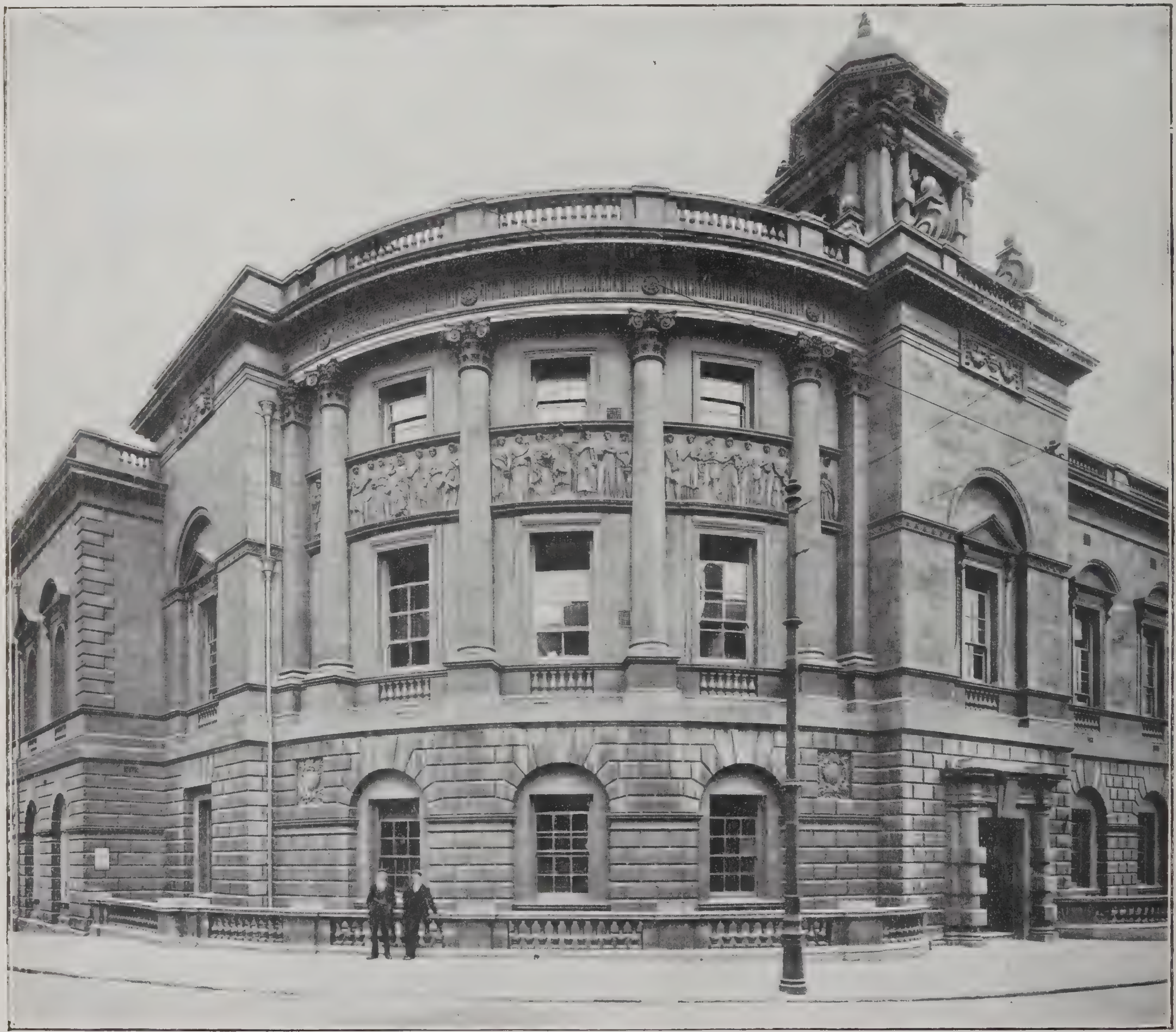


Photo: E. Dockree.

THE TECHNICAL SCHOOLS, BATH. THE LATE J. M. BRYDON, ARCHITECT.

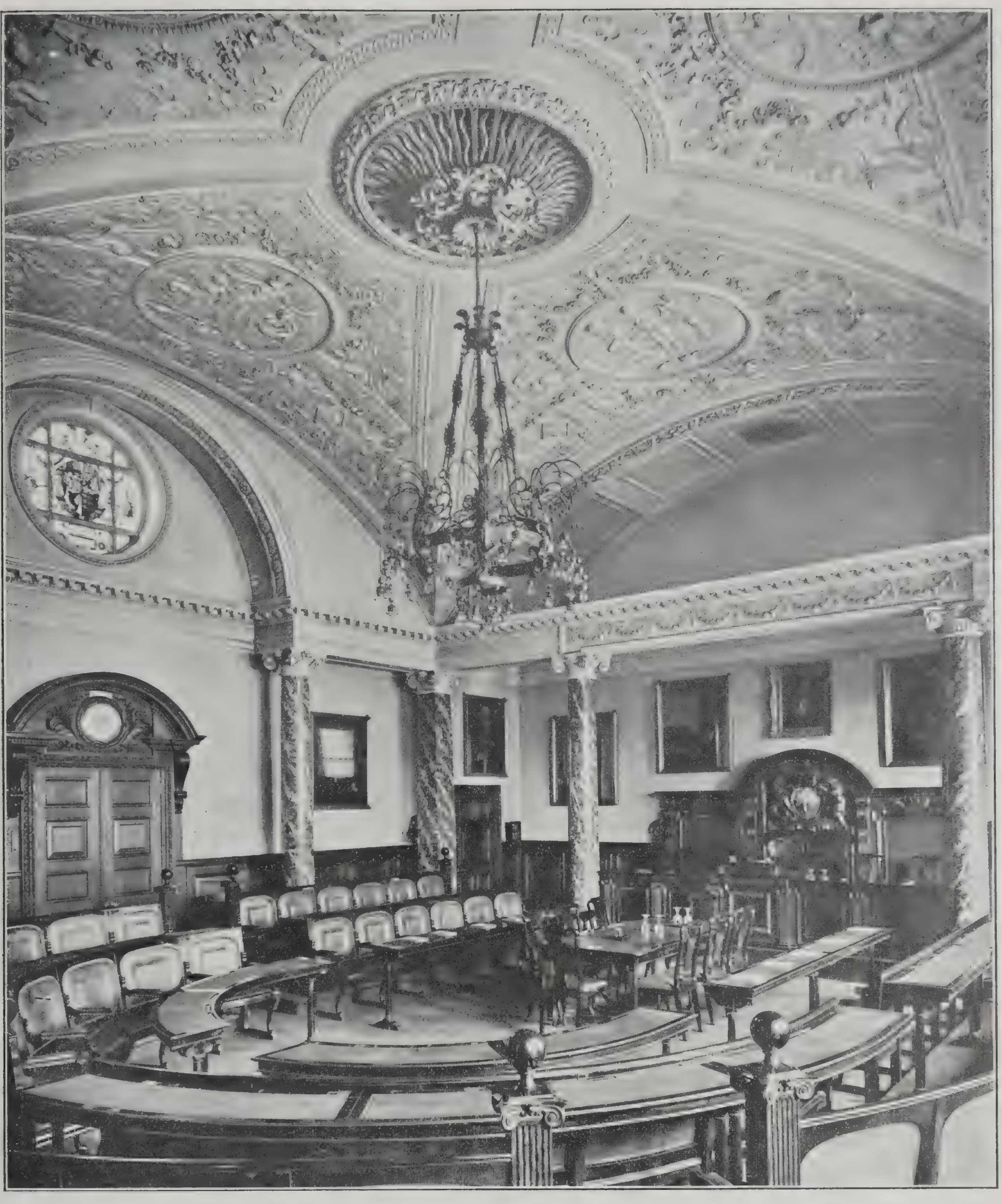


Photo: E. Dockree.

COUNCIL CHAMBER, THE GUILDHALL, BATH. THE LATE J. M. BRYDON, ARCHITECT.

eighteenth century as Titan Barrow, Widmore Manor, and Prior Park. He must have frequently visited and admired the city itself, where the squares, the crescents, the streets, and many individual houses must have attracted his attention. To a student of proportion the problems here presented were most absorbing, and, at first, must have seemed almost inexhaustible. The Gothic architect of the so-called revival had somehow completely missed them. He had never perceived that proportion reigned at Salisbury in the thirteenth century and at Westminster in the fourteenth, nor that pointed arches and window tracery are not enough by themselves to constitute a style without harmony. It is true the modern Gothic never took much hold at Bath. The stiff steeple near the railway station may have acted as a warning to anyone entering the city from the south. But instead of it or of the old local style of Greenaway and Strahan, of Baldwin and the Woods, a kind of anomalous fashion, eclectic perhaps, came into use. Brydon, however, now made acquaintance with one element in his subsequent success, the splendid local building-stone. His largest works in London, the hospitals in Euston Road and Henrietta Street, and the houses in Chenies Street, had been carried out in brick. At Bath he worked in stone.

The state of architecture at Bath was thus by no means satisfactory in 1891. Local influences were very strong, and when in the course of that year a competition was resolved upon for additions to the existing Guildhall in High Street, it seemed more than likely that they would prevail. The situation may be briefly described. The municipal buildings, as they were then, consisted externally of a front by Thomas Baldwin, of minor wings and of certain buildings, including

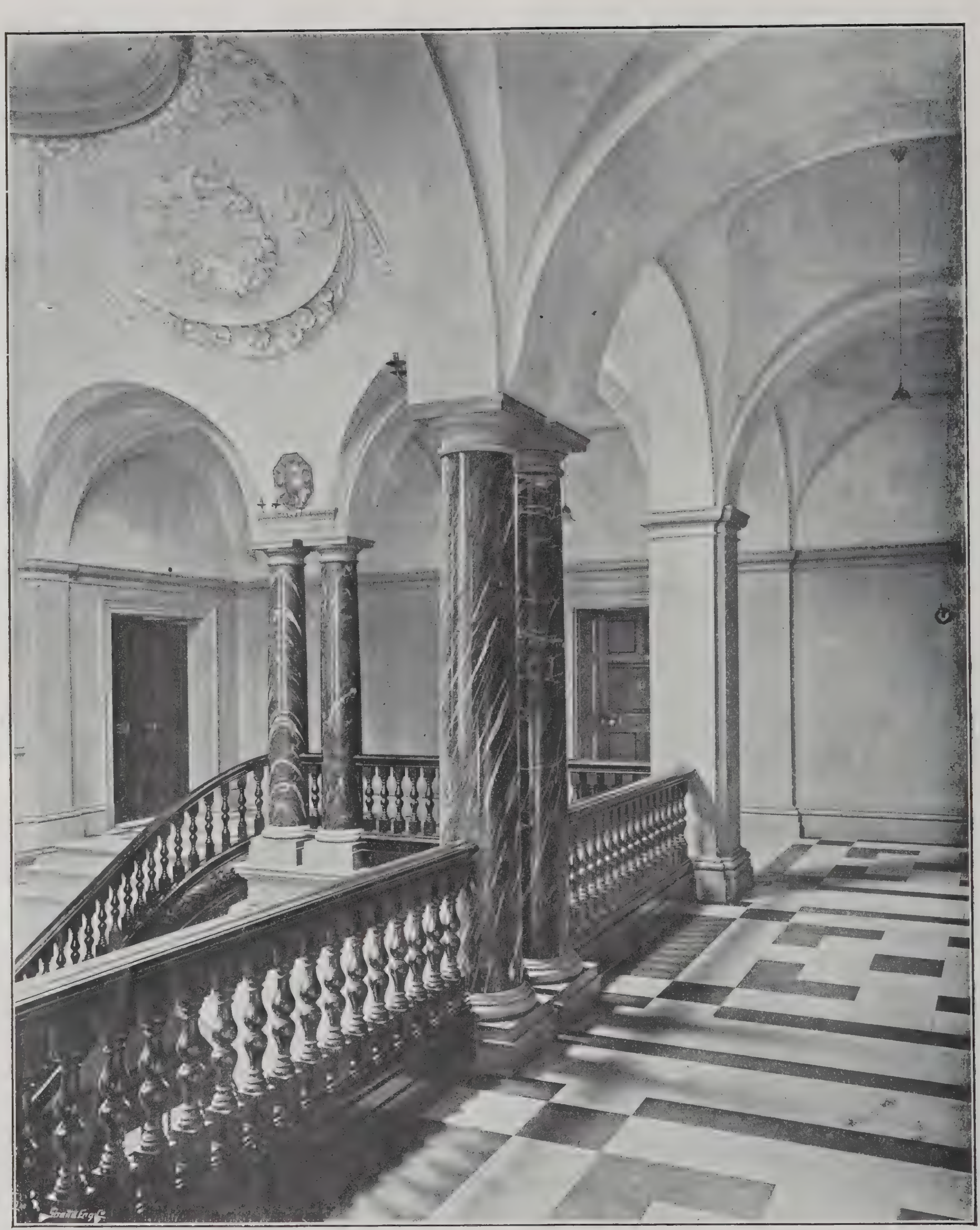


Photo: E. Dockree.

THE STAIRCASE AT THE GUILDHALL, BATH.

a market and a gaol in rear. The architectural part of the front was admirable, as was the almost completely hidden western elevation in rear. It was built in 1775 and the three years immediately following, and must have been strongly influenced by the style of Robert Adam, for though it has not the vigour of that of the two Woods, it is more decorative in character. An Ionic pediment forms the central feature, to which a low dome was added behind in 1895, and a figure of Justice, but not blindfolded, in lead, crowns the gable, and marks the fact that it covers the law court, with apartments for the magistrates and the jury. The staircase is very similar to a specimen of Adelphi Adam's work, the plaster mouldings being exceedingly fine, a form of decoration which appealed powerfully to Brydon, as it formerly appealed to Wren. To this building it was proposed to make considerable additions.

The city required municipal offices, and there was more than a talk of such things as art schools and picture galleries. The first question was, naturally, how far it would be needful to meddle with the existing building. The addition involved only a portion of the available space, but the idea of a southern wing to Baldwin's centre, with the possibility of a northern wing later, was not evolved until some time and thought had been spent on the subject.

The problem presented was briefly as follows: A single central building facing west, into High Street, was to be supplemented with wings, north and south, of which that to the south, comprising new municipal offices, was to be erected first. The existing accommodation included a town hall on the first floor and under it a sessions court. There were jury-rooms, robing-rooms, and other offices; but for a city of the size and importance of Bath a great deal more was required. Brydon, who was the successful competitor, showed that he would place all the new municipal offices in the south wing, the further space being obtained by continuing the new building along a south front between the end of his western front and the entrance to the police barrack. At the acute angle forming the corner between High Street and Orange Grove he made a quadrant-shaped building with a doorway and hall. Adjoining the hall he placed a staircase which was surmounted by a turret. Without disturbing the old arrangement of the centre block, he made a new police court, adjoining the sessions court, and over it a council chamber. The latter is the chief feature of the interior. It measures 45ft. by 36ft., and has a segmental ceiling ornamented with emblematic figures representing the Arts, Sciences, Commerce, and Justice (by Mr. Schenck) in low relief plasterwork. The wall panelling and fittings are of American walnut, and the fifty-six councillors' seats are of mahogany.

The staircase at the Guildhall, though not very large, is so designed as to produce a grand effect. The proportions are

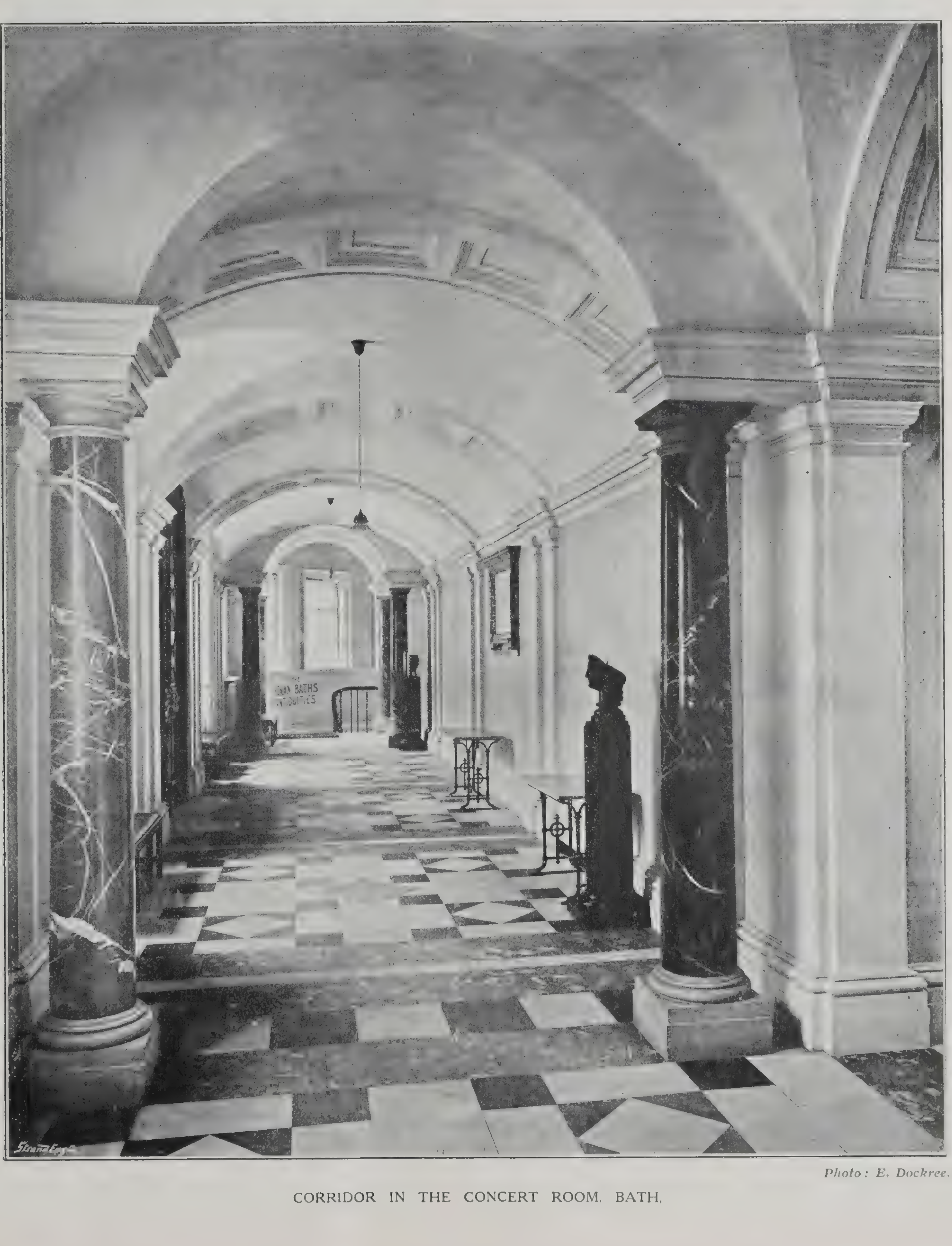


Photo: E. Dockree.

CORRIDOR IN THE CONCERT ROOM, BATH.

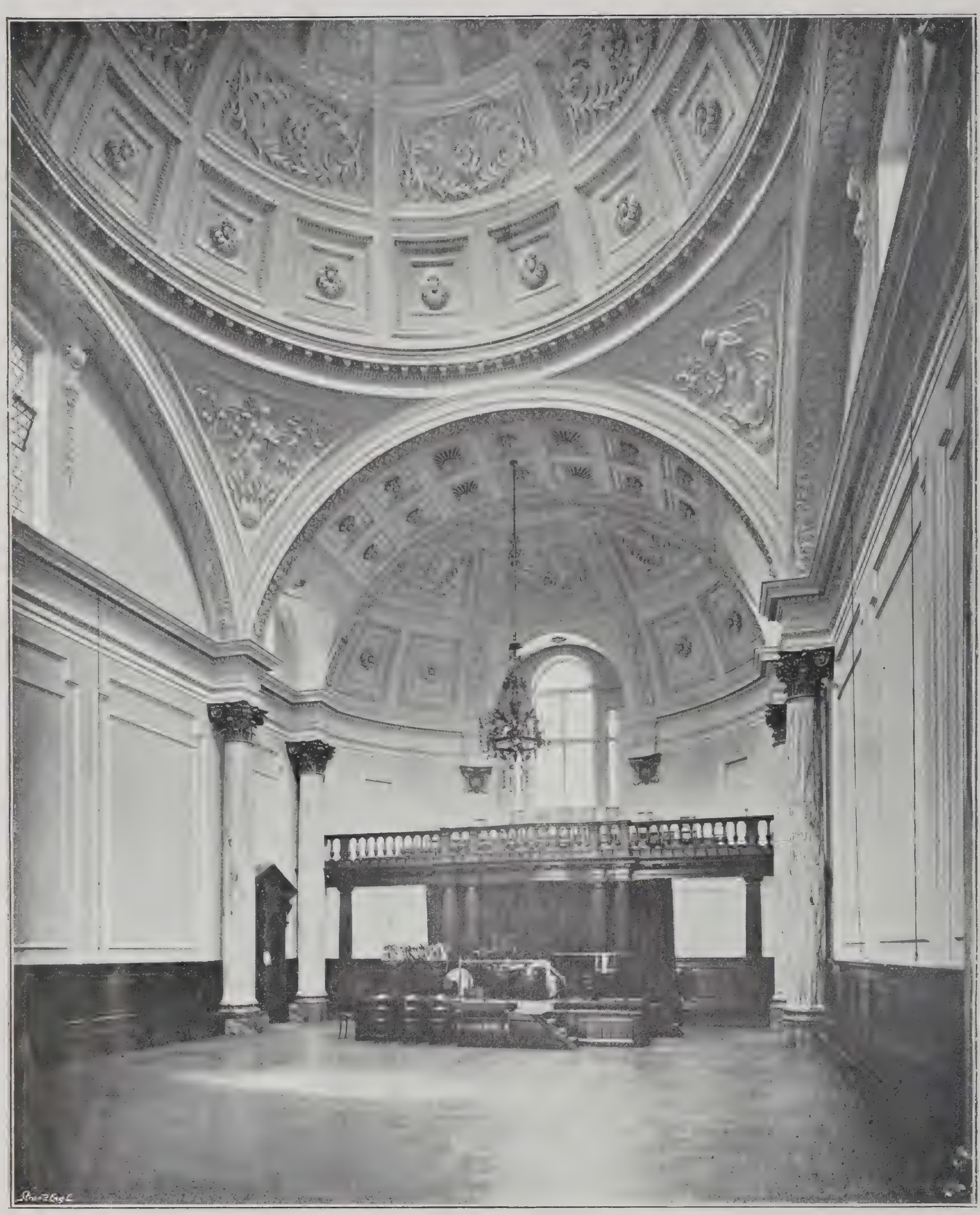


Photo: E. Dockree.

NORTH END OF THE CONCERT ROOM, BATH. THE LATE J. M. BRYDON, ARCHITECT.

simple and are not disguised by ornament. It is finely vaulted, the vaulting, in plain white stone, being supported by Tuscan Doric columns of dark marble, with balustrades of carved mahogany, the only decorative feature being the arms of Bath within a floral wreath, sculptured above the stair-head.

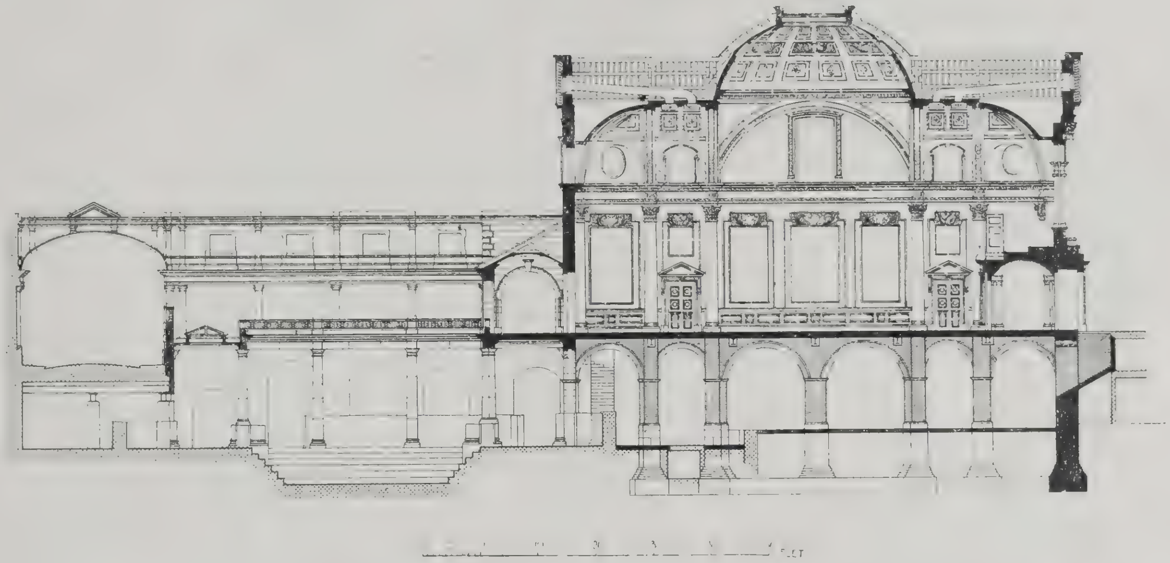
Brydon's next work at Bath was concerned with the very remarkable Roman remains discovered in the Abbey Churchyard, adjoining the old Pump Room, his task being to preserve what had been left uninjured, and to provide a place for preserving what might subsequently be found. This work also he accomplished with pronounced success.

In close connection with the preservation of the Roman remains was the question of providing a new Concert Room. For this, again, a competition was held, Brydon being once more the successful competitor. The accompanying photographs and section show the work and how it has been carried out in relation to the Roman Baths. The front of the building displays a fine composition of six Corinthian columns supporting a pediment, with a "Venetian" window as central feature, flanked by two arched niches. The entrance leads into a corridor, very effectively treated, from which access is gained to the Roman Baths at the lowest level. The Concert Room itself recalls in many respects the work of Wren, traces being visible everywhere of a careful study of such a building as St. Stephen's, Walbrook. The apartment measures 71ft. 6in. by 39ft., the height being 53ft. to the centre of the dome. The latter is segmental, the four pendentives being marked by marble columns, with bronze gilt capitals of Composite character, in which respect they evoke some adverse criticism.

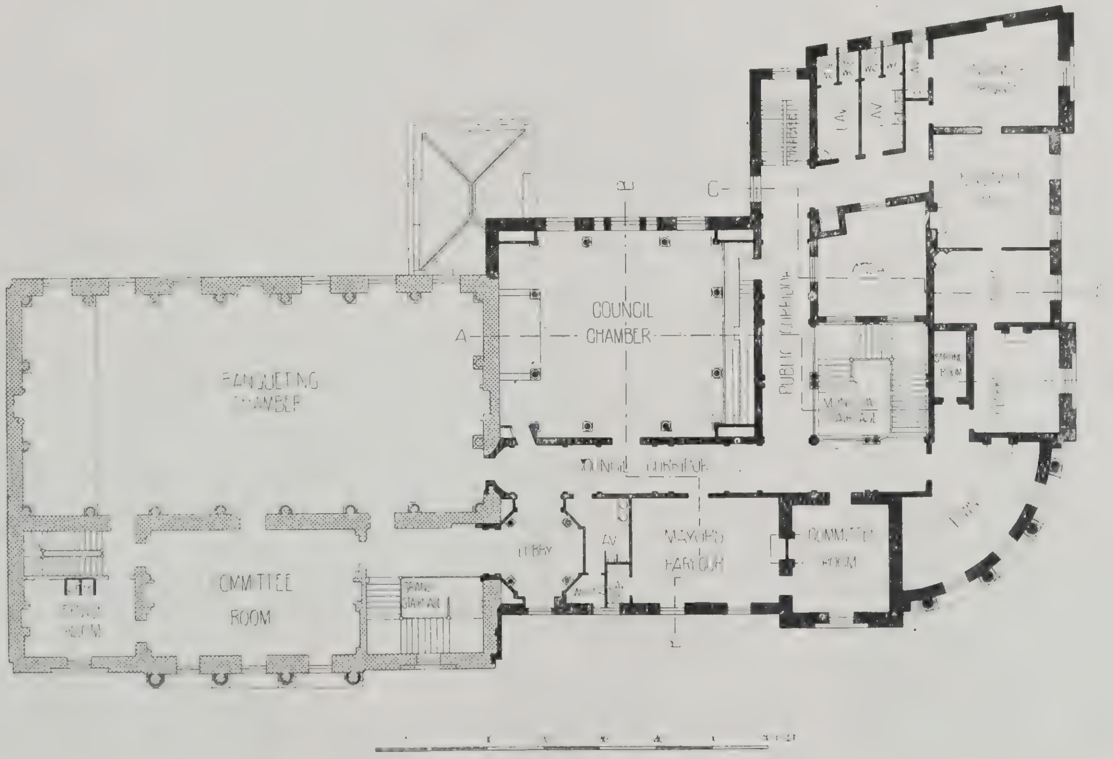
The Picture Gallery and Reference Library were erected in celebration of the Diamond Jubilee of Queen Victoria. The main front is to Bridge Street. The library is on the ground floor, and the picture gallery above. The principal entrance to the staircase and gallery is by a corner doorway which admits to a circular hall or vestibule of great beauty, 22ft. in diameter, from which a door opens at one side on the print-room. There is an archway on the south side to the staircase, and a vestibule above from which entrance is had to the gallery. The whole composition, including the two circular vestibules and the rectangular building which contains the staircase, merits close examination. The picture gallery is perfectly plain within except for the management of the lighting, which is very good. The gallery is 90ft. long by 32ft. wide, and at the sides measures 25ft., the centre, where are the windows, being 35ft. in height.

From these examples it is easy to distinguish the characteristics of Brydon's work. With simple materials, the details which we recognise as "classical," those of Inigo Jones and Wren, he evolved buildings of no great size or importance depending not at all upon ornament, yet complete in design, fitness, proportion, and suitability in a way unfortunately but too rare among modern architects.

Prior to experience it might have been thought that no modern architect could add to the attractions offered at Bath by the beautiful work of the eighteenth century. But Brydon's talent proved otherwise, and the buildings he erected may be said to rank with the Circus, the Crescent, or the north side of Queen Square, as examples not only of architecture, but of pure art in the abstract.



Longitudinal Section through Concert Room, and Cross Section through Roman Bath.



First-floor Plan of Extension to the Guildhall, Bath.

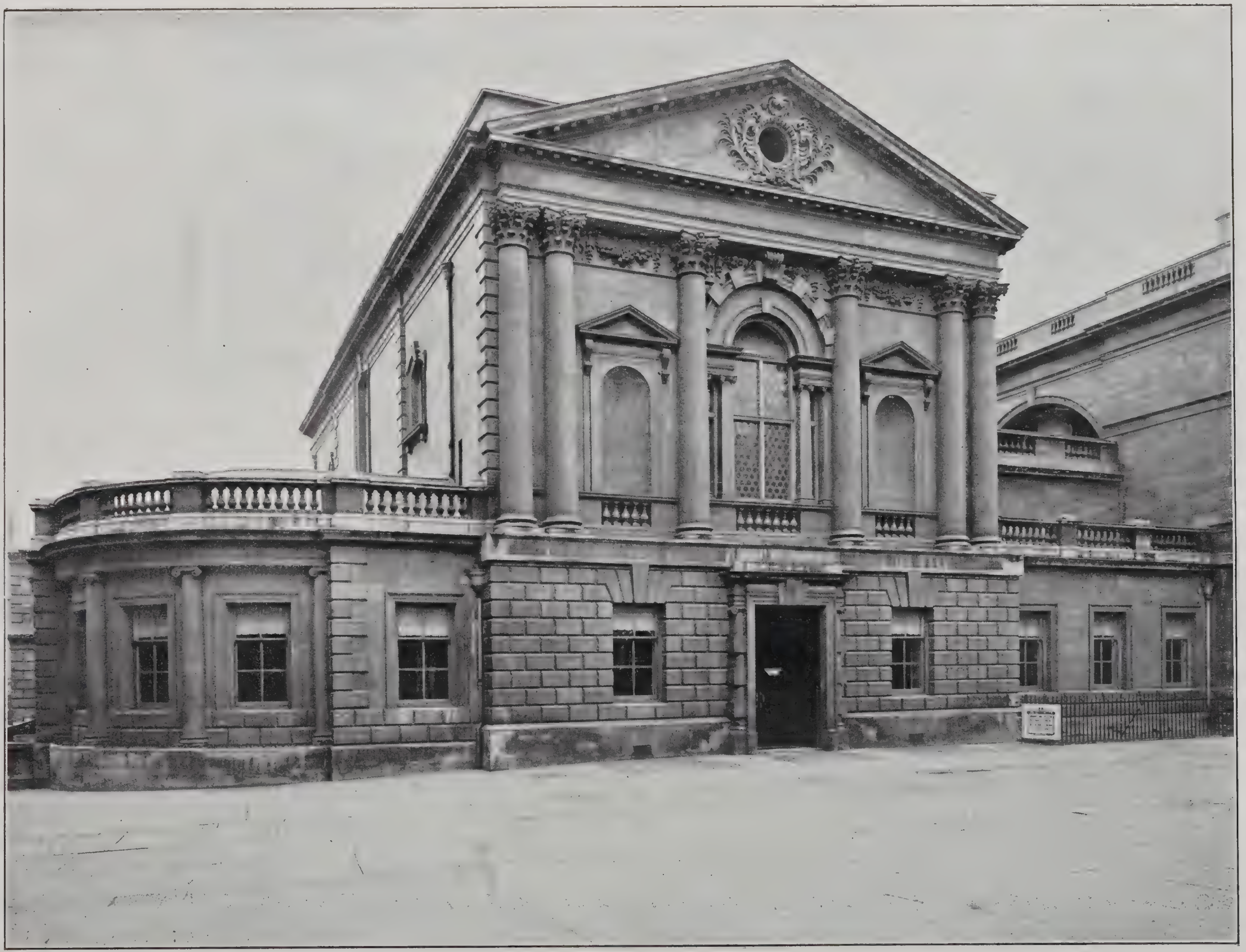


Photo: E. Dockree.

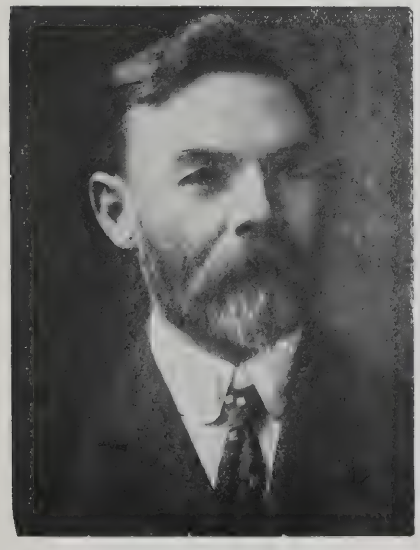
THE CONCERT ROOM, BATH. THE LATE J. M. BRYDON, ARCHITECT.

THE PRESIDENTS OF THE ARCHITECTURAL SOCIETIES.

We publish in this issue a series of portraits of the presidents of the various architectural societies in the United Kingdom, with some brief biographical particulars.

The Royal Institute of British Architects is represented by Mr. Leonard Stokes, and the presidents of all the Allied Societies are included, with the exception of Mr. A. S. Dixon, of the Birmingham Architectural Association; Mr. J. F. Wood, of the Bristol Society of Architects; Mr. H. C. Charlewood, of the Northern Architectural Association; and Mr. R. Evans, jun., of the Nottingham Architectural Society, who either have no portrait available, or do not wish same to be published. The presidents of the Allied Societies in the Colonies—Mr. F. S. Baker, of the Royal Achitectural Institute of Canada; Mr. F. Masey, of the Cape Institute of Architects; Mr. C. W. Methven, of the Natal Institute; Mr. G. B. Robertson, of the New South Wales Institute; Mr. J. F. Beardwood, of the Transvaal Institute; Mr. A. Henderson, of the Victorian Institute; and Mr. J. Talbot Hobb, of the West Australian Institute—we hope to publish together on another occasion.

Mr. Leonard Stokes, who is a past president of the Architectural Association, was vice-president of the Institute from 1905-9. He was born in Southport, and came to London in 1871. Articled to S. J. Nicholl in 1874, he subsequently spent some time with James Gandy, quantity surveyor. In 1880 he was Pugin Student. Mr. Stokes worked under the late Mr. G. E. Street, R.A., Mr. Thomas Collcutt, and Messrs. Bodley and Garner. He is the architect of many churches and domestic buildings, and works in a vein of modern Gothic, with distinguished ability. Among the secular buildings erected from his designs are a number of telephone exchanges in London and the provinces.



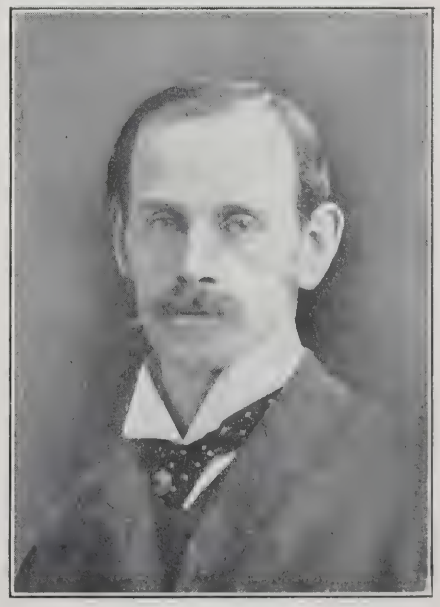
MR. G. E. BOND.
President of the Society of Architects.

MR. LEONARD STOKES.
President of the Royal Institute of British Architects.

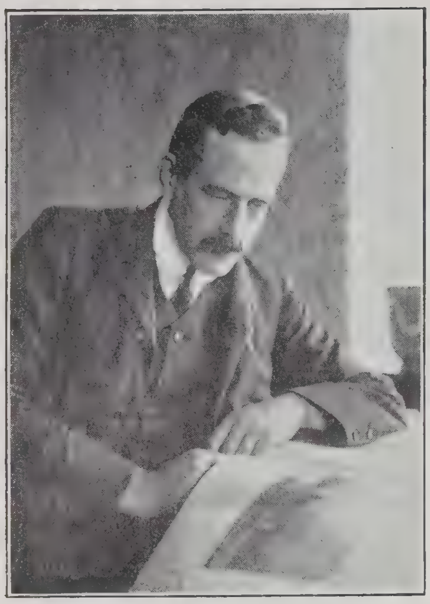
Mr. G. E. Bond, J.P., President of the Society of Architects, has occupied the presidential chair for the past three years, and is a most popular member of the Society.

Mr. Arthur Keen is one of that band of brilliant men who passed through Mr. Norman Shaw's office, and who have all since come to the front rank of the profession. Mr. Keen studied at the Royal Academy, but confesses that although he obtained a prize, he did not derive all the possible benefit from this institution. He is a firm believer in the necessity of study from the life as a factor in architectural training, and thinks that far more attention should be given to sculpture and painting—especially decorative painting; and this is one of his reasons for advocating the Academy as a finishing school, wherein students in architecture, painting, and sculpture may get into intimate touch with each other's work. He would, however, desire to see the Academy brought to the plane of the Ecole des Beaux Arts, in Paris, where men rarely obtain high honours until they reach the late twenties. Mr. Keen is known chiefly as the designer of delightful domestic work; but there is another side to his practice. He is responsible for a large number of factories and warehouses in London, which show a considerable advance on the usual type of severely commercial building.

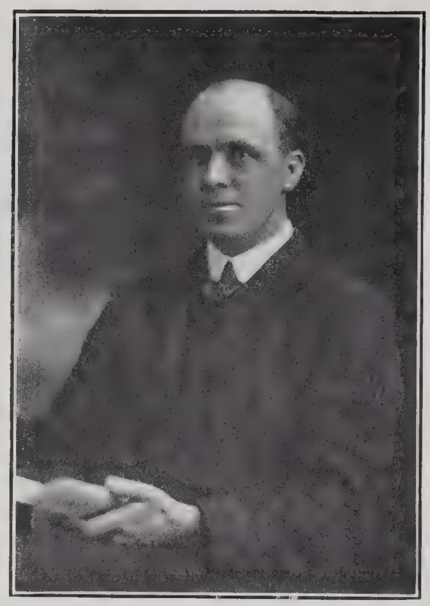
Mr. James B. Dunn, president of the Edinburgh Architectural Association, served his pupilage under the late Mr. James Campbell Walker, who was for many years principal assistant to the late firm of Burn and Bryce, afterwards remaining with Mr. David Bryce, R.S.A., on Mr. Burn's starting his London practice. In connection with the Edinburgh Public Library competition, Mr. Dunn secured a second premium, the assessor being the late Mr. Alfred Waterhouse, R.A. Afterwards in competition he was selected to carry out the library for the Society of Solicitors, Edinburgh. Under the firm of Dunn and Findlay the following works were carried out:—Adam Smith and Beveridge memorial halls, Kirkcaldy (won in competition), costing £27,000; the new "Scotsman" buildings, Edinburgh, costing over £300,000; the Wesleyan Methodist Halls, Edinburgh, costing £25,000; Victoria Chambers, Edinburgh, costing £10,000; the Queen's Club (for ladies), costing £10,000; Dean Parish Church, Edin-



MR. ARTHUR KEEN.
President of the Architectural Association.



MR. A. G. C MILLAR,
President of the Architectural Association of Ireland.



MR W. F. WILKIE,
President of the Dundee Institute of Architects.

MR. ARNOLD THORNELY,
President of the Liverpool Architectural Society.

burgh, costing £11,000; reconstruction of Gordon Parish Church, Berwickshire. Mr. Dunn, who is still on the right side of fifty, has also carried out a considerable amount of domestic work, among recent works being: "Beech-holme" house and stables and lodges, Canaan Lane, Edinburgh, costing £10,000; "Barnhill," Perth, costing £8,000; and Charteris Memorial Church, Edinburgh, costing £5,000.

Mr. A. G. C. Millar, president of the Architectural Association of Ireland, was educated at Corrig School, Co. Dublin, and Trinity College, Dublin University, taking degrees in Arts and Engineering. He is the son of Mr. R. C. Millar, F.R.I.A.I., to whom he was articled, and is a member of the Council of the Royal Institute of the Architects of Ireland. He has always taken a keen interest in the A.A.I., and has held office as hon. secretary.

Mr. W. Fleming Wilkie, president of the Dundee Institute of Architects, is only thirty-four years of age. He served his apprenticeship with Mr. T. Martin Cappon, F.R.I.B.A., of Dundee, and proceeded to London in 1897. He assisted Messrs. Gibson and Russell, FF.R.I.B.A., and after that firm dissolved partnership continued to assist Mr. J. S. Gibson on many large and important works and competitions. Soon after Mr. W. E. Riley was appointed Superintending Architect to the London County Council, he received an appointment in the Fire Branch under Mr. Owen Fleming, A.R.I.B.A. In 1901 he returned to Dundee to take up partnership with Mr. P. H. Thoms, F.R.I.B.A., a past president of the Dundee Institute of Architects, who had already been a few years in practice. While in London he studied at the A.A. Schools and the Royal Academy schools. Mr. Wilkie practises largely in the country, where the firm is responsible for many important houses and a number of churches. He was elected a Fellow of the Royal Institute in 1906. Mr. Wilkie has been

MR. W. M. COWDELL,
President of the Leicester and Leicestershire Society of Architects.

MR. CECIL WILSON,
President of the Cardiff, South Wales, and Monmouthshire Architects' Society.

MR. SYDNEY D. KITSON,
President of the Leeds and Yorkshire Architectural Society.

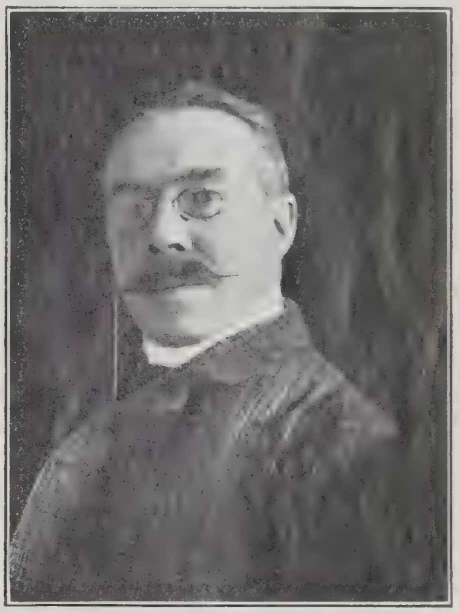
a member of council of the Dundee Institute of Architects for the past four years.

MR. W. J. HALE.
President of the Sheffield Society of Architects.

Mr. W. M. Cowdell, president of the Leicester and Leicestershire Society of Architects, was a pupil of and subsequently assistant to the late Mr. W. Jackson, F.R.I.B.A., of Leicester, for rather more than seven years, then joining the staff of Messrs. Shenton and Baker, FF.R.I.B.A., of Leicester, and in 1882 joining the late Colonel Millican, F.R.I.B.A., where he eventually became managing assistant, and at his death in 1889 took over the practice from his trustees. Mr. Cowdell has since been engaged in the work common to a provincial manufacturing town, including general domestic work, new printing offices for the proprietors of the "Leicester Advertiser," rebuilding of the "Stag and Pheasant Hotel," a considerable amount of brewery work for local firms, board and council schools in the town and country, large business premises in East Gates and Humberstone Gate, and the practical rebuilding of Hallaton Hall, Leicestershire. He was one of the competitors for the large new Freemasons' hall in Leicester, for which he gained the second premium. Mr. Cowdell was elected a Fellow of the Royal Institute a few years ago, and president of the Leicester Society in the early part of this year, in which capacity he is privileged to sit on the council of the Royal Institute.

MR. JAMES B. DUNN.
President of the Edinburgh Architectural Association.

MR. ALBERT E. MURRAY.
President of the Royal Institute of the Architects of Ireland.



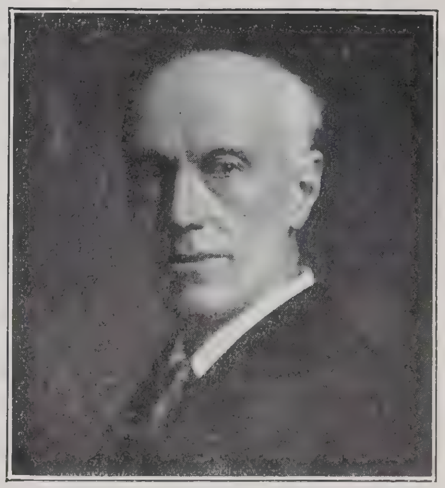
COL. JOHN B. WILSON.
President of the Glasgow Institute of Architects.

MR. W. H. MAY.
President of the Devon and Exeter Architectural Society.

Mr. C. L. Wilson, president of the Cardiff and South Wales Architects' Society, is the son of the late Mr. J. H. Wilson, of Newcastle and Cardiff. He served his articles in the office of Mr. E. M. Bruce-Vaughan, F.R.I.B.A., of Cardiff. After studying ecclesiastical architecture at home and abroad, Mr. Wilson started in practice at Cardiff, and is now a partner in the firm of Teather and Wilson, FF.R.I.B.A., whose most recent works are the Roath Free Library, Cardiff Intermediate School for Boys, Glamorgan County Women's Training College at Barry—all won in open competition, and several well-known country residences. Mr. Wilson is interested in soldiering and physical training. He is a member of the National Physical Recreation Society, and of the National Service League; hon. instructor to the Cardiff Private Gymnasium; Commissioner for the Cardiff and District Boy Scout Association; and commanding officer of the 7th Battalion of the Welsh Regiment T.F.

Mr. Sydney D. Kitson, president of the Leeds and Yorkshire Architectural Society, was born in 1871, and is the tenth and youngest son of the late Mr. James Kitson, who was the founder of the well-known firm of locomotive engineers, Kitson and Co., at Leeds. He was educated at Charterhouse and Trinity College, Cambridge (honours, and history tripos). Mr. Kitson was articled to Mr. E. J. May, architect, of Bloomsbury, and was subsequently for a short time in the office of Mr. W. D. Caröe (architect to the Ecclesiastical Commissioners). In 1897 he joined the

MR. SAMUEL NEEDHAM.
President of the York and Yorkshire Architectural Society.



MR. ARTHUR CLYNE.
President of the Aberdeen Society of Architects.

late Mr. F. W. Bedford, F.R.I.B.A., and practised in Leeds as Bedford and Kitson. Since Mr. Bedford's death in 1904 he has practised on his own account.

Mr. J. B. Wilson, president of the Glasgow Institute of Architects, was born and educated in Glasgow. He was a pupil and afterwards assistant with Mr. John Honeyman, L.L.O., R.S.A., and subsequently assistant with Mr. D. Thomson, F.R.I.B.A., and Mr. John Burnet, F.R.I.B.A. He commenced as an architect in Glasgow in 1878, and has been fortunate in obtaining a considerable general practice, among his works being more than sixty churches (including restorations and additions) in Scotland, England, and Ireland; board schools for several boards, several public halls (including Motherwell Town Hall), various mansions and villas, Ayr Asylum Hospital (for which a Gold Medal of Honour was awarded at the Health Congress at Vienna), business premises of various kinds, and recently, in conjunction with his son, the new building which the Institute of Engineers and Shipbuilders in Scotland have erected in Glasgow. For many years Mr. Wilson was a Fellow of the Glasgow Institute of Architects, and vice-president for last two years. He was elected president in March last. Mr. Wilson is a Fellow of Royal Institute, and a member of council. Apart from professional work, his principal interest has been in volunteering and rifle shooting, having done forty-two years' service as volunteer and Territorial. He retired last year from the command of the 7th Cameronians (Scottish Rifles), formerly the famous 3rd Lanark Rifles, retaining the rank of Colonel and honour of V.D. on retiral. He is also a J.P. for the City of Glasgow.

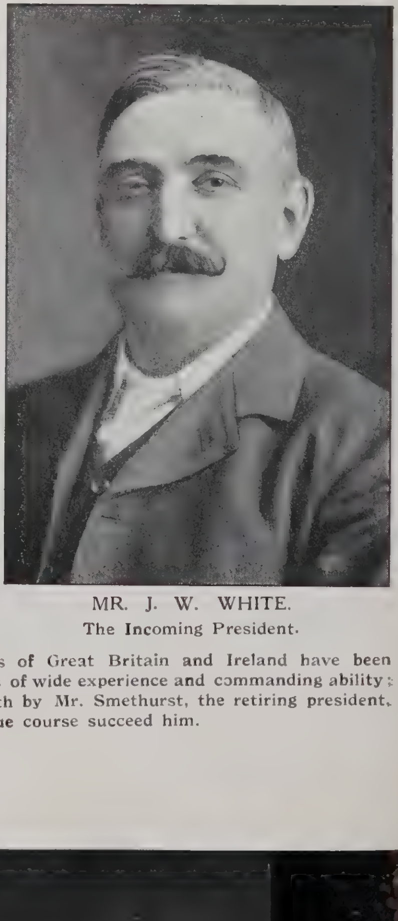
Mr. Albert E. Murray, the president of the Royal Institute of the Architects of Ireland, was born in 1849, and is a son of the late Mr. William George Murray, R.H.A., one of the best known Irish architects of his day. He is a member of the Royal Hibernian Academy of Arts, to which body he is a Professor of Architecture, and is also a Fellow of the Royal Institute of British Architects and of the Royal Institute of the Architects of Ireland, and a member of the Architectural Associations of both England and Ireland.

MR. PERCY SCOTT WORTHINGTON.
President of the Manchester Society of Architects.

Mr. Samuel Needham, president of the York and Yorkshire Society, was born at Leicester in 1868. He was educated at Loughborough Grammar School, and became later a pupil of the late Mr. R. C. Sutton, of Nottingham. He was estate architect to the late Lord Burton from 1890 to 1895, architect to one of the largest firms of brewers in the North of England from 1895 to 1903, at which date he resigned his position in order to commence private practice. Mr. Needham was vice-president of the York Society in 1904-5-6-7, hon. secretary in 1907-8-9, and president in 1909-1910-1.

NATIONAL FEDERATION PRESIDENTS.

COUNCILLOR S. SMETHURST, J.P.
The Retiring President.



MR. J. W. WHITE.
The Incoming President.

The National Federation of Building Trades Employers of Great Britain and Ireland have been singularly fortunate in securing a succession of presidents of wide experience and commanding ability; these qualities being possessed to an eminent degree both by Mr. Smethurst, the retiring president, and by Mr. White, who will in due course succeed him.

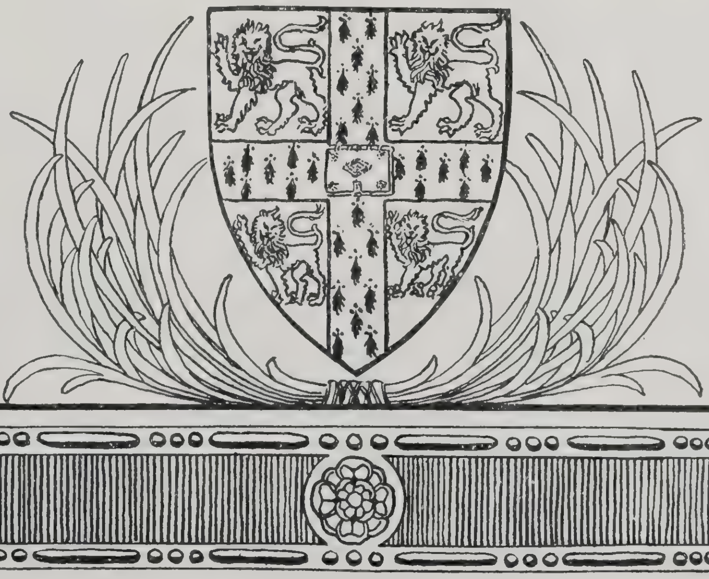
SPECIAL SECTION:

COLLEGE ARCHITECTURE

(OLD AND NEW)

AT

CAMBRIDGE



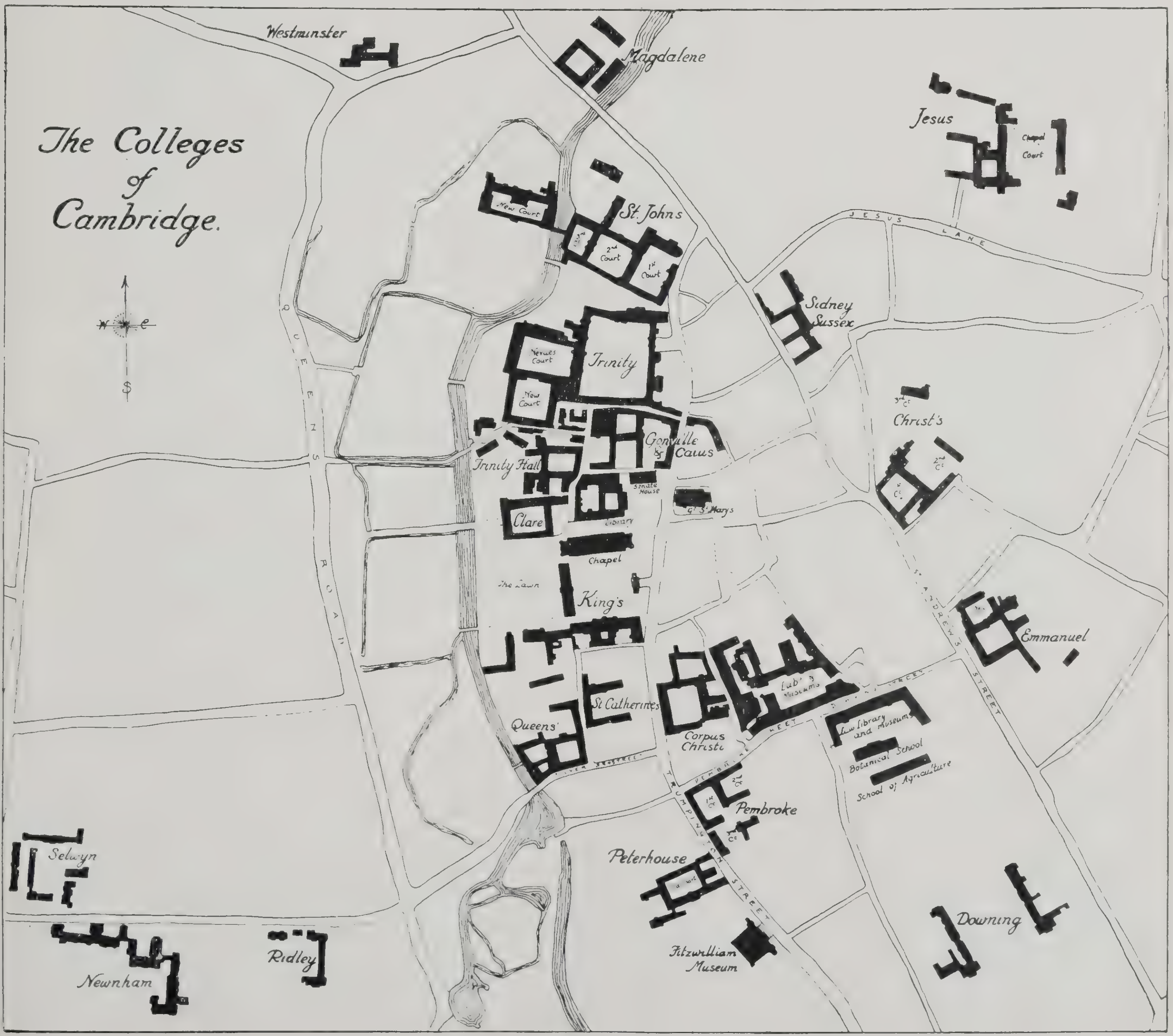
LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

COLLEGE ARCHITECTURE AT CAMBRIDGE.

As far as general architectural effect is concerned, Cambridge is at a disadvantage when compared with the rival university on the banks of the Isis. The reference to the river at once suggests one point of difference. The river at Oxford is of respectable dimensions, and adds a beauty to the scene; while "Camus, reverend sire," rightly described by Milton as "footing slow"—for it shows hardly any stream—reminds one of nothing so much as a canal gone crooked. As the Cambridge rowing men were supposed to write to the Harvard men, in a dog-Latin epistle in "Punch"—"noster est bestia fluminis"; and the visitor who first sees it wonders how any boating practice can be realised on such an apology for a river. A more important deficiency, from the architectural point of view, is that Cambridge presents no such coup d'oeil as is afforded by the High Street at Oxford, lined on both sides with a succession of noble buildings. At Cambridge the colleges are more or less scattered; fine architectural combinations exist, but they must be looked for; they do not force themselves triumphantly on the visitor as at Oxford; and indeed the approach to Cambridge from the railway is as mean and unpromising as any approach to a famous University city could well be.

But there are compensations. Cambridge requires to be known before one can realise its beauty. One effect indeed it has which is concentrated and obvious, namely: the series of wooded glades, known as "The Backs," which open upon one another along the left bank of the Cam, opposite the ground occupied by the older colleges. This is a bit of scenery peculiar to Cambridge, and in its way perhaps unique. The colleges of modern foundation, which are all on this side of the river, have been kept well away, so as not to intrude upon this piece of scenery. And connected with the "Backs" are the bridges which afford passage from them to various colleges on the right bank. Two of these small stone bridges, those of St. John's and Clare, are of rare beauty; Clare especially, with its three simple arches, its balustrades and stone ball finials to the piers.

The modern idea for the architectural treatment of a University would probably be, as we see in the designs for the new California University, to group the various classes of buildings symmetrically on either side of a centre line,



forming an avenue leading up to some dominant building, such as the Examination Schools, which had reference equally to all the colleges. At Oxford there is just that degree of collective grouping, though not symmetrical, which is suggested by the existence of a comparatively wide principal street. At Cambridge there is not even this incentive to collective grouping. There can hardly be said to be a principal street. The colleges, founded at various times, and under various conditions, lie about in all directions; and the architectural effects, of which there are many, have, as we say, to be looked for, or are come upon unexpectedly.

Yet Cambridge can hold her own, architecturally, in spite of this disadvantage. In the first place, she can boast of at least one building, King's College Chapel, which is unique in its class, and has not inaptly been called "The Parthenon of Tudor architecture." In its way, and as a representative building of a style, it is superior to any other single building either in Cambridge or Oxford. It is a finer representation of Tudor Gothic than even Henry VII.'s chapel, for the vault treatment is broader and simpler, and there are no tricks of construction in it. The repetition of parts in each bay may be called monotonous, but it is the note of the style, which depends for its effect on repetition and symmetry.

The Great Court of Trinity, with its picturesque rococo fountain in the centre, is the finest and most spacious of college "quads" and seems to agree with and to justify the proud position occupied by the College, a member of which is said to have referred to the members of other colleges with the apologetic phrase: "They too are God's creatures." For Trinity, despite the size of its Great Court, extends into three other quadrangles, one of them bounded by Wren's masterly design for the library block.

The gateways of the Cambridge colleges present a fine variety of dignified treatment; the best, perhaps, being those of the type of late Gothic, with angle turrets, as at Trinity, St. John's, and Christ's Colleges. This late Gothic form seems indeed the ideal type for a college gateway. The "Free Classic" Gate of Honour of Caius College, which has been so much drawn and engraved, is, we think, overrated; the upper octagonal turret has little relation, architecturally or structurally, with the lower portion, and the design is odd rather than successful.

Generally speaking, however, the charm of the Cambridge college buildings resides mainly in the work of that period when the influence of the Renaissance had just commenced, while the late Gothic feeling had not quite died out; when revived Classic had not yet become an academical convention; when mullioned windows alternated with unobtrusive pilasters; a style of building which presented a sober and quiet grace that seems all the more alluring from its partly faded appearance in buildings which two or three centuries have weathered out of their original sharpness of line. Cambridge abounds in examples of this kind; perhaps none so charming as the river front of Clare College, as seen from the bridge, rising white above the foliage, and contrasted with the darker mass of the neighbouring King's College. It would be difficult to find a more delightful architectural picture than this.

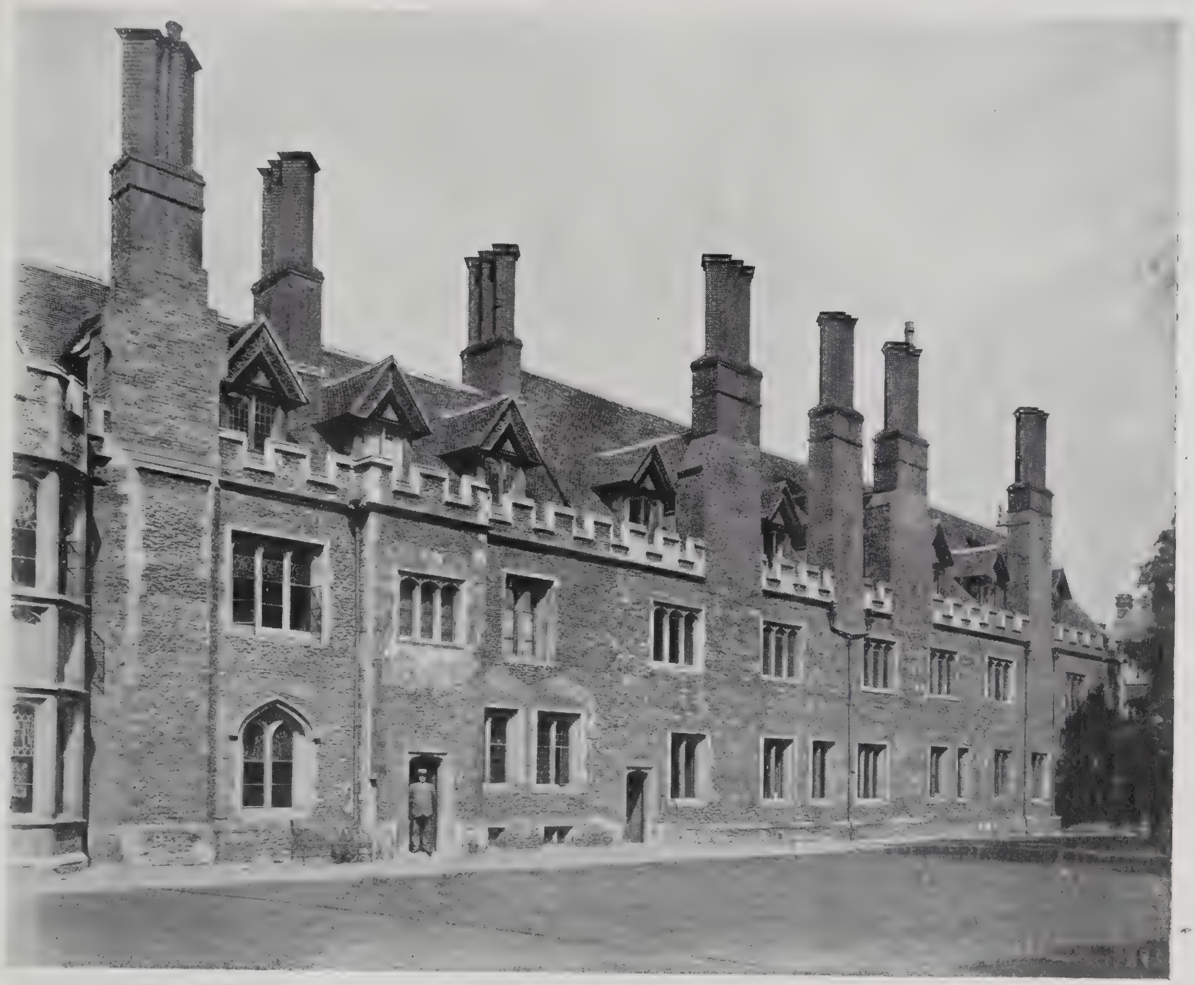
With regard to the numerous changes that have been wrought in the appearance of the Cambridge colleges, much might be written. The university being a live organism, not a dead body, it is inevitable that alterations and additions be made to suit the changing conditions, but we cannot forgive some architects of the eighteenth and nineteenth centuries, who, with supreme conceit and wanton destructiveness, pulled down much old work of delightful character, and replaced it with buildings that still remain as a dull disfigurement to not a few of the colleges. In this connection especially James Essex and William Wilkins come to mind, for they have been the arch-offenders at Cambridge. It is difficult to ascertain all that Essex did, but certainly he was destructively busy at Queens', Peterhouse, and Sidney Sussex—to mention three prominent instances—while of Wilkins's work we have such disinspiriting examples as the first court of Corpus Christi, and the "pepper-box" gateway and south range at King's.

The mid-nineteenth century, which saw the commencement of the all-engulfing Gothic Revival, was less disastrous, though many of the buildings of that era—as, too, of a later date—fall far short of the standard. Sir Gilbert Scott built the new chapel which overpowers the first court of St. John's, and at the same college Rickman put up his pretentious new court and "bridge of sighs"—one other example of the curious fact that a man may write with understanding about architecture without being able to translate that quality into work of his own hands. Many other colleges similarly had the Gothic thrust in upon them. The late Mr. Alfred Waterhouse was not happy in his work at Cambridge, as the new buildings at Pembroke and at Gonville and Caius bear witness; and not much delight is experienced in gazing upon the front which the late Mr. J. L. Pearson added on the west side of the University Library. In fact, one does not thank the Gothic Revival for most of its gifts to Cambridge. Two men, however, must be excepted—the late Mr. George Gilbert Scott and the late Mr. Bodley; the former for the fine new court he added to Pembroke College, and the latter for his beautiful chapel at Queens', and the noble buildings (part of a new court never completed) which he designed for King's; no modern architect, indeed, has done work at Cambridge equal to that of Mr. Bodley, for here, as elsewhere, he seemed always to catch the spirit of the place and enshrine it in his own individuality.

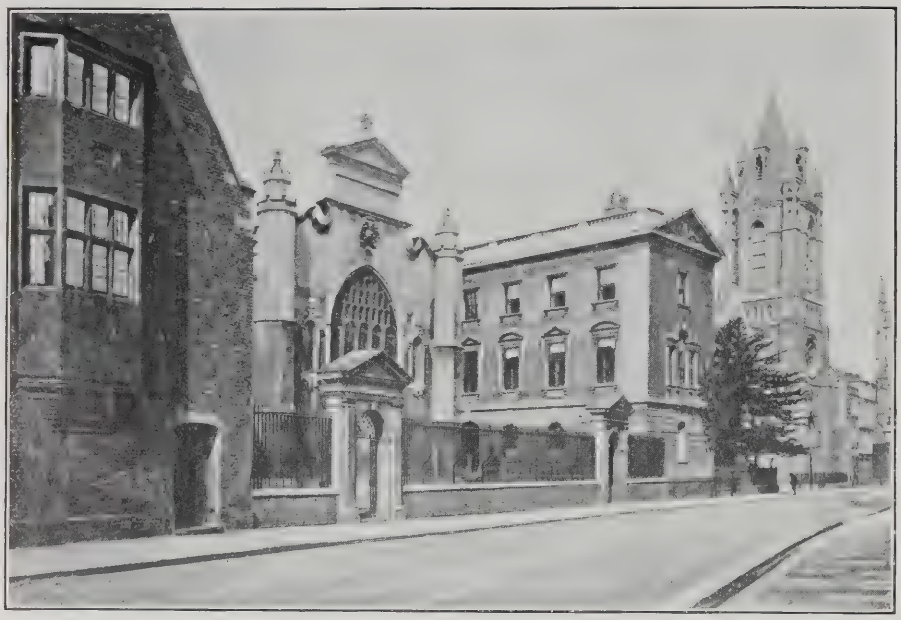
Coming to a still later time, right up to the present, one has to note the new medical schools in Downing Street by Mr. E. S. Prior, and, opposite, the long range of buildings by Mr. T. G. Jackson, comprising the Law Library in the centre, the Sedgwick Museum on one side, and the museum of ethnology (now in course of completion) on the other. To the south of this range is Mr. Marshall's sturdy-looking Botanical School and still further south the new building for the School of Agriculture which Mr. Arnold Mitchell has recently completed. At Gonville and Caius is the new range of chambers by Sir Aston Webb and Mr. E. Ingress Bell, from whose designs also are the new buildings in the third court of Christ's College (an addition to the block of the late Mr. J. J. Stevenson), in the Provost's Court at King's, and fronting the river at Magdalene—this last being a very effective piece of work carried out in dull-coloured Dutch bricks. At Caius Mr. Warren has remodelled the dining hall, introducing new panelling and obliterating some of Salvin's work. At Trinity Hall a red brick block, of quiet character, has been erected from designs by Mr. Hastwell Grayson; and equally new is the building, comprising lecture rooms and music hall, which Mr. Leonard Stokes has added to Emmanuel College; while latest among new buildings is the block containing literary lecture rooms and departmental library which is being erected on a site at the rear of Benet Street from designs by Messrs. Hubbard and Moore.

PETERHOUSE COLLEGE.

As Merton is the oldest college in Oxford, so Peterhouse—or, more strictly, St. Peter's—claims that honour in Cambridge, having been founded in 1281 by Hugh de Balsham, Bishop of Ely. Of the early buildings, however, scarcely anything remains, this more especially because that spoiler of mediæval work, James Essex, was busy here in the eighteenth century. The history of the buildings as they exist begins with Dr. Andrew Perne's library, in the south range, which was extended at a later period up to Trumpington Street, terminating in a delightful brick gable and oriel (a view of which is shown on the next page). This was carried out in 1632. Perhaps the chief feature of Peterhouse, however, is its chapel, erected at the same period by Bishop Matthew Wren, uncle of Sir Christopher, to whom the building is sometimes erroneously attributed. The chapel is set between the north and south wings, with which it is connected by an arcade on either side, carrying a gallery above. The design is a curious mixture of Renaissance and Gothic, rather stilted in its general effect. Within the chapel the stained-glass windows claim chief attention: in particular the fine east window—a Flemish work contemporary with the building—and the windows by Professor Aimmüller, of Munich, which are astonishing specimens of their art. In Georgian days both Wren's cloisters and Perne's library were threatened with demolition, Sir James Burrough, of Caius, having a great idea of replacing them with buildings of his own design. Happily, that catastrophe was averted through lack of funds, and the only part of the scheme which ever reached fruition was the northern wing next to the Church of St. Mary-the-Less. Burrough, however, though he receives his meed of vilification, was an architect of far higher talent than Essex. He was greatly influenced by Gibbs, whose taste is reflected in these buildings at Peterhouse. But Essex did his best to spoil the result, and later, in the first quarter of the nineteenth century, a new western court was built in the style of Gothic then thought to be correct. Later came the Gothic Revival itself, but with healing rather than destruction in its wake; the hall and com-



PETERHOUSE COLLEGE: CHIMNEYS OF SOUTH RANGE, FACING FELLOWS' GARDEN.

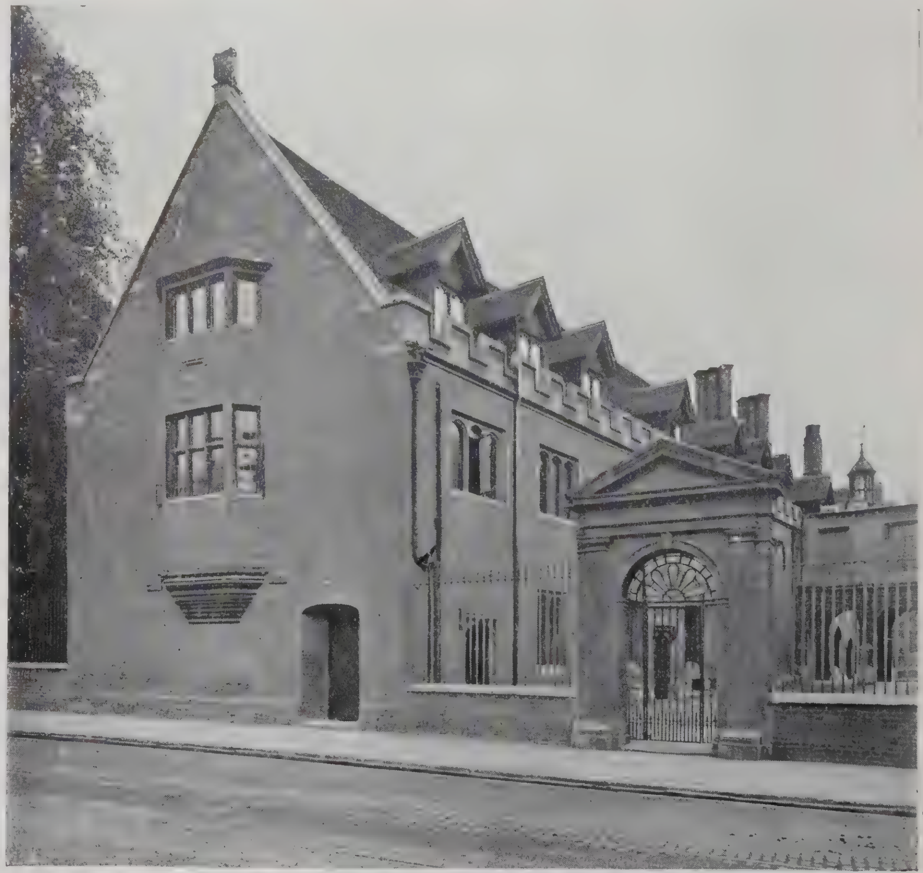


PETERHOUSE COLLEGE: VIEW FROM TRUMPINGTON STREET.

bination room having been rebuilt by George Gilbert Scott in 1870, and embellished with some good stained glass by Burne-Jones and William Morris. As has been said, "the bright oriel of the hall is especially beautiful, and the small figures of poets and of the good women of Chaucer's dream, in the windows of the comfortable parlour, share, with the chapel glass, the impartial admiration of the visitor." Peterhouse, though the oldest of the Cambridge colleges, was, curiously enough, the first to adopt electric light—this through the incentive of one of the most notable of modern men associated with its history, the late Lord Kelvin.

The reference above to James Essex and Sir James Burrough may very well be extended by some particulars taken from Mr. Beresford Chancellor's "Lives of the British Architects." Burrough became Master of Gonville and Caius College in 1754, but long before that time he had applied himself to the study of architecture, and he appears to have had something to do with alterations and rebuilding at nearly every college in Cambridge. His earliest work seems to have been the superintending of the refacing of the older courts of Gonville and Caius, and the decoration of its chapel, which was carried out in 1719. Nine years later he designed a cupola for the college, and a little later he converted the old hall of Queens' into an "Italian chamber." Burrough, in fact, seems to have been bent on Italianising everything he touched. This is particularly evident in Peterhouse. About 1740 he did his best to spoil the University church by fitting the chancel arch with a gallery known as the "Throne" (where seats for the Vice-Chancellor and "Heads" were placed) and by other inappropriate additions. In 1769 he designed the chapel of Clare, and about the same time the new north and west buildings at Emmanuel, which he had planned some years earlier, were erected under the superintendence of Essex. Some of his work was not so inherently vicious in design, but Burrough's outstanding fault was his iconoclasm. He was badly bitten by the mania, so prevalent in the eighteenth century, for destroying existing buildings simply because they did not agree with certain rules laid down in the text-books—productions which, although containing many excellent rules, were as fatal to a sense of reverence for older work as the pattern-books of the sixteenth century had been to the development of originality.

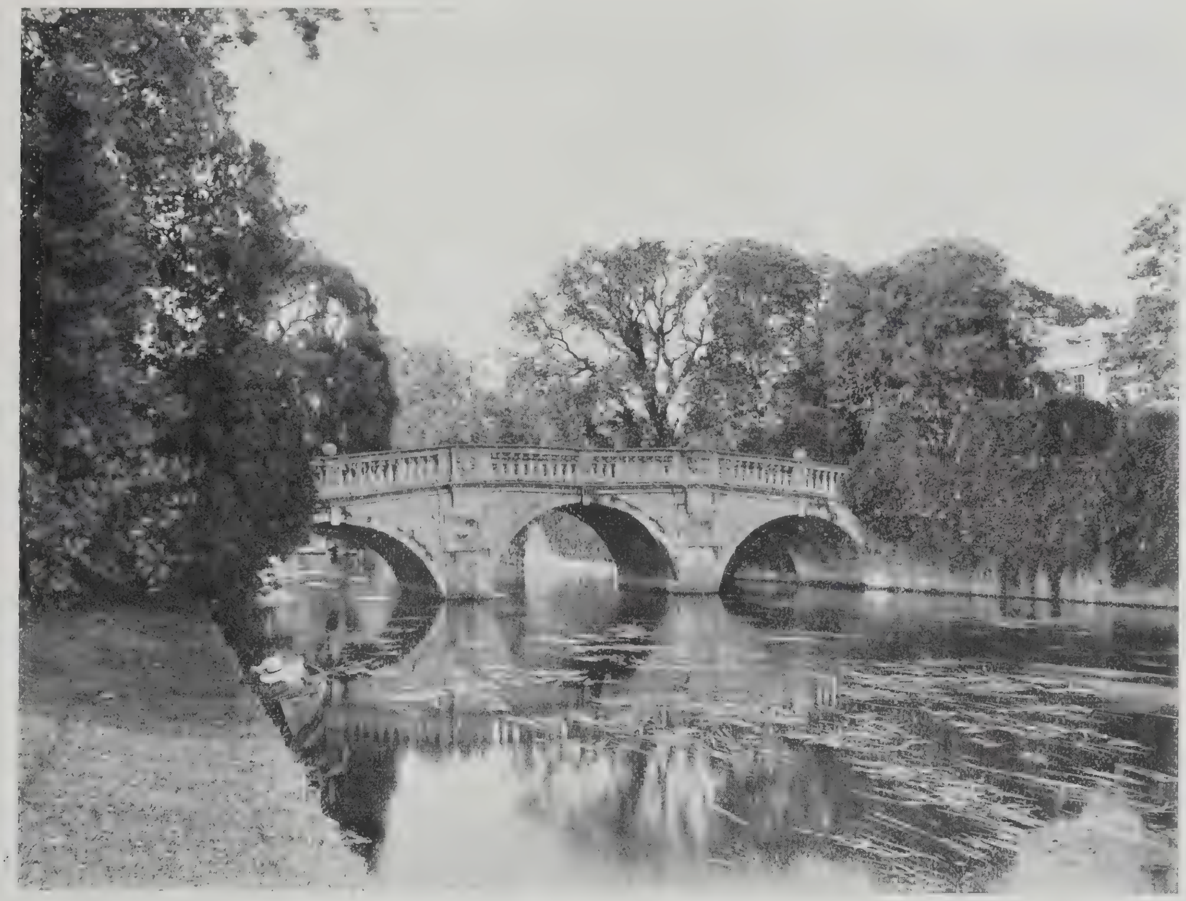
Burrough's architectural sins were numerous enough, but those of Essex were far more heinous. From 1770 to 1776 he did a quantity of work, chiefly bad; half a dozen of the colleges suffering by his "improvements." But it is not so much for what he added as for what he destroyed that the charge rises against him. In 1771 he was busy at Trinity, and two years later he modernised the chapel of Queens', and rebuilt the portion known as Erasmus's Court. In 1774 he refaced the south side of St. John's quadrangle, and at the same time he was permitted to disfigure the east end of the chapel of King's by some indifferent wood-carving. Finally, in 1776, as his last attempt at "beautifying" Cambridge, he erected the new chapel at Sidney Sussex College.



PETERHOUSE COLLEGE: BAY AND GABLE, TRUMPINGTON STREET.

CLARE COLLEGE.

The buildings of Clare College are particularly interesting as exemplifying three distinct phases of Renaissance work. The block on the eastern side of the quadrangle (see page 25) is of the early Stuart period, exhibiting all the familiar characteristics, as also does the south front, facing the lawn of King's. The south range was commenced in 1640 and finished in 1642. It belongs therefore to the time of Charles the First and is what is called "Jacobean." Certain parts of it, however, were altered in 1760, notably the windows, which originally had pointed heads. In the middle of this range is a unique specimen of a staircase, probably part of the work carried out in 1641.



CLARE COLLEGE BRIDGE.

The west or river front is later, dating from Charles the Second and James the Second, its treatment, with pilasters running up through two storeys, being purely Palladian, while showing within the quadrangle a face in keeping, more or less, with the rest. But the northern side of the court is good, solid, ugly Queen Anne work, with a sash-windowed hall that the famous Clare creeper is not able to hide.

Nothing occurs to show who made the design for the beautiful west range of Clare College, fronting the river. John Westley was the builder, Francis Wright the carpenter, and Thomas Grumbold and his son William, and others, appear as working masons, receiving daily wages. The work was carried on either by that system, or by small bargains for particular jobs; the sums thus agreed upon being paid usually by instalments, and the workman either signing his name or making his mark on the entry of the payment of the account.

Clare College is fortunate in possessing some remarkably good ironwork in its gates, as well as the finest of the series of little bridges that span the river at the "Backs." With regard to the former it may be stated that the gates on the entrance front, next Trinity Hall Lane, were erected in 1714, at the time the fore court was formed, the piers themselves being earlier (1673); the latter are particularly good in design, but those at the end of the avenue leading to the "Backs" are even nobler, and exhibit a feature common to several Cambridge colleges, namely, the gadrooning of the finials. The bridge of Clare was built in 1638—1640, Thomas Grumbold being the master-mason responsible for its design. (The Grumbolds did a great amount of work at Cambridge, and though the entries in the college accounts are not at all uniform in the spelling of the name—"Grumball" being frequently set down—it is evident that they were all master-masons of the same family.) This bridge gave access to the

CLARE COLLEGE: SOUTH FRONT, FACING KING'S COLLEGE LAWN.

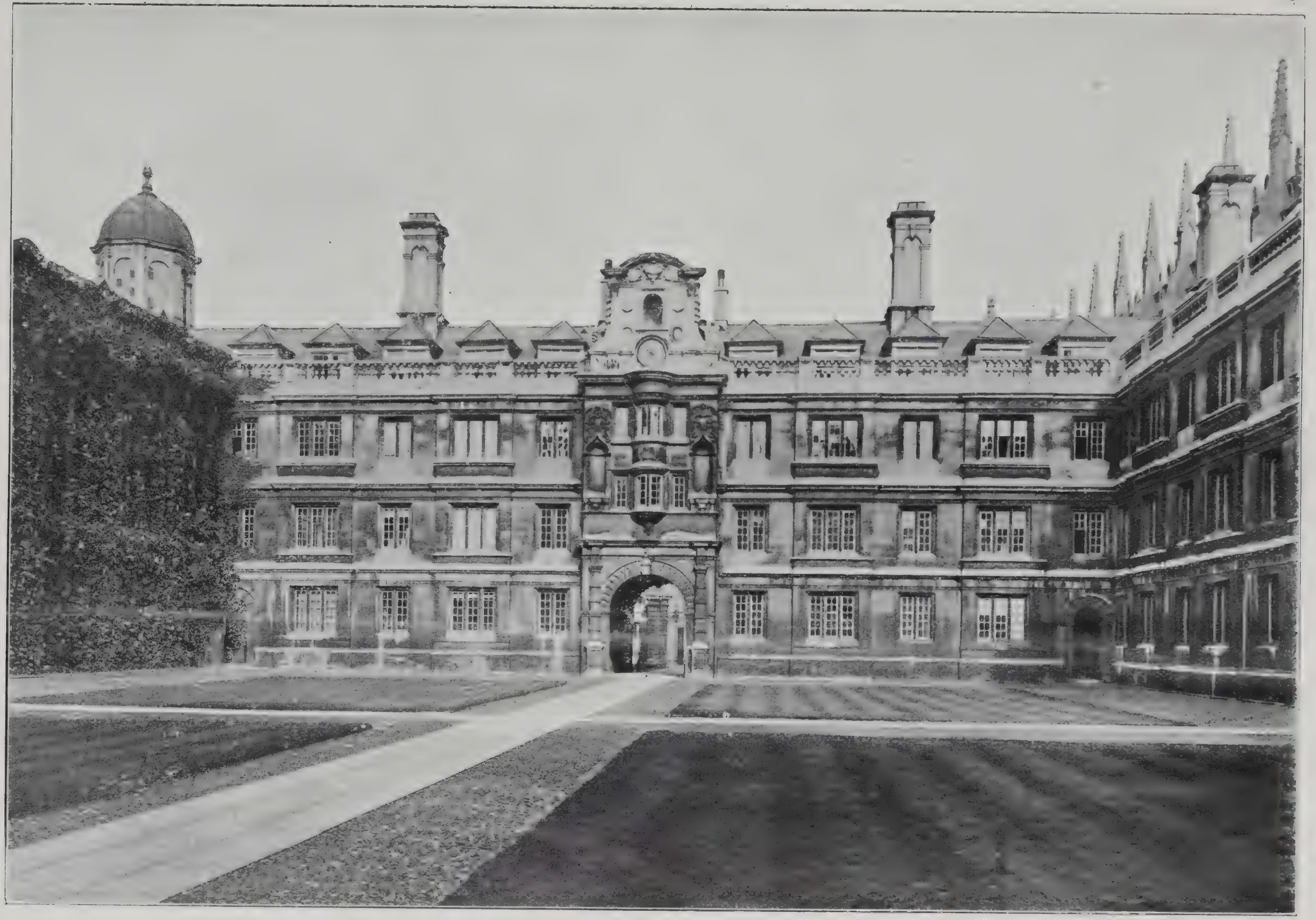
Butt Close—a piece of land on the west side of the river—which helped to cause a lively quarrel between Clare and King's Colleges at the commencement of the seventeenth century.

The chapel was designed by Sir James Burrough, Master of Caius, but, he dying in 1764, three years before it was finished, the work was completed by James Essex, who, in fact, appears from the accounts to have assisted from the beginning, and to have made the working drawings. It is a very favourable specimen of Burrough's architecture, in an Italian style, of course, and the octagonal ante-chapel lighted from a well-designed cupola is an original feature. It was consecrated in 1769. Since that date very little alteration has taken place. The roof is concealed by a coved ceiling of stucco-work. The apsidal east end contains the original wooden altarpiece, consisting of four fluted Corinthian columns supporting an entablature and pediment. Beneath is a picture of the Annunciation by Cipriani. The organ was brought from the church of Honington, in Lincolnshire.

Considerable additions were made to the hall in 1870-72, under the direction of Sir Digby Wyatt; these comprising a new plaster ceiling and a large fireplace on the north side, ornamented with oak figures supporting a bust of the foundress. Stone panels, pierced with quatrefoils, were inserted in the lower part of the windows in order to provide some portions that could be opened, and plate glass was substituted above for the old square panes—an alteration not at all commendable. The woodwork at the same time was enriched with arabesques and festoons of flowers and fruit, and the walls were decorated with patterns in colour.

CLARE COLLEGE: FORECOURT GATE AND PIERS.

CLARE COLLEGE: GATE AND PIERS AT "BACKS."



CLARE COLLEGE: VIEW OF QUADRANGLE, SHOWING EAST RANGE.

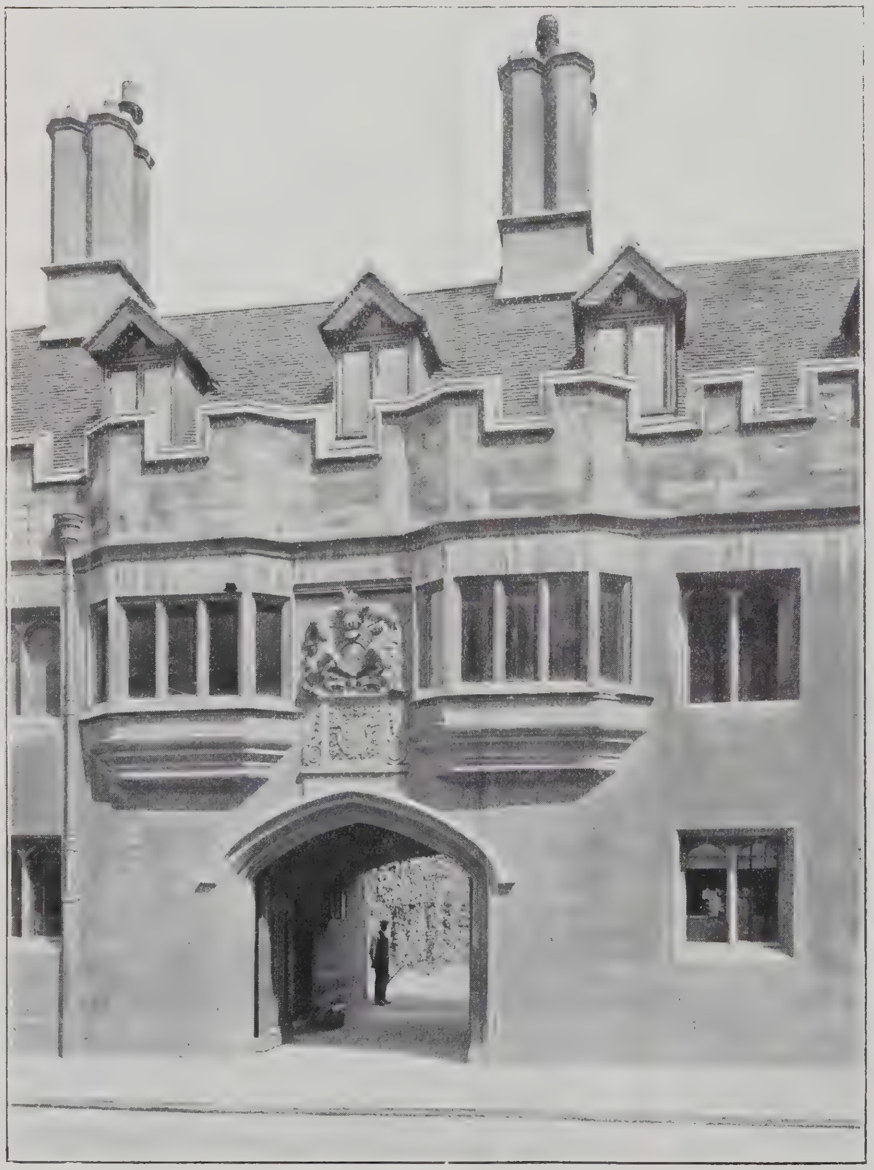
PEMBROKE COLLEGE.

Pembroke is one of the four colleges founded in the middle of the reign of Edward the Third. It was fortunate in escaping Essex and Wilkins, but came in later for almost equally disastrous attentions. The front next Trumpington Street was refaced in 1712, the original design being closely followed, but the later introduction of plate glass windows has greatly marred the general effect. The detail is crude, but still possessing much charm.

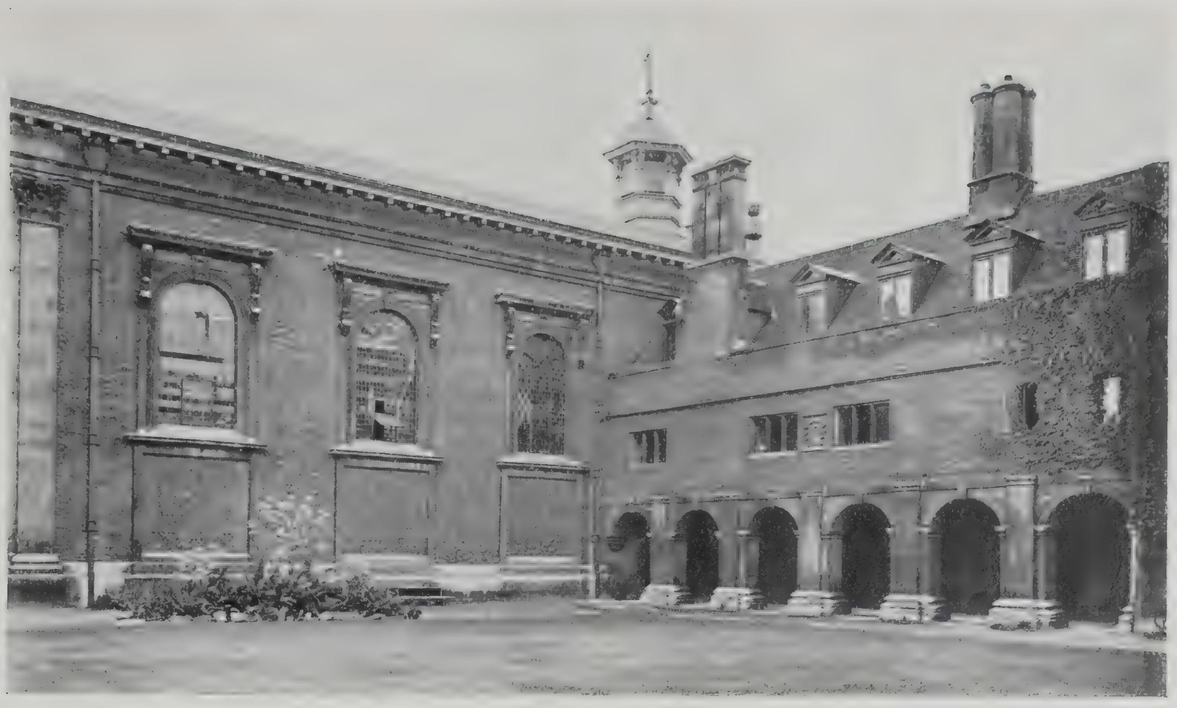
The oldest remaining part of the college is the "Ivy Court," behind the hall, a modern Gothic erection which is a very poor exchange for the two-storied hall and library it superseded. Modern Gothic, too, flaunts itself in the new buildings by the late Mr. Alfred Waterhouse, next the chapel, and in the library and clock tower by the same architect. The present chapel, at the south-west corner of the first court, was built by Bishop Wren after his release from the Tower, the architect being his nephew, Sir Christopher. It was dedicated on September 21st, 1664. Within the building the chief feature is the woodwork, comprising oak panelling embellished with carved swags and cartouches, and a fine organ screen with coupled Corinthian pillars at the west end. There is a range of stalls on either side, and two returning on each side of the door next the organ screen. The original woodwork was carried out by "Cornelius Austine and Richard Billopps and William his sonne of Camebridge, Joyners." This was extended in 1880, when the chapel was lengthened by Sir George Gilbert Scott, who introduced an arch supported on marble columns at the east end. On the completion of the chapel in 1664 it was connected with the college by a range of chambers and a cloister on the west side of the court. This building, known as Sir Robert Hitcham's cloister, was brought to its present aspect by Mr. George Gilbert Scott in 1881, who also was responsible for the very successful new court on the east side, where the architect has caught the spirit and detail of the old work. Adjoining this court, on the north side, next Pembroke Street, a range of chambers has recently been completed from designs by Mr. Caröe.

In the old library at Pembroke College is the curious ceiling illustrated on page 28. When first built in 1360 this room served as the chapel, and it continued to be so used until Wren's chapel was completed. For some years subsequently the room appears to have been disused, but in 1690 it was converted into a library, and the walls were then faced with brick and larger windows put in. The ceiling bears date 1690.

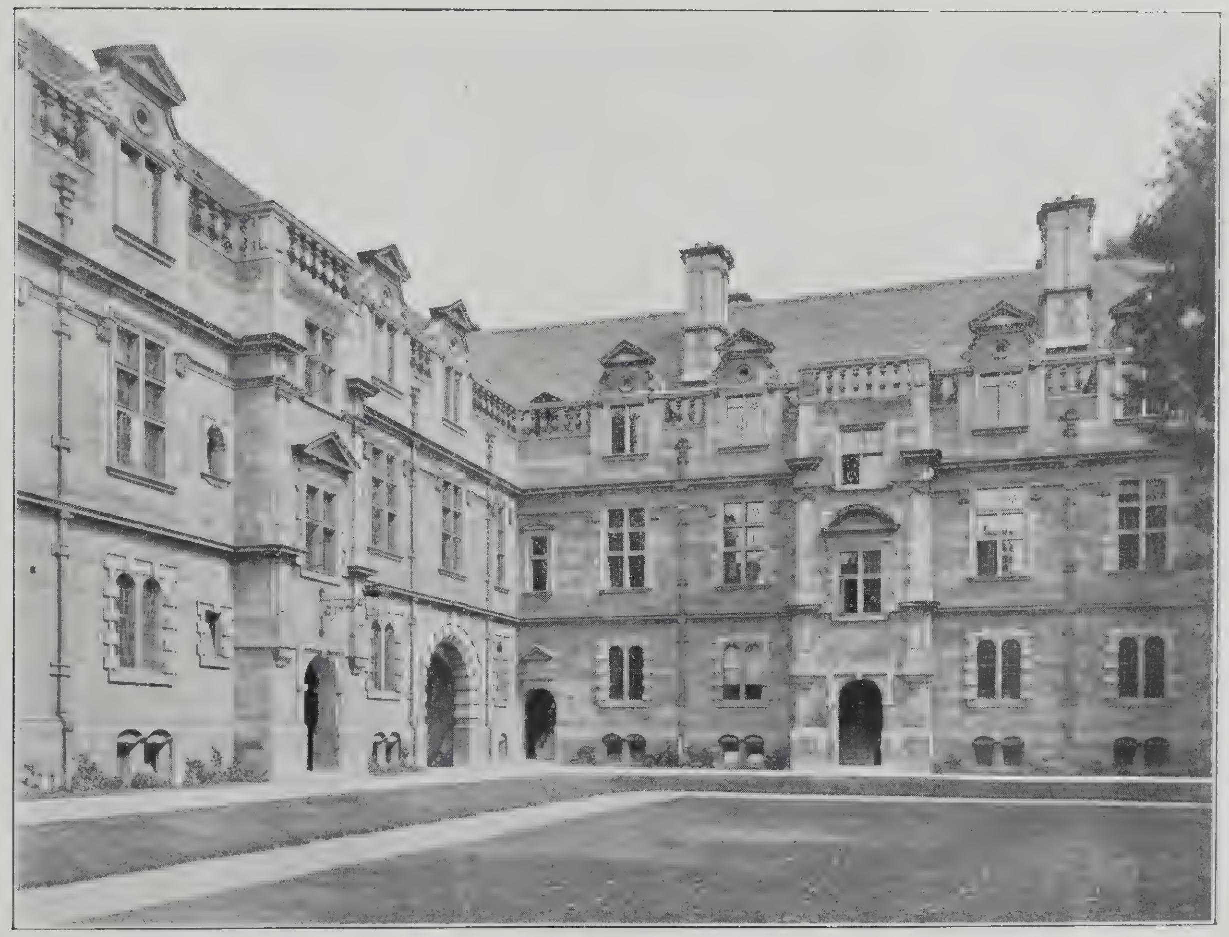
A charming feature of Pembroke College is the master's garden. This was famous in the middle of the eighteenth century on account of the waterworks set up by the then master, Dr. Roger Long, these supplying "a beautiful and large Bason in the middle of the Garden, and wherein he often diverts himself in a machine of his own contrivance, to go with the Foot as he rides therein." The garden is approached from the back court through a gateway which shows a curious combination of Renaissance features.



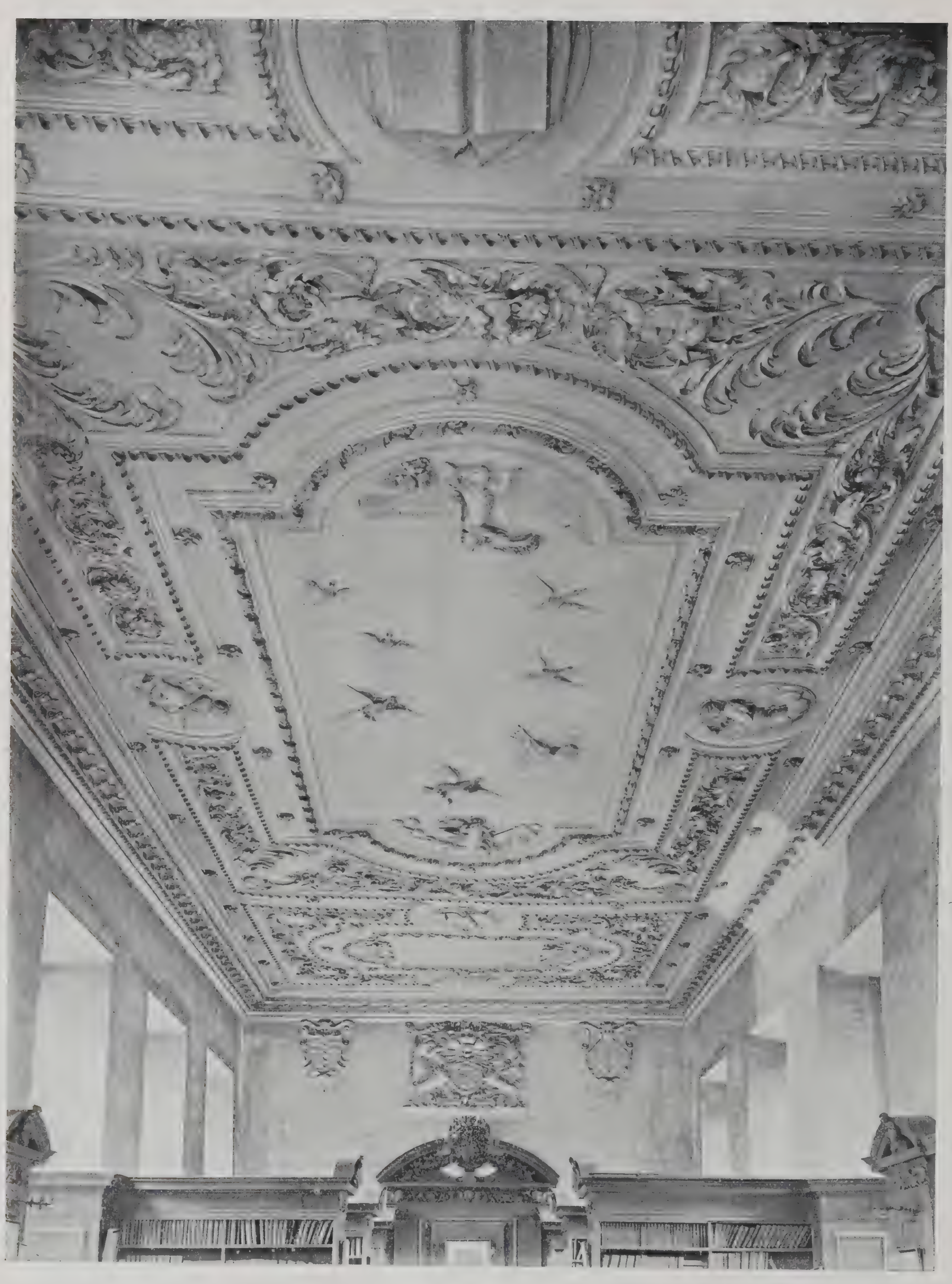
PEMBROKE COLLEGE: ENTRANCE GATEWAY.



PEMBROKE COLLEGE: VIEW IN FIRST COURT, SHOWING NORTH WALL OF CHAPEL AND SIR ROBERT HITCHAM'S CLOISTER.



PEMBROKE COLLEGE: NEW COURT. GEORGE GILBERT SCOTT, ARCHITECT.

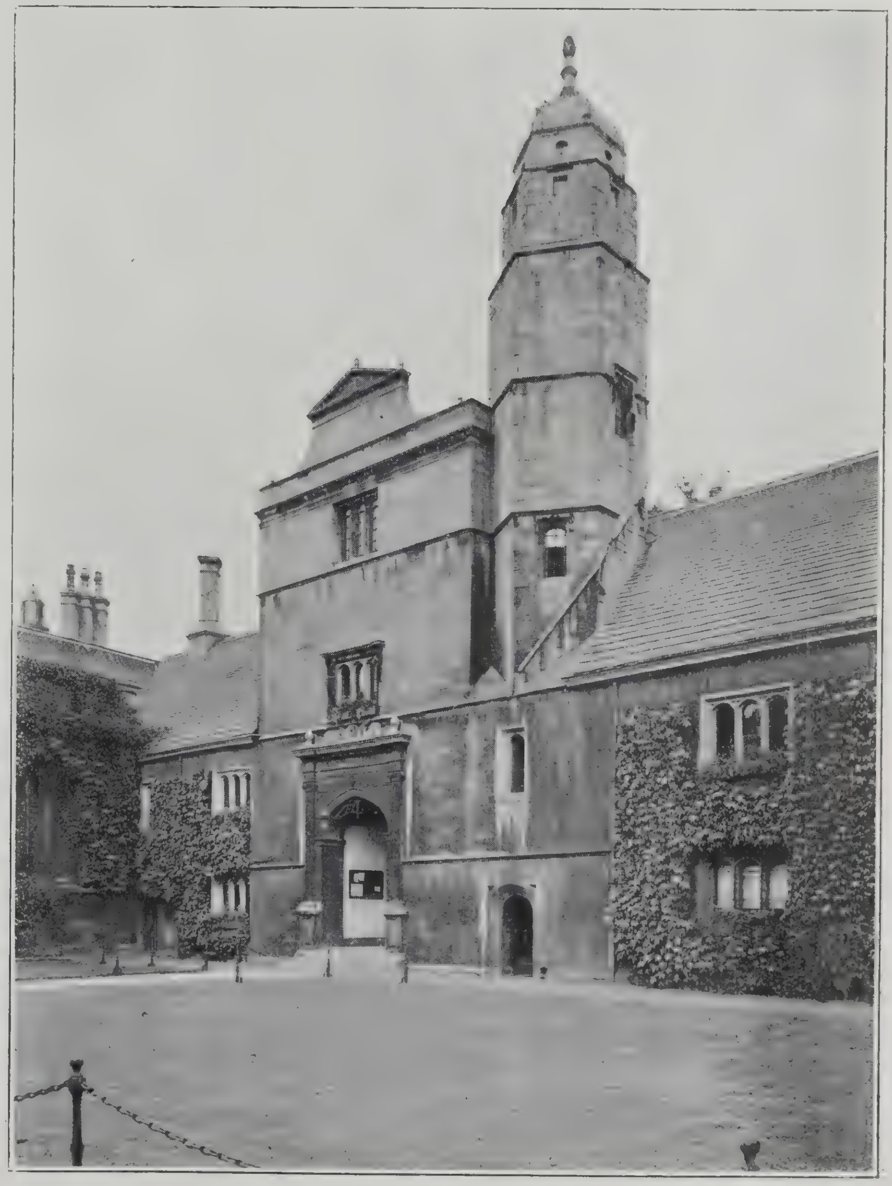


PEMBROKE COLLEGE: CEILING IN LIBRARY.

GONVILLE AND CAIUS.

Very great changes have been wrought in the arrangement of the buildings of Gonville and Caius College since its foundation. As it exists, the college may be said to be split up into two halves, one of which, next Trinity Street, comprises the New Court, while the other, to the west, includes Gonville Court, which represents the ancient college removed here in 1353 from King's Parade. Of the alterations which Dr. Caius made in the sixteenth century, a great deal has been swept away, or replaced, in the days of Queen Anne, and, later, by Burrough and his fellow spirits; while, in the nineteenth century, Salvin built the hall, in 1854, and in 1867 Mr. Waterhouse entirely rebuilt the additions made by Dr. Perse in 1617. But there still remain the three famous gateways of Dr. Caius. The college was entered by a simple archway, inside which were detached columns bearing an entablature with the word *Humilitatis* carved upon the frieze. (This gateway was removed in 1868, and now stands in the master's garden.) Then came the Gate of Virtue, with the word *Virtutis* inscribed on the frieze on the eastern side of the arch, while upon the western side (shown in the view on this page) was the inscription: "10, Caius Posvit Sapientiae 1567," from which the gate is sometimes —erroneously—described as the Gate of Wisdom. Last of all came the Gate of Honour (see page 31) leading appropriately to the Senate House and Schools. This was finished in 1574, one year after the death of Dr. Caius. The architect was Theodore Have, of Cleves, in the Rhenish provinces, who also remodelled the chapel between this and Gonville Court, and probably designed the sarcophagus in which Dr. Caius was buried. The Gate of Honour exhibits a most graceful admixture of Renaissance and Gothic details in the lower portions, but is much altered from its original appearance. Below the lowest cornice, at each angle, a tall pinnacle reached nearly to the second cornice. More pinnacles sprang from the juncture of the central stage with the hexagonal tower, and on each side of the hexagon was a sundial, and at its apex a weather-cock in the form of a serpent and dove. The view of this gateway, it will be noticed, shows the Senate House, King's College Chapel, the Woodwardian Museum, and the University Library, thereby illustrating examples of architecture of each century from the fifteenth downwards (excepting the seventeenth).

Of the new buildings at Gonville and Caius College, those by Sir Aston Webb and Mr. E. Ingress Bell, and the remodelling of the hall by Mr. Edward Warren, call for notice. The former comprise the St. Michael's Court buildings, which were erected in 1904 and extend from the east side of Trinity Street along Rose Crescent in the form of a right angle. The buildings provide forty-six sets of keeping rooms, the variation in the shapes and sizes of which has expressed itself in the elevations, giving, it is thought, additional interest to the work. The buildings are of brick faced with Weldon stone ashlar, and dressings of Ancaster stone. The statues in the niches on the fronts to Trinity



CAIUS COLLEGE: GATE OF VIRTUE.

Street and Rose Crescent are by Mr. W. S. Frith.

The alterations to the hall at Caius College carried out from Mr. Warren's designs have been completed during the past year. The old dining hall was built from Salvin's designs in the mid-nineteenth century. The windows, which reached down to within 6ft. of the floor, have been shortened, the heads of the side windows squared, and the sides of the hall wainscotted with English oak panelling having a carved frieze. Across the north end of the hall have been placed a gallery and screen, also in English oak, while behind the "high table" at the opposite end a high daïs panelling divided by carved pilasters has been placed. To the roof has been added carved heraldry and bosses, emblazoned and gilt. The plaster ceiling has been superseded by one of boards, subdivided by broad shallow ribs, with carved and gilded bows on their intersections. The oak is all English, of fine quality, slightly ammonia-stained and waxed. The approach staircases have been altered and wainscotted in oak, and several new windows have been inserted in the walls. The old staircases, which unite on a common landing near the vestibule of approach from Gonville Court, were extremely steep, the steps of stone, and the walls merely plastered. The new stairs are of easier "going," in concrete, with teak treads and risers. Further alterations made to the College comprise a junior common room, long and low, with oak panelling, and chimneypieces of oak and stone, on the ground floor; the modification of the small fifteenth-century dining hall (which had been cut up and partitioned off into living rooms, in the last century) as an additional college library; and the construction of bathrooms, lavatories, and heating chambers in a newly formed basement.

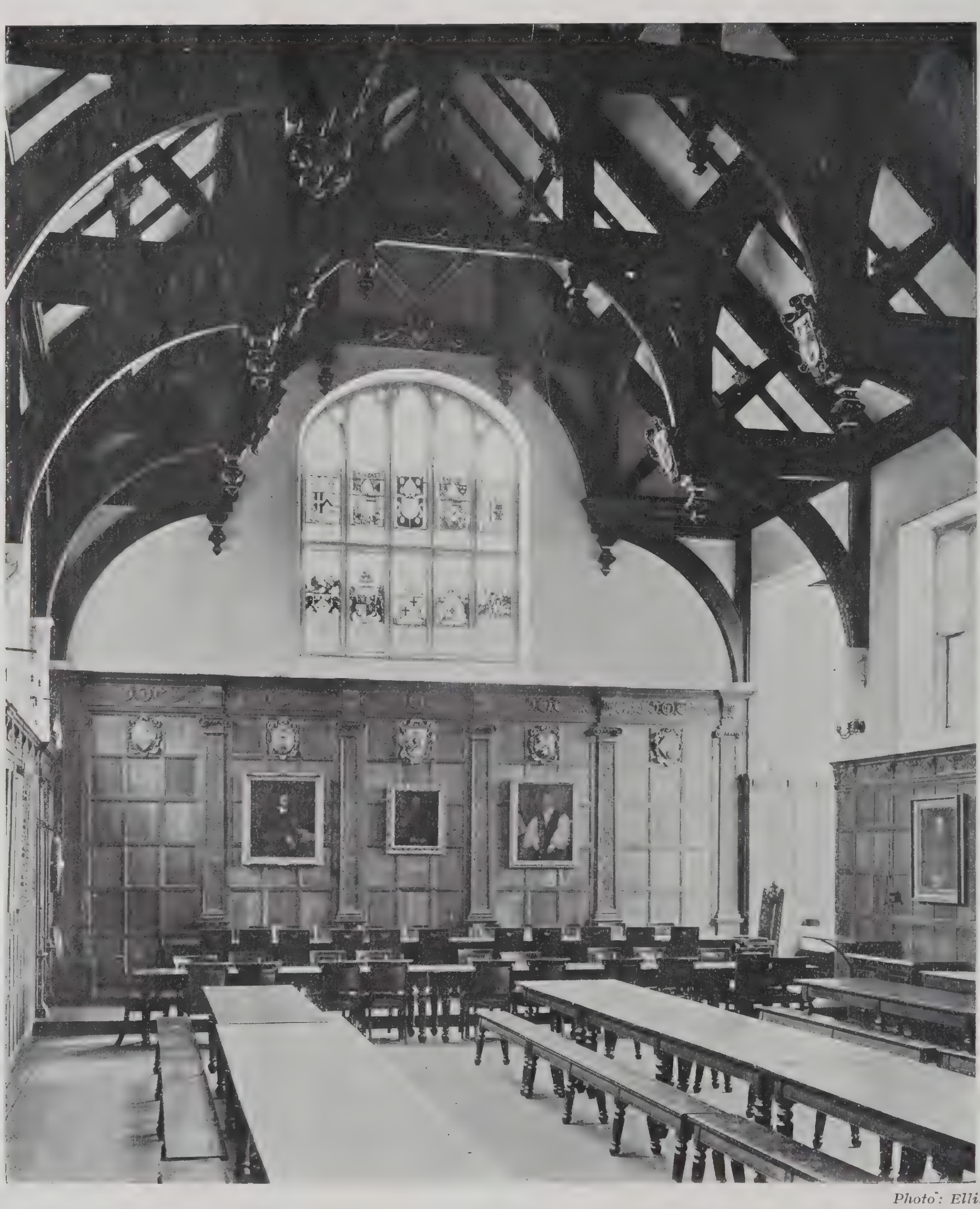
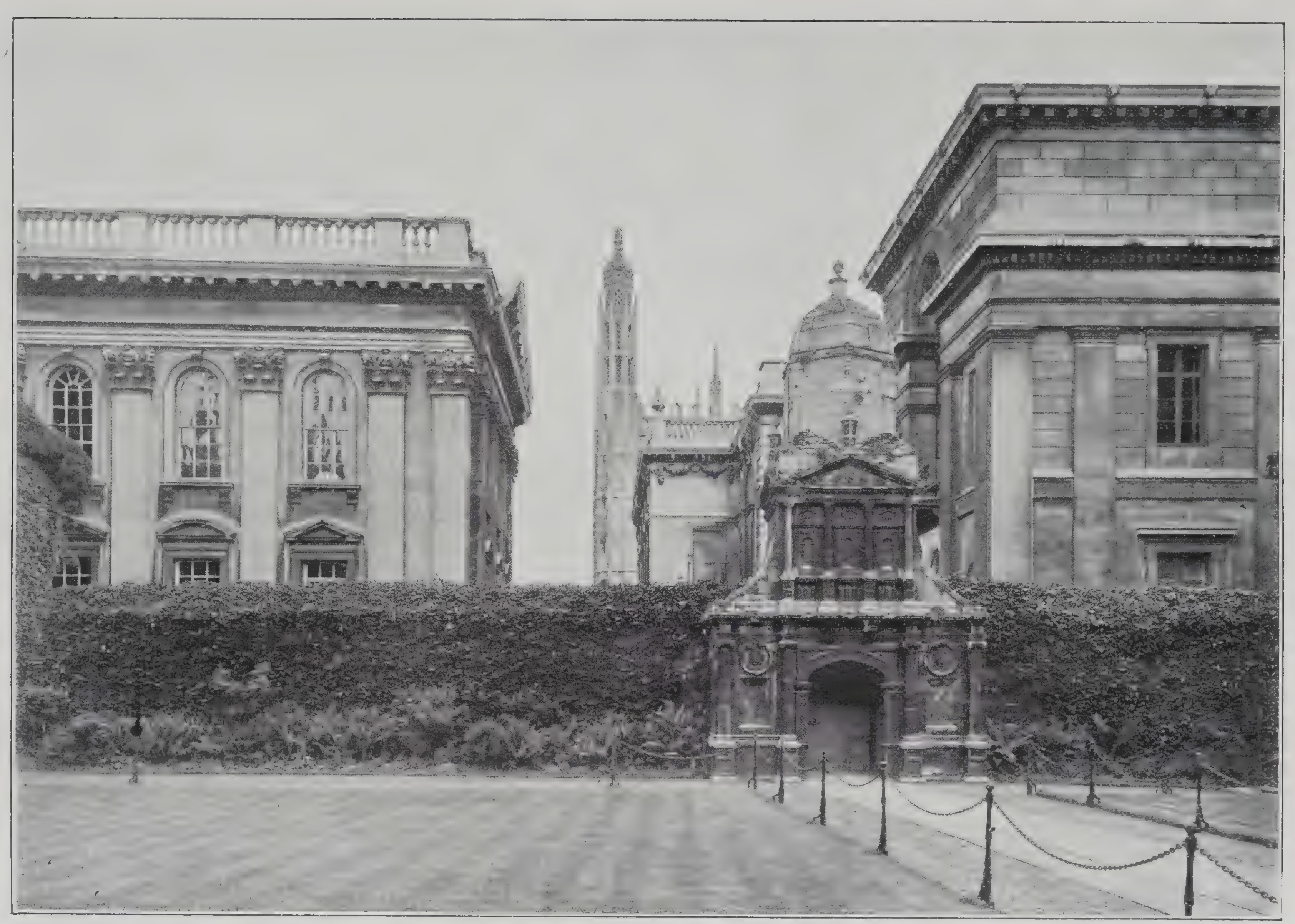
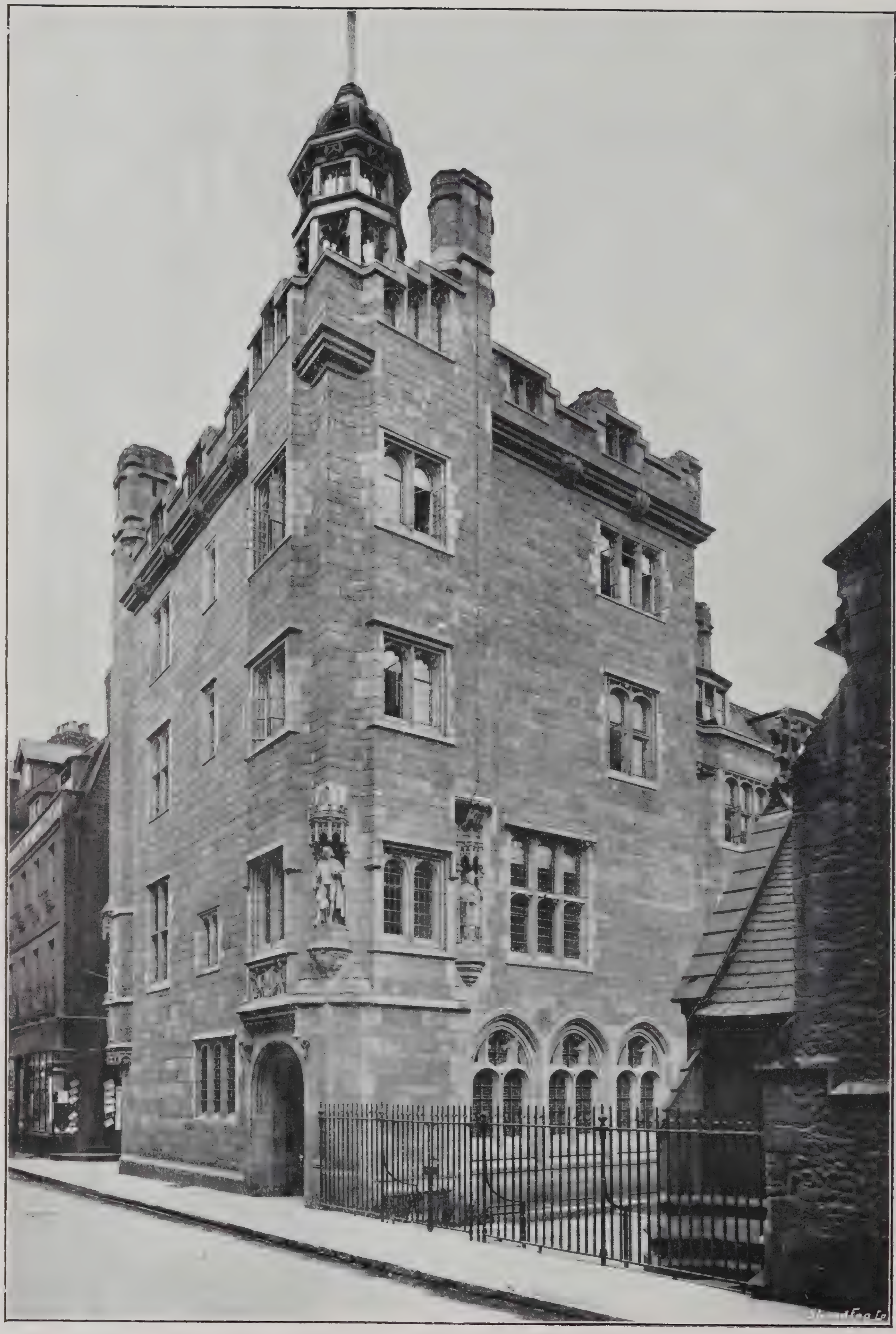


Photo: Ellis.

CAIUS COLLEGE: VIEW OF SOUTH END OF HALL, SHOWING NEW WORK BY EDWARD WARREN, F.R.I.B.A., F.S.A.



GONVILLE AND CAIUS COLLEGE: THE GATE OF HONOUR.



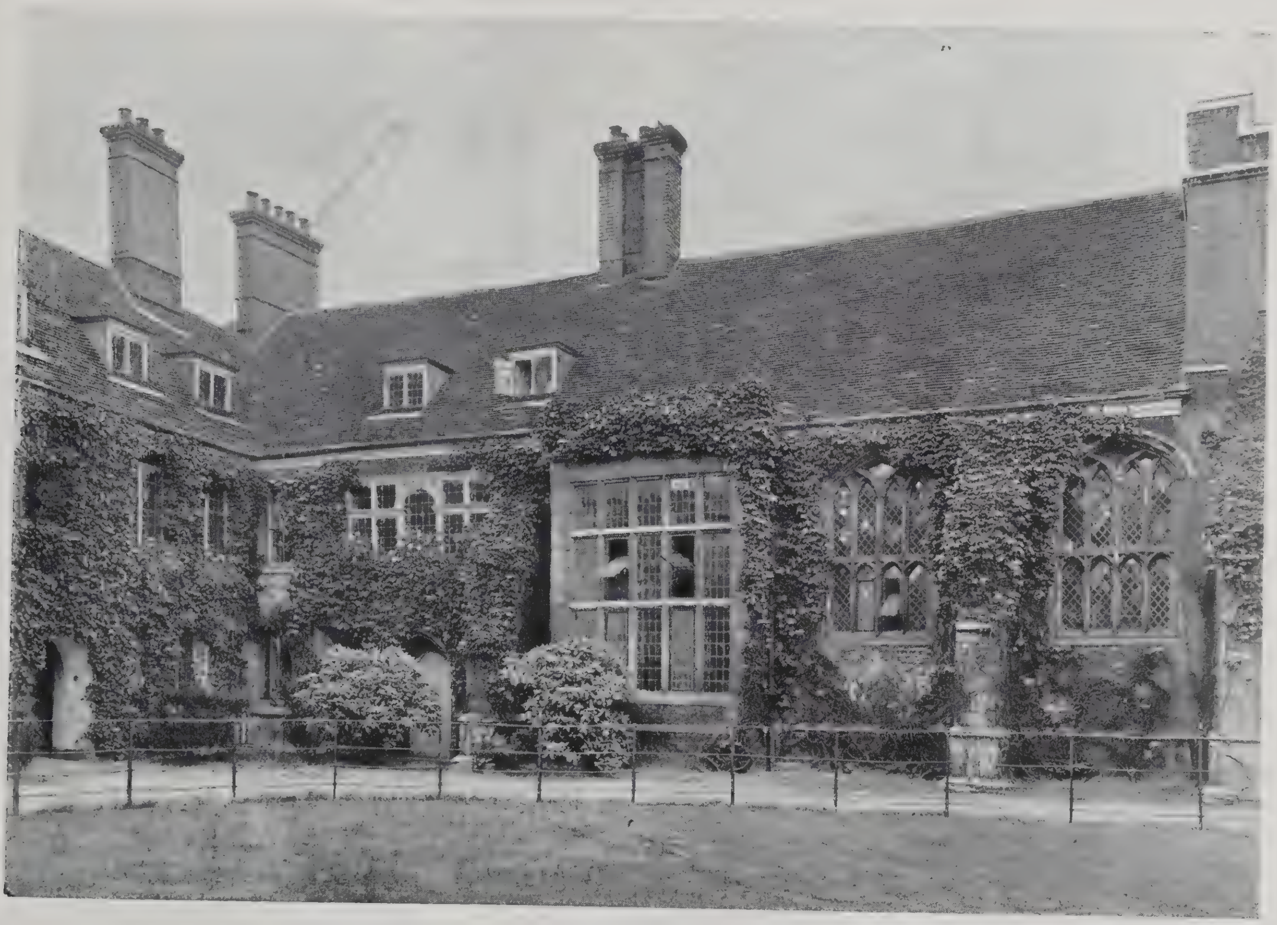
GONVILLE AND CAIUS COLLEGE: ST. MICHAEL'S COURT BUILDINGS. SIR ASTON WEBB, C.B., R.A., AND E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

CORPUS CHRISTI

On entering the first court of Corpus Christi College one is satiated with the dull work of William Wilkins, for he was the architect selected in 1823 to renew the quadrangle in the Gothic taste then becoming fashionable. As Mr. Hamilton Thompson remarks in his excellent little book on Cambridge, the proportions of the court are admirable, and everything is conceived on a grand scale, the hall and library being both fine apartments, and the chapel commanding; but the whole building is shallow, and its detail flimsy and jejune. With a feeling of relief, therefore, one passes to Corpus Christi's cherished relic, the small court on the north side. "You have only to turn your back on the ugly hall, and look at three sides of a venerable low quadrangle, clothed with ivy and stained with age, and you can imagine yourself back in the days of the Edwards, when the pious members of the Cambridge benefit societies founded the college.''

The range of windows in the "Old Court'' is indeed the most delightful, as it is also one of the earliest, in Cambridge. The court, too, is particularly interesting as being probably the first originally planned quadrangle. It consisted simply of a hall range on the south (seen in the photograph below), and chambers on the other three sides. The former contained at the south-east corner the master's chambers, communicating with the common parlour below, and also with the library and hall. We are told that in the original work the floors of the ground storey were of clay, and the windows either glazed in the rudest fashion, or left unglazed. The buttresses, it should be said, were added at the end of the fifteenth or commencement of the sixteenth century, as the old walls were becoming ruinous. By the middle of the seventeenth century the buildings were again dilapidated, and the repairs were paid for by the sale of forty-five silver cups for £42 10s. The present oriel of the hall was built at some time in the second half of the eighteenth century. The old hall, 48ft. long, including the screens, and 28ft. wide, is now converted into the college kitchen. It has its original open roof, with plain collar-beam principals.

The master's lodge contains a very complete series of portraits, but the later masters are not very noticeable. It cannot be said that the heads of houses during the early part of the last century were interesting representations. Among them was Dr. John Lamb, master from 1822 to 1850, whose term of office was signalised by the rebuilding of the college to Wilkins's design, as noticed above; but whether the copy of Raffaele's School at Athens (attributed to Poussin) which Wilkins presented to the college is sufficient compensation for the damage inflicted is a matter of doubt.



CORPUS CHRISTI COLLEGE: THE HALL FROM THE "OLD COURT."

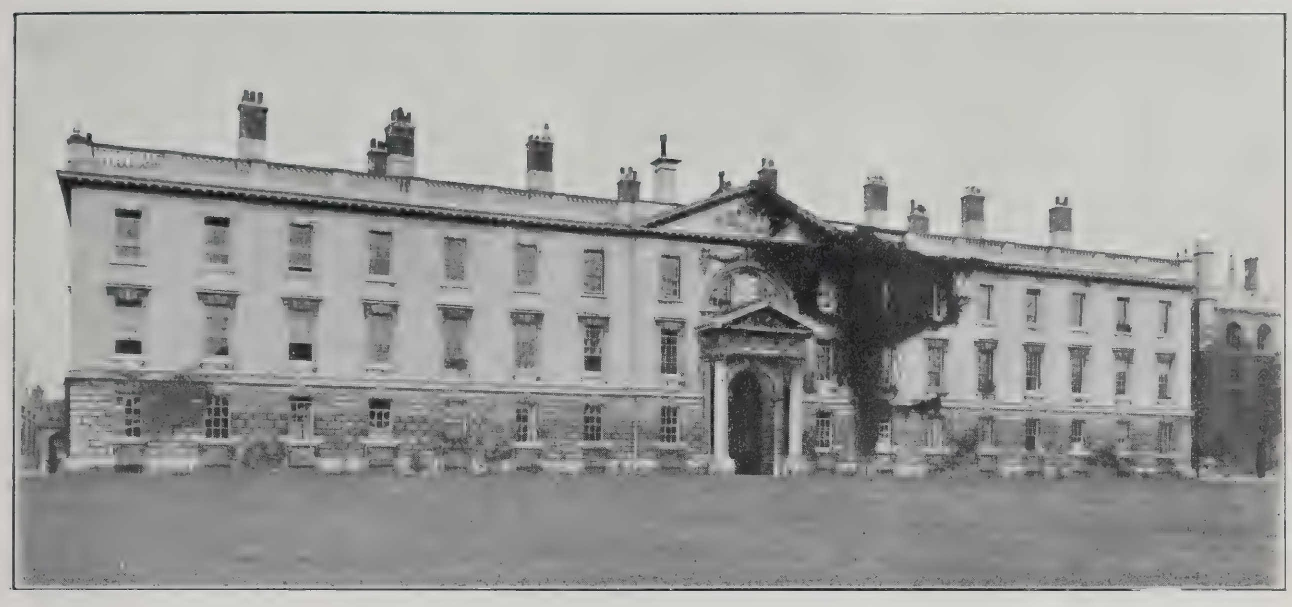
KING'S COLLEGE.

KING'S COLLEGE BRIDGE.

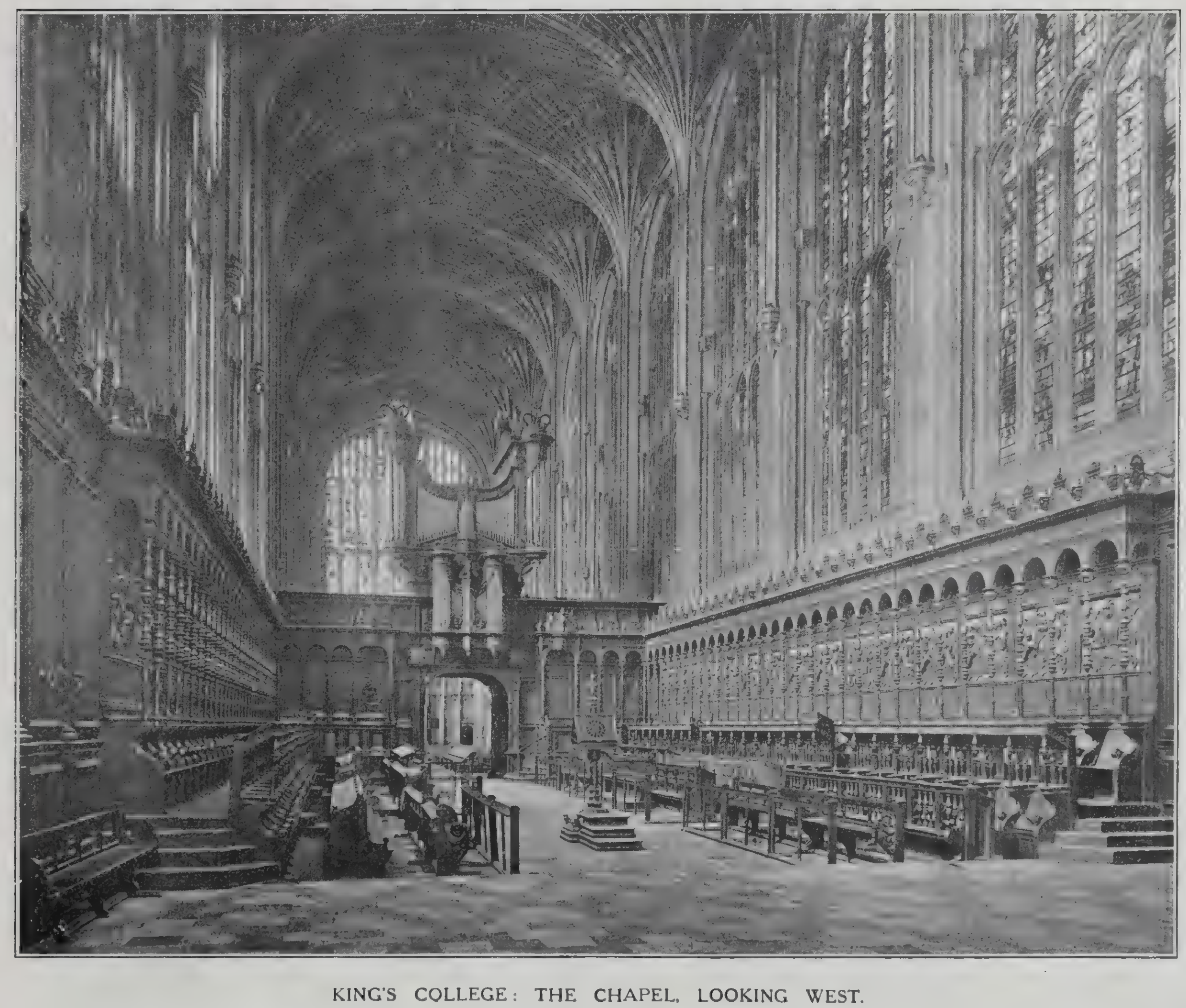
Originally commenced and endowed by Henry VI. in connection with Eton, King's College owns that magnificent chapel which dominates all the buildings of Cambridge. The chapel is one vast nave, 316ft. long, 45ft. 6in. wide, and 78ft. high, a most sumptuous example of Perpendicular Gothic. The fretted roof, unsustained by a single column or pier, is vaulted into twelve divisions, the centre of each having a pendant keystone, terminating alternately in roses and portcullises, each weighing more than a ton. It is a superb roof, but even this must give place to the windows. The painted glass is indeed the most remarkable that has been bequeathed to us by the age of Henry VII. and Henry VIII., when the art of painting had attained its highest excellence. There are twenty-five windows, with more than a hundred subjects. It has been aptly said that King's College Chapel without its glass would be, like the Lady Chapel at Ely, an interesting relic only; whereas it stands as the rival of Fairford in possessing the most complete set of windows of the Renaissance period in England. In each window there is an isolated figure or "messenger," bearing a scroll with appropriate Latin text, there being thus presented a connected illustration of the Gospel History, culminating in the east window with a representation of the Crucifixion; while at the west end, according to general custom, is the Last Judgment—a modern window by Messrs. Clayton and Bell. The woodwork in the chapel is also very fine, more especially the screen dividing the chapel from the ante-chapel, this screen being a graceful example of that Italian style which filtered into England through the Court of Francis I. It bears the love-knot and twisted initials of Henry VIII. and Anne Boleyn. The organ case belongs to 1606.

The history of the chapel may briefly be set down as follows:—Foundation-stone laid July 25th, 1446; fabric completed 1515; stained glass added 1526 and 1536; screen and most of the stalls 1536. Some inferior Gothic wood carving was added to the east end by Essex in 1774, but this has, fortunately, since been removed.

The chapel was the only part of King Henry's design which was ever carried out. It was intended originally to be one side of a square, the other three sides being composed of chambers, library, and other buildings. In the space to the west of the square, between the present



KING'S COLLEGE : RIVER FRONT OF FELLOWS' BUILDING.

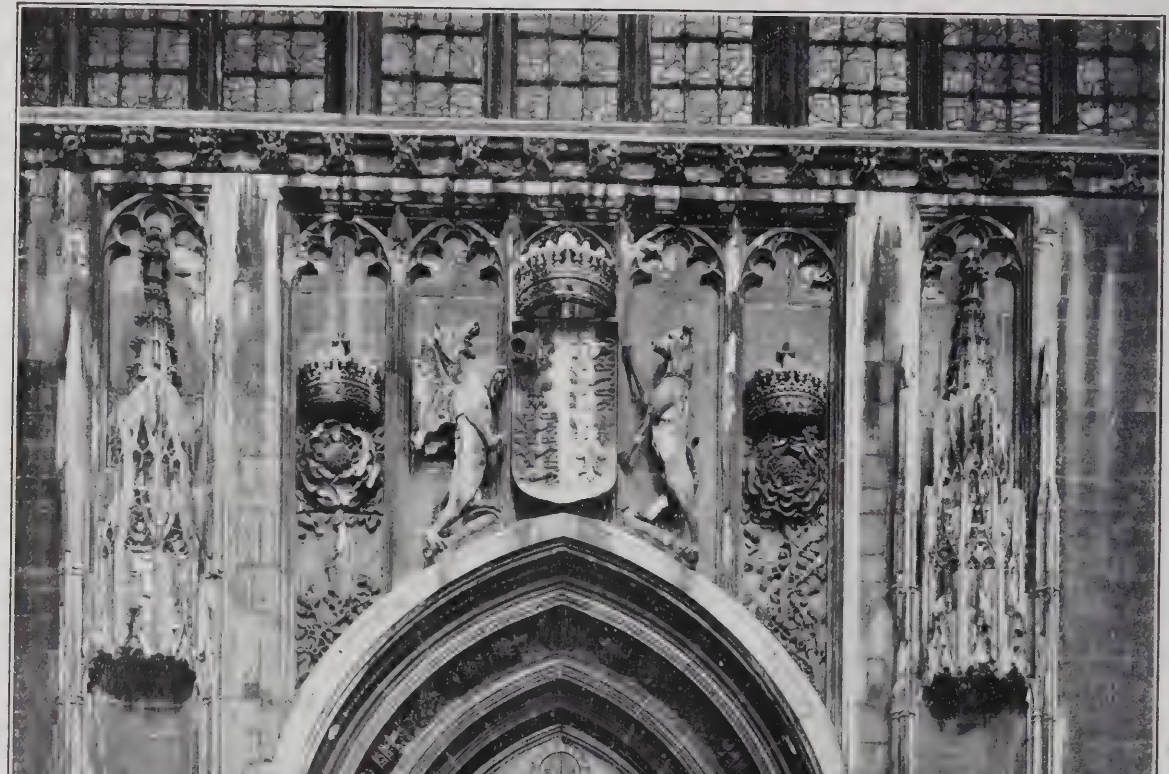


KING'S COLLEGE : THE CHAPEL, LOOKING WEST.

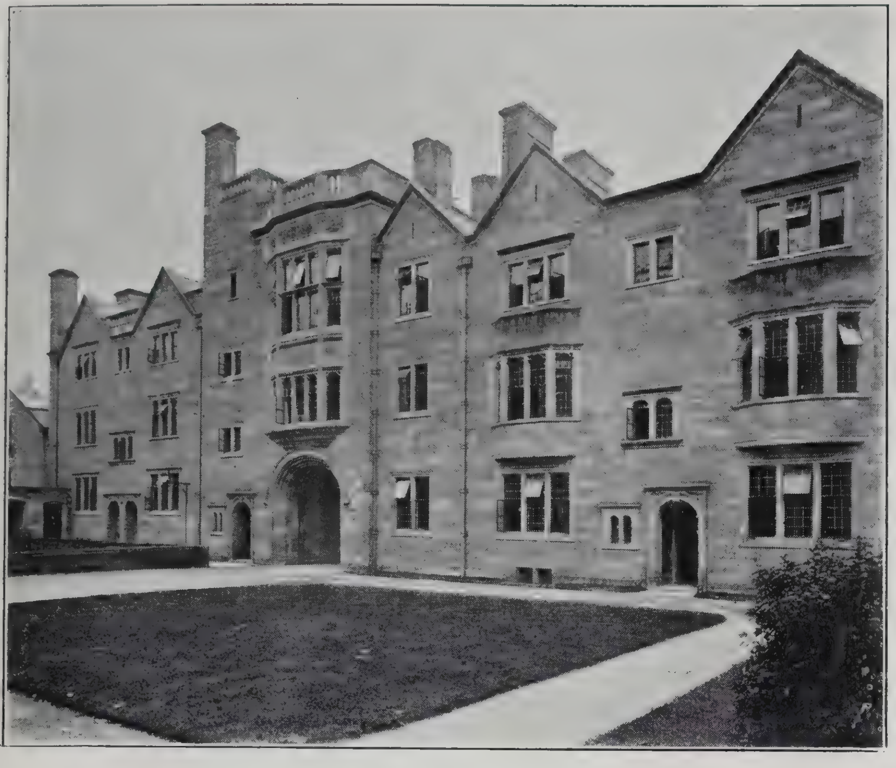
Fellows' building and the river, there was to have been erected another quadrangle, dominated by a huge square tower rising high above the chapel.

The idea of completing the college according to the will of King Henry VI. was never lost sight of, but want of funds hindered the work, and nothing serious was done till the eighteenth century. Then, in the year 1713, the provost, John Adam, set himself to gather funds, and rigorously prosecuted the building scheme. He had an interview with Wren at Hawksmoor's house. Hawksmoor appears to have prepared a plan, perhaps under Wren's directions.

The following is from a letter of the provost: "He (Hawksmoor) showed me ye upright model I did not like ye jetting out of ye pillars of ye portals, nor ye number of them, desired those might be but 4 clapt close on ye building, I think pilasters would still do better. I told him ye height would be majestic of itself,



KING'S COLLEGE CHAPEL: WEST DOORWAY.



KING'S COLLEGE: NEW BUILDING IN THE PROVOST'S COURT. SIR ASTON WEBB, C.B., R.A., AND E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

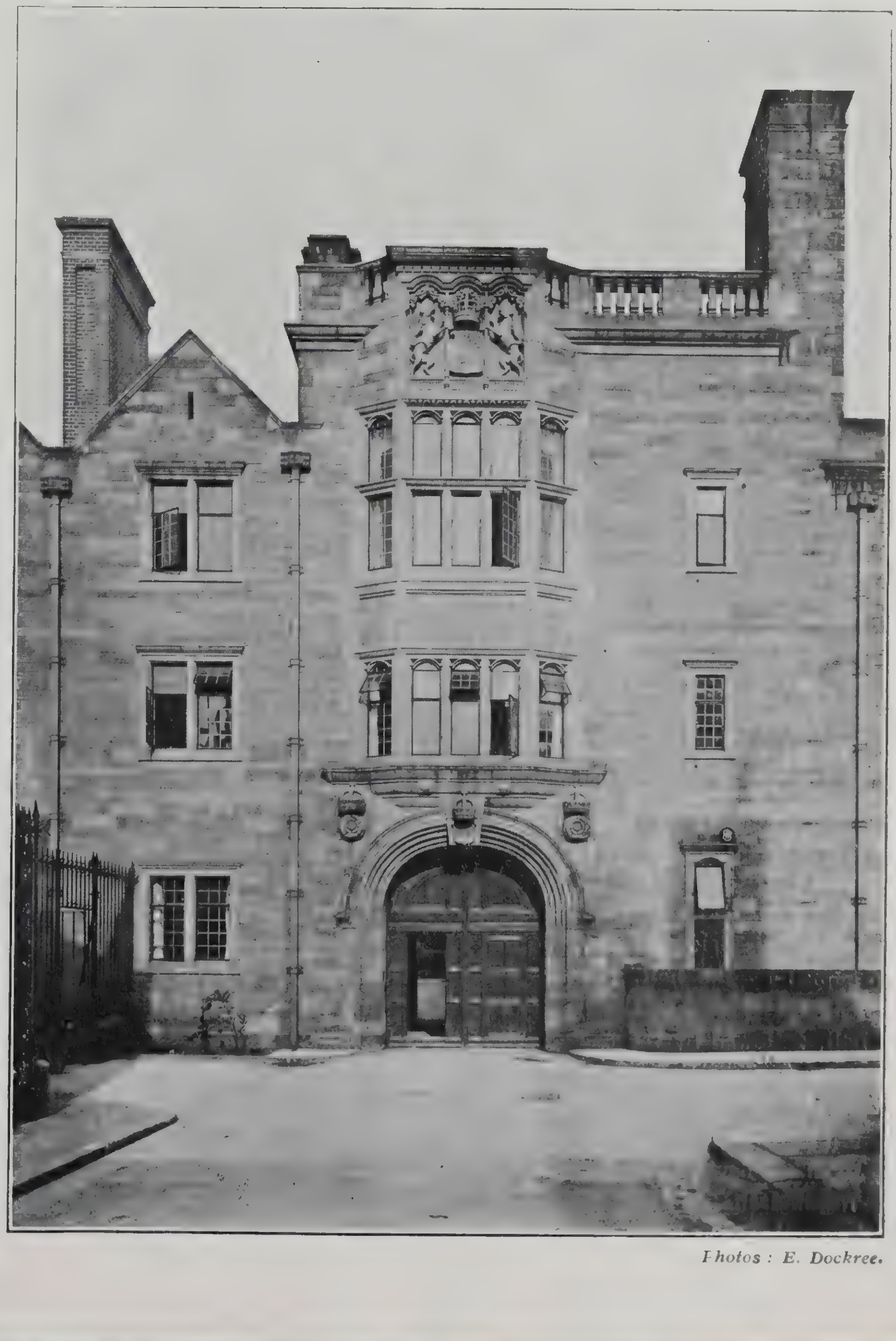
and in its plainess more answerable to ye chapel, and desired all ornaments to be avoided. The most expensive part will be ye Cloister but it is ye hardest part for Mr. Hawksmoor to part withal."

Adam died in 1719, and this scheme fell through. Work was not started till 1724, when Gibbs superseded Hawksmoor as architect. Gibbs intended to complete the square by three separate buildings, but the Fellows' building was the only one ever built. This was ready for the woodwork in 1729, by which time the funds were exhausted, and it was two years later before the woodwork was ordered by Gibbs, who undertook to do it "as cheap as the nature of the work will allow." His fees were £300.

Little more remains to be told. In 1822 the college again proceeded with its building scheme. For some reason they did not complete the quadrangle according to Gibbs's design, but held a competition, which was won by Wilkins. His design consisted of a Gothic screen to the front of the court and a mass of Gothic buildings to the south. It was also proposed to Gothicize Gibbs's building. However, by the time the new buildings were completed the funds had gone down, and Gibbs's beautiful building was thus preserved from ruin. Wilkins also designed the bridge of King's, a single-span structure, erected in 1819. In the latter half of the nineteenth century Sir Gilbert Scott added the small court known as Chetwynd Court, a design too conservative in its expression to be considered successful. It was thus reserved for the late Mr. Bodley to give a better exposition of Gothic, in the block of chambers next the river—assuredly one of the best pieces of modern work in Cambridge. The scheme provided for a new quadrangle here, but only two sides were completed (in 1893), and to that extent the design is shorn of its total effect. Still, as it stands, it is excellent.

Latest among new buildings is the range which has recently been completed in the Provost's Court from designs by Sir Aston Webb and Mr. E. Ingress Bell.

The fountain in the centre of the quadrangle of King's College is by the late Mr. H. A. Armstead, R.A., and was erected in the 'seventies at a cost of £4,132. It bears some good panels in bronze, particularly one of a sprite driving two dolphins.

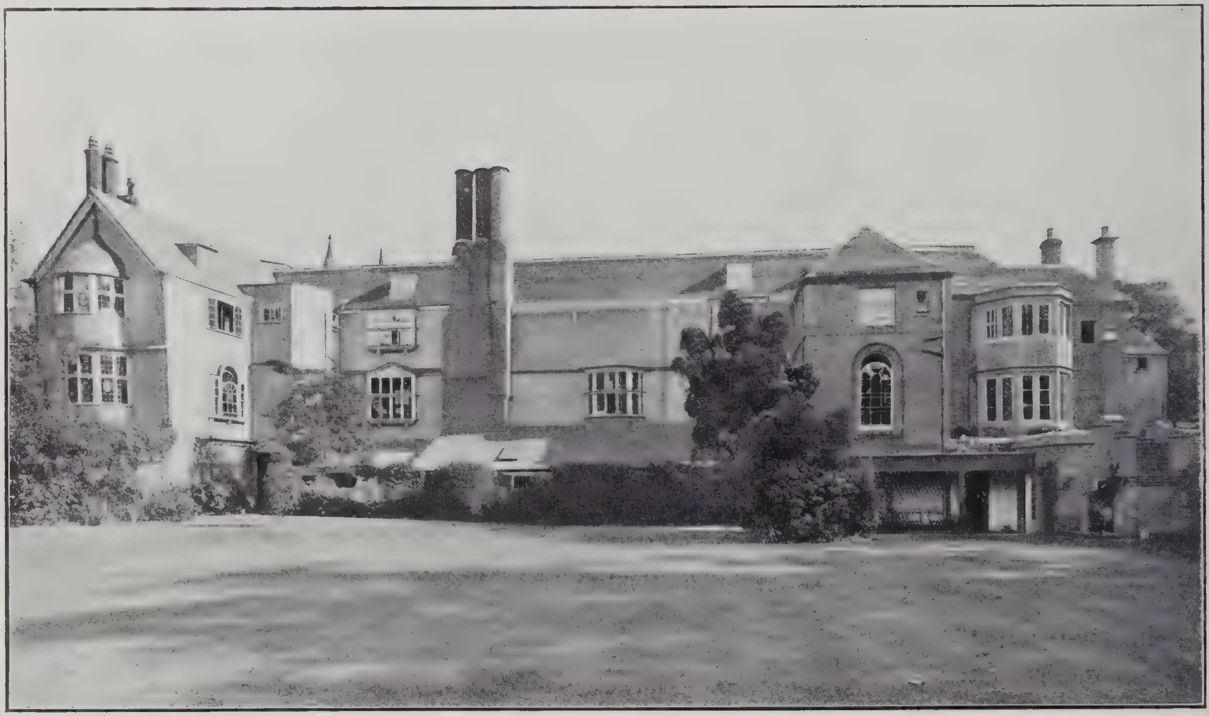


Photos: E. Dockree.

QUEENS' COLLEGE.

The work of the rival queens of the Red Rose and the White—Margaret of Anjou and Elizabeth Woodville, who are regarded as the co-foundresses—Queens' College disputes with Jesus the honour of being the most picturesque in Cambridge. It has, to begin with, a very fine gateway. Rising well above the buildings on either side, with octagonal turrets at the angles, it is the earliest of the common Cambridge type, dating from 1448; and it may be noted that this gateway tower, like most similar mediæval structures, is not in the centre of the range, either towards the court or towards the street. There are chambers right and left, and also along the south side. The west side of the quadrangle is occupied by the hall, butteries, and kitchen; the north has the library next the hall, followed by the chapel, which extends to Queens' Lane, completing this side of the court; while in the angle between hall and library is the combination room. The hall was built in 1449 and restored in the nineteenth century. On the north range are seen the curious sundial ascribed to Sir Isaac Newton (of which more below) and an excellent modern turret. A passage through the hall screens leads to the cloister court, on the left of which is the small enclosure known as Erasmus Court, rebuilt by Essex in 1773.

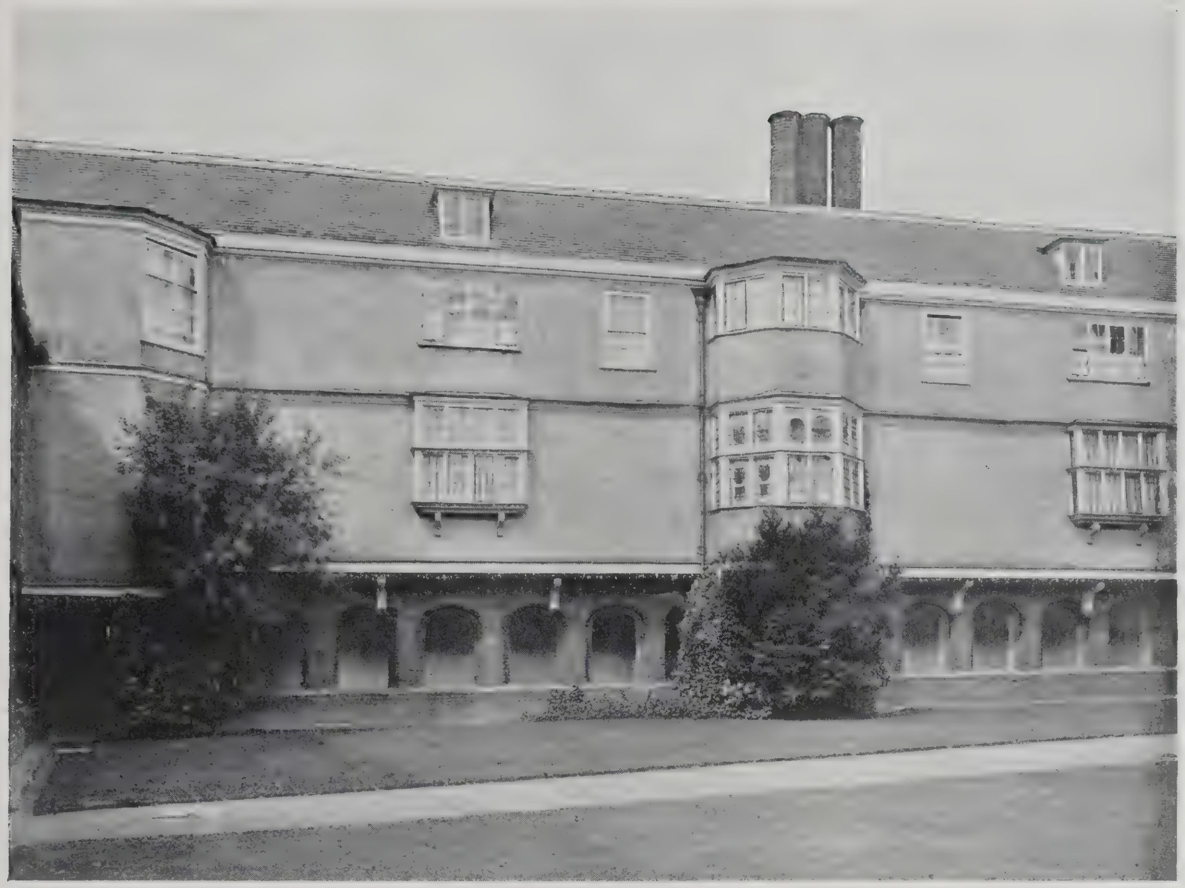
Though very small, the cloister court is a most delightful example of fifteenth-century brick treatment. The cloisters had been built about 1460, but when the President moved from his old chambers into those in the cloister court, the two sets of rooms were connected by the construction of the gallery shown in the photograph opposite. The gallery is still exceedingly picturesque, but to judge from old prints it must originally have been still more beautiful. It was in two stories, each 80ft. long and 12ft. wide, and made entirely out of timber. Overhanging the arcade on each side, its walls are supported by carved brackets springing from the cloister walls, and it is noteworthy that the position of these brackets does not tally with the arches below. Originally each of the three large oriels was carried up above the roof as a complete octagon, the top of which terminated in a conical roof crowned by a lofty vane of ornamental ironwork. The enlarged portion from Loggan's view, dated 1688, shows this clearly.



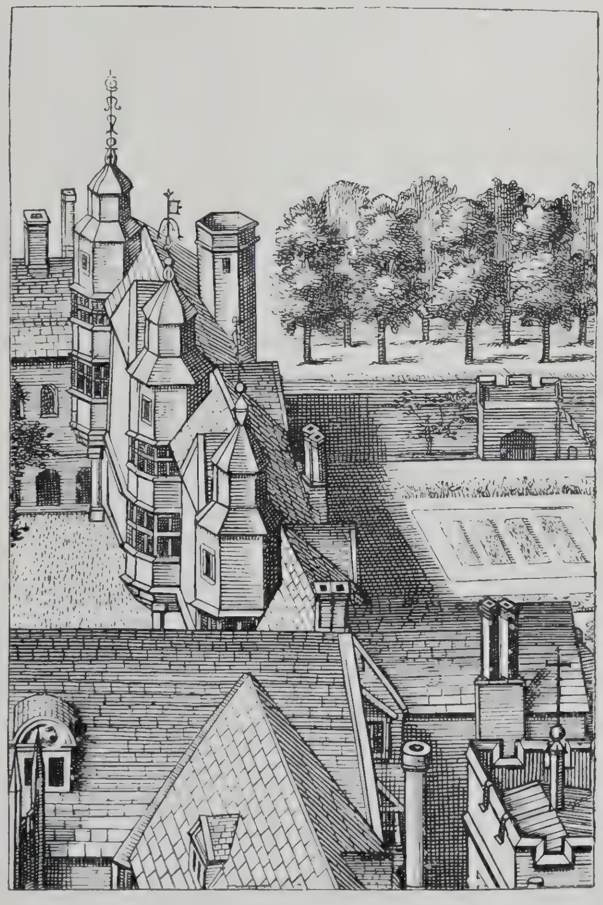
QUEENS' COLLEGE: PRESIDENT'S HOUSE FROM THE GARDEN.

The front of the president's house to the garden on the north side (shown by the photograph on this page) is a particularly pleasant example of domestic work. When one finds, on analysis, of how many very dissimilar features it is composed, one is forced to admit the breadth of its treatment, and the warmth of colour and variety of texture which distinguish it. The fish-scale roof over the bay window on the left is a detail worthy of attention, being much more successful than this treatment usually is.

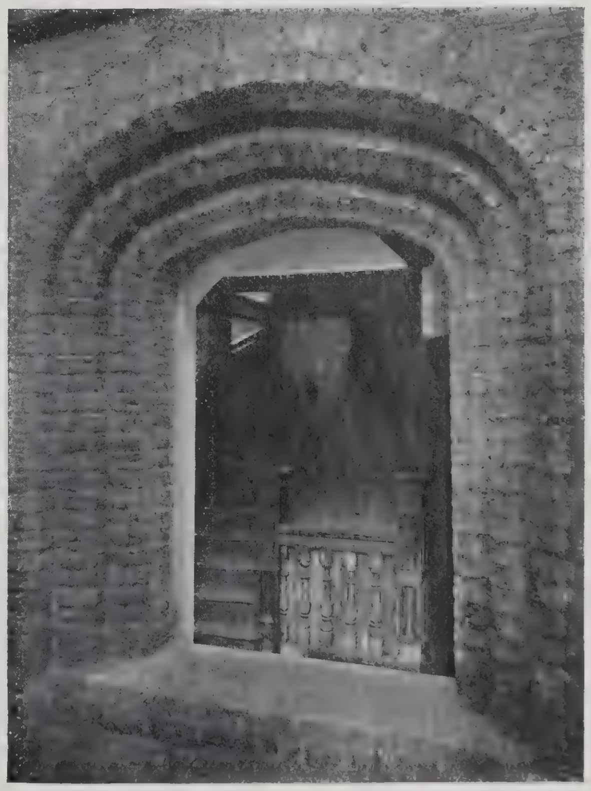
On the west side of the college, leading from the cloister court, is the so-called Newton bridge. According to popular tradition, the original bridge (on the model of which a successor, in teak, was erected some years ago) was designed on mathematical principles by Sir Isaac Newton, so as to hold together without



The President's House on the North Side of the Cloister Court.

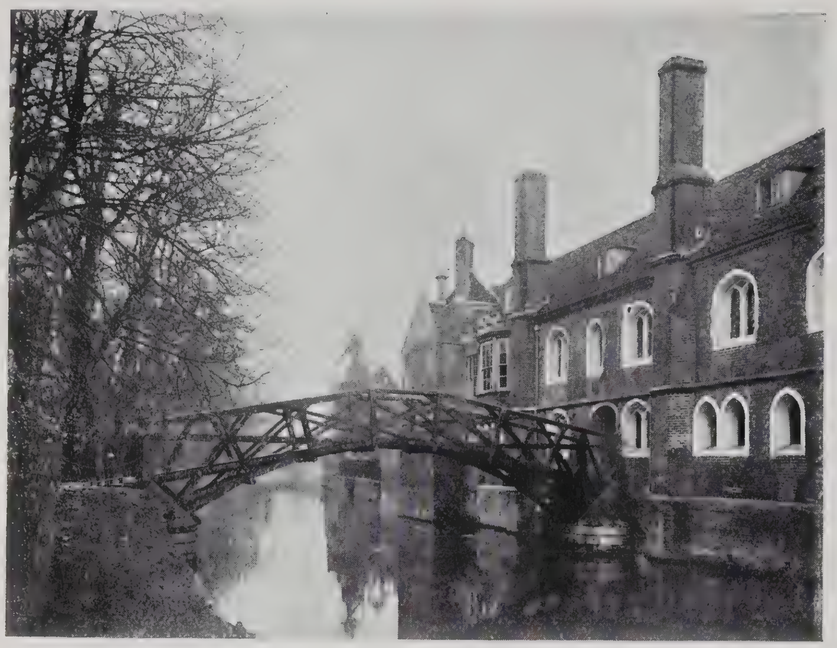


Enlarged detail from Loggan's view, 1688, showing the original oriels of the President's House.



Detail of fifteenth-century brick arched opening in Cloister Court.

QUEENS' COLLEGE: THE CLOISTER COURT.

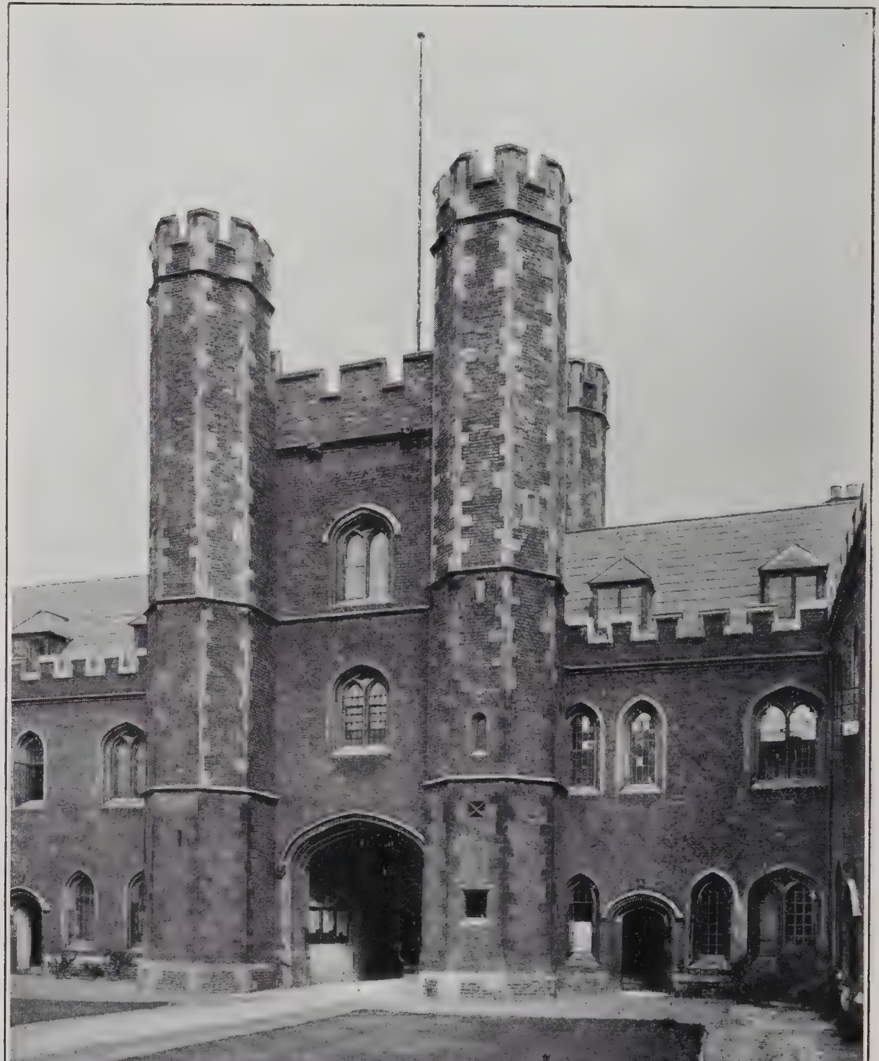


QUEENS' COLLEGE: THE SO-CALLED NEWTON BRIDGE.

the assistance of any nails or rivets, and when the visitor pointed to the presence of nails it was explained that the bridge had been taken down by some curious Fellows, who had been unable to piece it together again properly. But the actual fact is, that the bridge was built in 1749 by Essex from a design by a Mr. Etheridge. It is true that Essex's bridge replaced an earlier one built in 1700, and it is possible that Newton may have been consulted about the latter. At that time, however, he was absent from Cambridge, owing to his appointment as Master of the Mint; moreover, he was so wholeheartedly occupied in his new work that he wrote to a friend: "I do not love to be dunned and teased by foreigners about mathematical things, or to be thought by our own people to be trifling away my time about them when I should be about the King's business." Historic accuracy therefore compels us to state that Newton had no more to do with this bridge than with "Newton's Clock" and dial, constructed in 1733; and just as much, again, as Erasmus had to do with the Walk of which he is the eponymous hero.

Not long ago the Society for the Protection of Ancient Buildings took in hand the river front of Queens' College, and subjected the stonework to a drastic whitewash treatment, with the lugubrious result seen in the accompanying photograph.

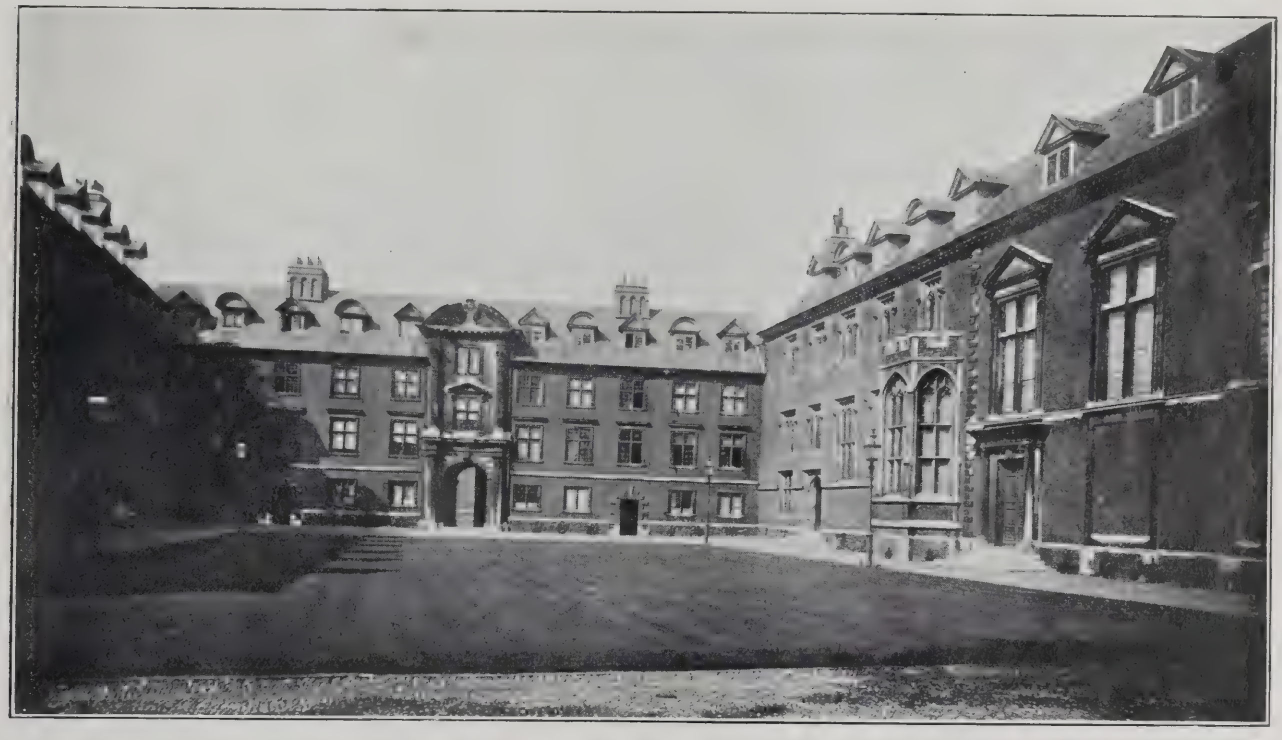
The modern work at this college includes the northernmost range of chambers built by Mr. W. M. Fawcett in 1886, and, more important, the new chapel by the late Mr. Bodley, designed with great ability throughout and including some good windows by Mr. Kempe. The reredos, a particularly effective piece of work, consists of a heavy overhanging cornice, rather wider than the altar, supported by marble shafts, and carved with a row of leaves in high relief. The organ case, too, calls for notice, though simply a frame to carry the pipes, which ascend one above the other, as they did in the old organs—from which the idea of this one appears to have been taken. The stalls are returned across the west end, with a bench beneath them, and are panelled in pointed arches, with a circle sunk in the spandrels, in which a flower, or some other device, is painted. The windows on the south side of the chapel are filled with stained glass by Hardman. This was taken from the old chapel, and is of small merit when compared with the rest of the work.



QUEENS' COLLEGE: GATEWAY FROM FIRST COURT.

SAINT CATHERINE'S.

This college was founded in the second half of the fifteenth century by Robert Wodelarke, "to the honour of God, the most Blessed Virgin Mary, and Saint Katerine the Virgin"; but was almost entirely rebuilt at the end of the seventeenth century. It occupies three sides of a spacious quadrangle, measuring 110ft. from north to south, and about 200ft. from east to west, its eastern side being open to Trumpington Street, from which it is separated by a railing and a wide space planted with trees. The north range has, at the west end, the hall on the ground floor, the combination room on the first floor, and the library above, and at the east end the chapel. The south range contains chambers, the eastern extension of which was erected by Essex in 1743. The west range consists also of chambers in three storeys, surmounted by a garret, there being on this side a central feature with columns and a pediment carried up the whole height. According to the original design engraved by Loggan, there was to have been a range closing the quadrangle on its eastern side, with another pedimented central feature, but this was never carried out. The realisation of the project of reconstructing the college was, if the epitaph in the ante-chapel may be trusted, wholly due to Dr. Eachard, Master from 1675 to 1697, "who partly supplied the funds himself, partly obtained them from others—from the Learned through friendship, from the Rich through persuasive eloquence, wherein he greatly excelled. He finished the new building to a certain point, and had the Fates spared him a little longer, he would have left an elegant, magnificent, and complete College, in the place of that sordid and ruinous structure scarce worthy of the name which he had found there." These florid expressions are selected from his epitaph, for which the usual allowance must be made. It is perhaps fairest to say that the college buildings are an example of Queen Anne architecture almost domestic in character, and of some interest. No name of the architect is mentioned in the records, unless the payments to "Mr. Elder, Surveyor, for his journey from London," and to Robert Grumbold, the master mason who had been employed at Clare in 1669, imply that the design is to be attributed to them.

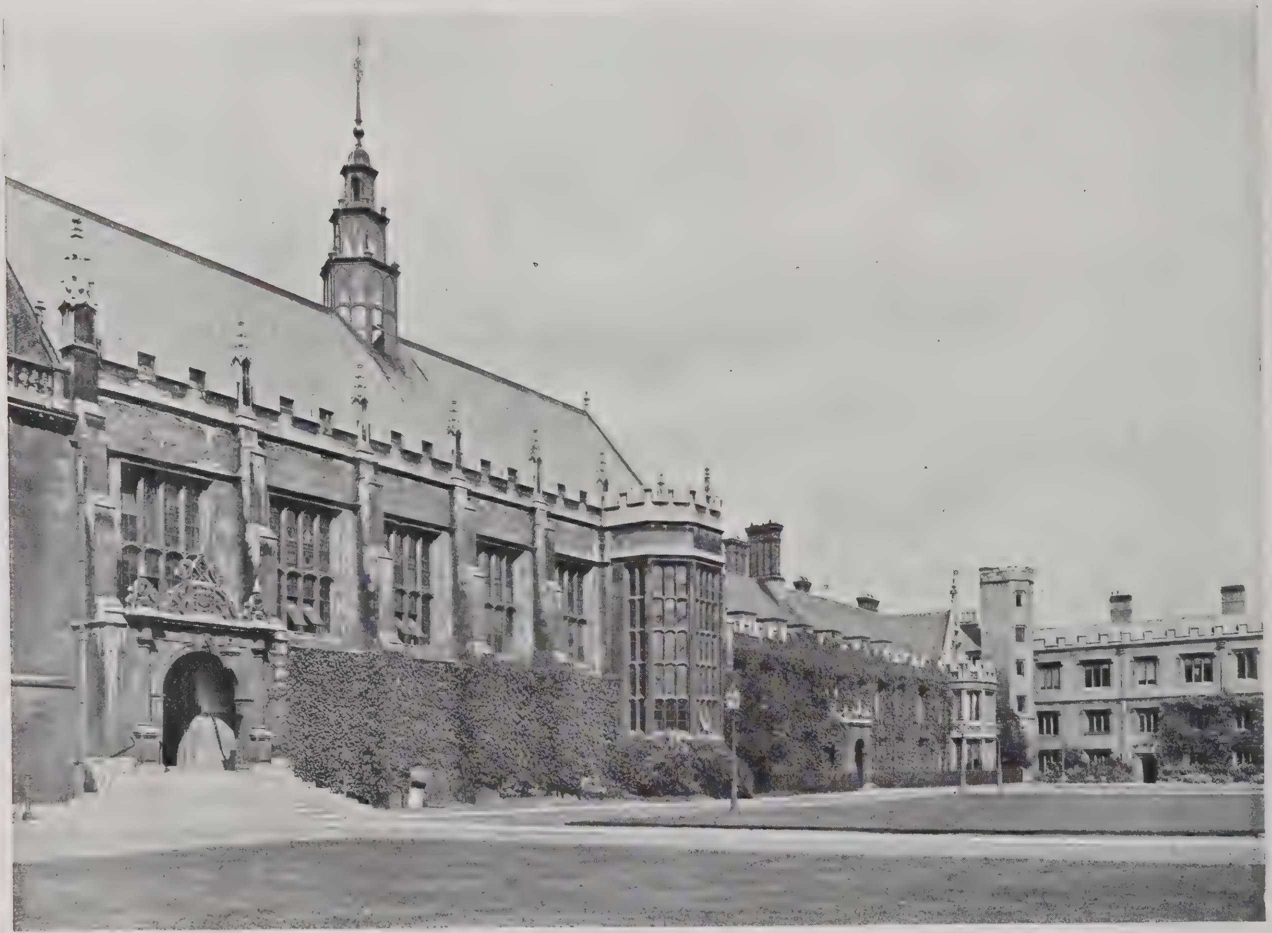


ST. CATHERINE'S COLLEGE: GENERAL VIEW OF QUADRANGLE.

A row of wooden railings was originally set up along the front to Trumpington Street. These were subsequently replaced by the existing "range of noble palisadoes of cast iron" provided by Dr. Sherlock, who was Master from 1714 to 1719.

The appearance of the quadrangle was much changed in 1868, when an oriel window was added to the hall (seen on the right in the photograph below), and the fenestration was altered, Gothic tracery being introduced. Mr. W. M. Fawcett was the architect for these alterations and additions, as also for the new master's lodge, erected on a site acquired from Queens' College. The external details of the lodge are closely copied from the front of Sawston Hall, near Cambridge—a good example of a sixteenth-century house. And it is interesting to record that the panelling of the dining-room was brought from "Cromwell House," at the Castle End, when that curious old house was pulled down by the Trustees of Storey's Charity; while in the study may be seen some Elizabethan panelling removed from the buttery, where it had long remained hidden under many coats of paint.

TRINITY COLLEGE.



TRINITY COLLEGE : THE HALL FROM THE GREAT COURT.

Trinity College was founded by King Henry VIII. in 1546, at which time the site was covered by two colleges, seven hostels, and a number of other properties.

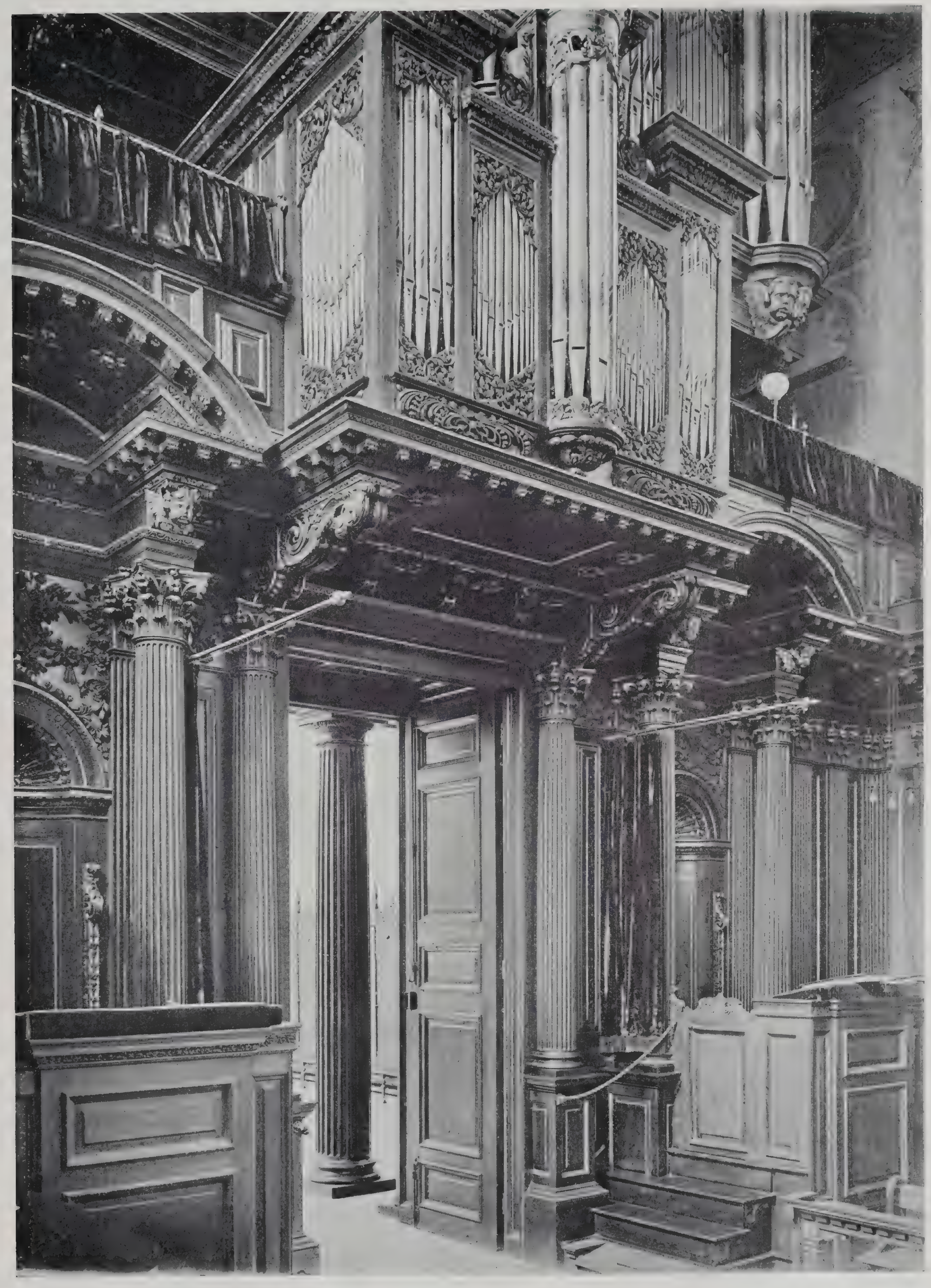
In 1554 the college appears to have drawn up a scheme for its complete reconstruction. They started with a range of chambers which were subsequently pulled down by Dr. Nevile. These chambers occupied the north-west corner of the great court.

The great gateway tower which now forms the principal entrance to the college was commenced in 1518, and completed in 1535. The years 1555-64 saw the building of the chapel.

In 1593 Dr. Thomas Nevile was appointed master, and remained so for twenty years, and to him the college owes its present noble scale. The following account of his labours is reduced from a record of the time:—When he first came to the college he was struck by the remarkable absence of beauty in the buildings, and he set himself diligently to the rebuilding of the college. When he had completed the great quadrangle and brought it to a decorous aspect (for fear the deformity of the old hall, which through extreme old age had become infirm and ruinous, should cast as it were a shade over its splendour), he himself provided funds for the building of a great new hall, worthy of the quadrangle. In these additions he acted under the advice of Ralph Symons, who had already acted as architect to Emmanuel College, and who designed the second court of St. John's College later. Nevile built the south side of the great quadrangle and Queen Tower, 1594-97, and in 1600 he pulled down the range of buildings erected just before, and adjoining the chapel, which destroyed the symmetry of the quadrangle. He took down and erected King Edward's Tower as an entrance to the chapel, and erected the master's lodge. This course, no doubt, was suggested by Ralph Symons, and it has left us with the most spacious quadrangle in Cambridge. The great court measures:—West side, 340ft.; south side, 288ft.; east side, 325ft.; north side, 257ft.

In 1614 the tower of the entrance gateway was raised and beautified. In 1705 an observatory was erected in the roof of the gateway, but this was removed in 1797.

In 1750 the whole of the great court, or nearly all, was stuccoed and generally repaired. In 1775 Essex Italianized the south-west corner, and it was intended to treat the whole court in this way, but the scheme was never carried out.



TRINITY COLLEGE CHAPEL: MASTER'S SEAT AND LOWER PART OF ORGAN.

LIBRARY
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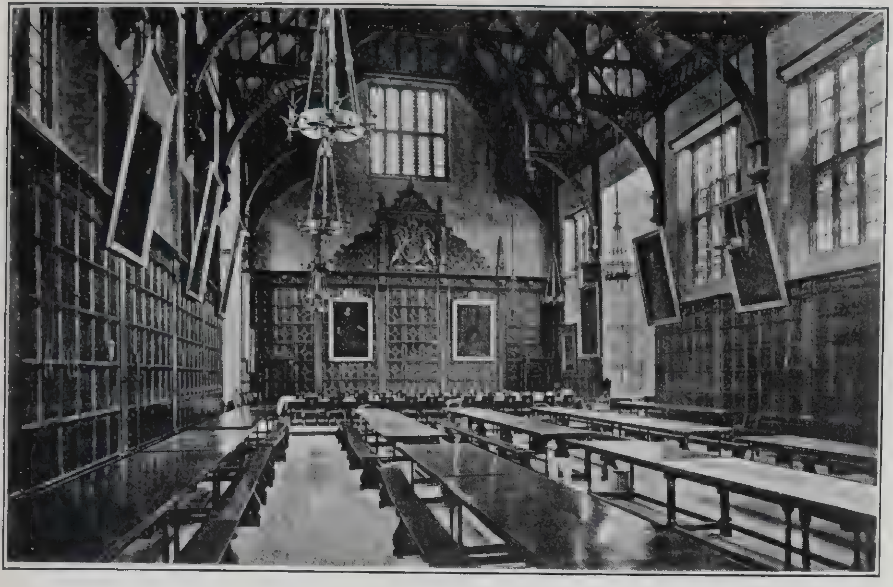
UNIVERSITY OF ILLINOIS



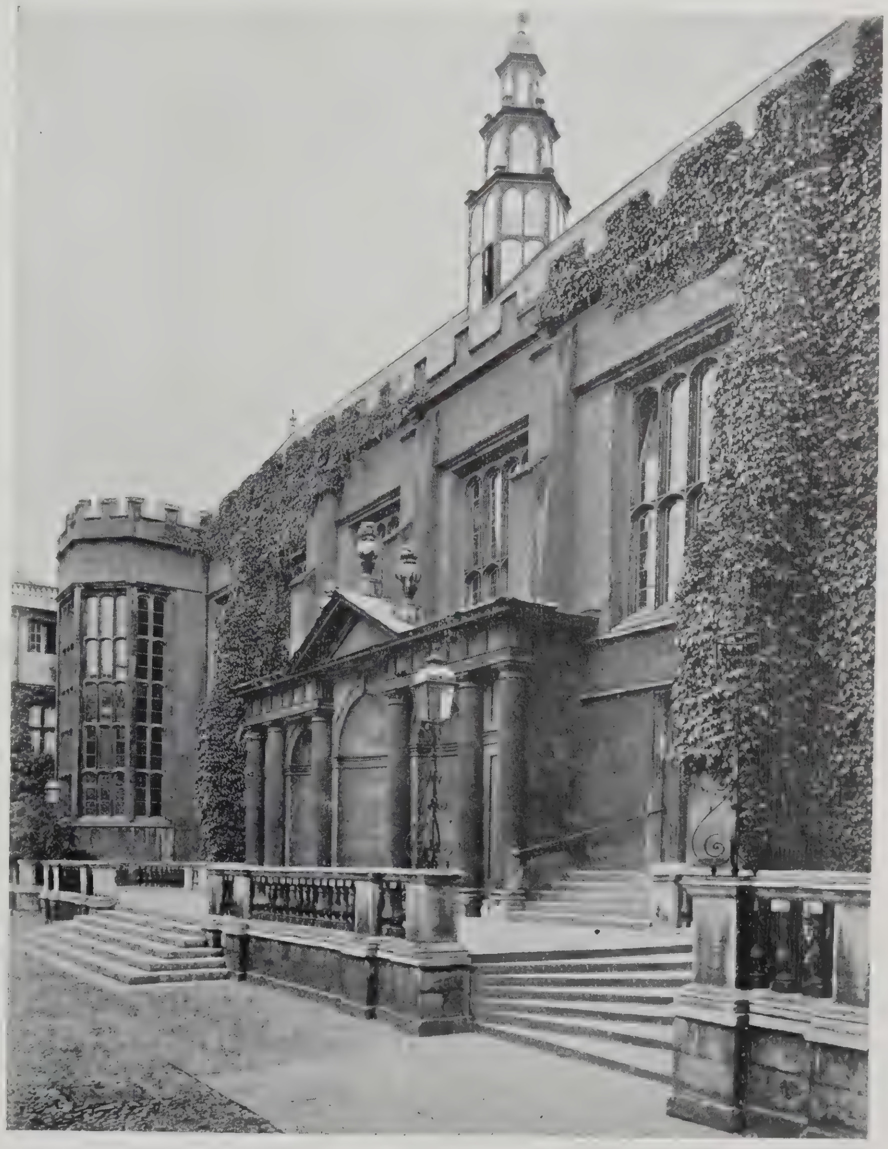
TRINITY COLLEGE: DINING HALL.

The hall of the college was commenced in 1604 from designs by Symons, and finished in 1605. The building was, for the time, erected with extreme rapidity, occupying only eighteen months in construction. The kitchen was even more rapidly erected, as the foundation-stone was laid on July 7th, 1605, and the last slater's account paid by November 24th of the same year. Before designing the hall they took the very sensible course of examining some existing halls. They selected the hall of the Middle Temple as the most suitable, and there is a record of their visit to London concerning it. Both halls are of the same dimensions—100ft. by 40ft. by 50ft. high. This completed the building of the great court.

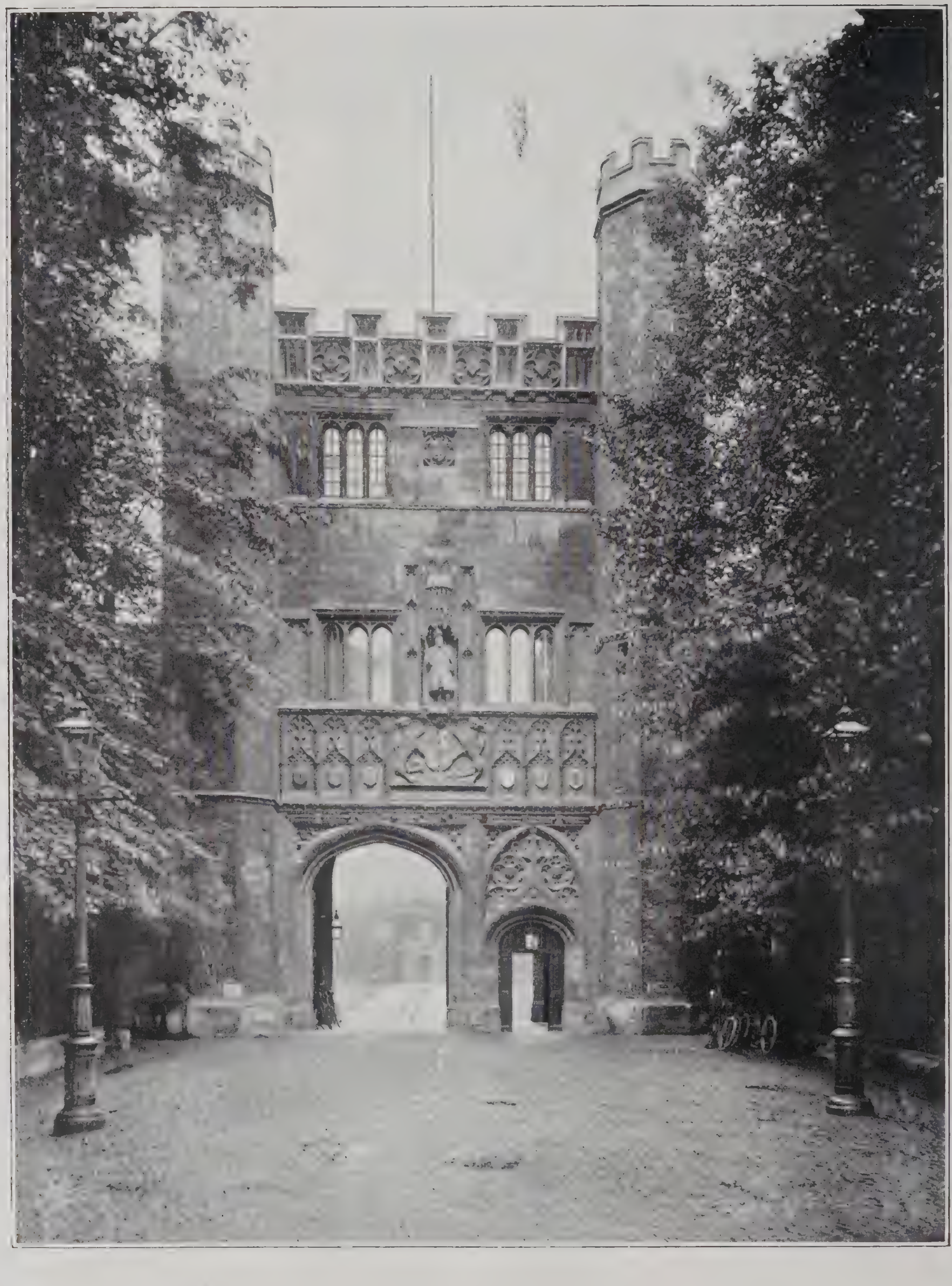
Nevile, at enormous cost to himself, next set himself to the building of the second court in 1614, known as Nevile's. This was built in a Jacobean manner, and was repaired and Italianized by Essex in 1755.

The great library which forms the west side of Nevile's Court was designed by Sir Christopher Wren, who rendered his services gratuitously. Wren probably did this because he was a close friend of Dr. Barrow, who was the master of Trinity from 1673 to 1677. Wren made two designs for this library. The first was a circular building 90ft. high by 65ft. in circumference, covered with a dome and cupola, and this idea was actually carried into execution at the Radcliff Library, Oxford, by James Gibbs. After this design was made, the college decided to lengthen Nevile's Court, and this rendered the circular design unworkable. The present design is said to owe its inspiration to the library of St. Mark's, Venice. Wren made six drawings of his design, and sent careful written instructions explaining it.

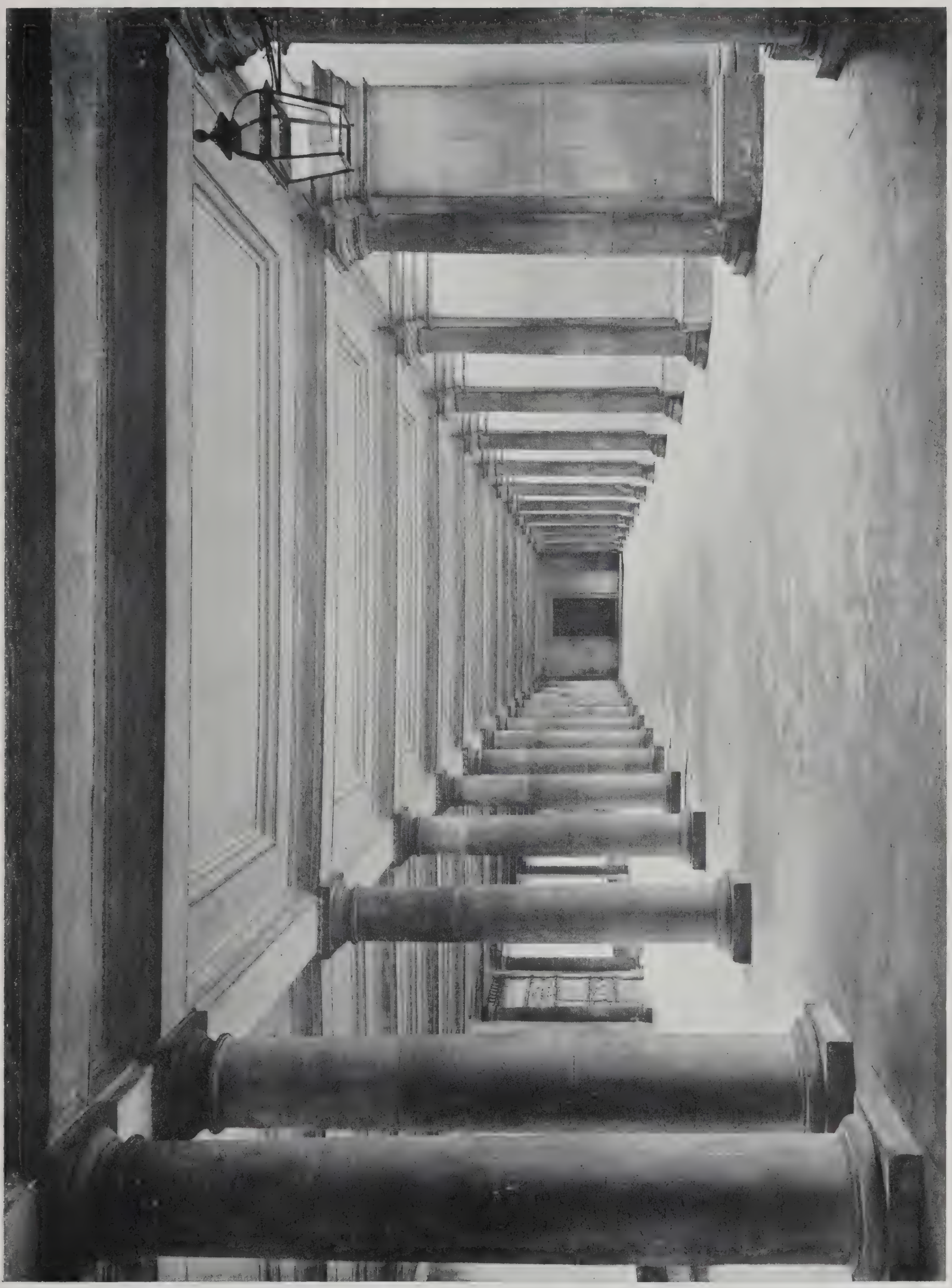
In a letter to Dr. Barrow with reference to the elevation of the library to Nevile's Court, Wren says: "I chose a double order rather than a single, because a single order must either have been mutilated in its members or have been very expensive, and if performed would not have agreed with the lownesse of the porches, which would have been too darke and the solids too grosse for the openings. I have given the appearance of arches as the Order required fair and lofty: but I have layd the floor of the Library upon the impostes, which answar to the pillars in the cloister and the levels of the old floores, and have filled the Arches with relieves of stone, of which I have seen the effect abroad in good building. . . . . By this contrivance the windows of the Library rise high and give place for the deskes against the walls, and being high may



TRINITY COLLEGE: FACADE OF HALL TO NEVILE'S COURT.

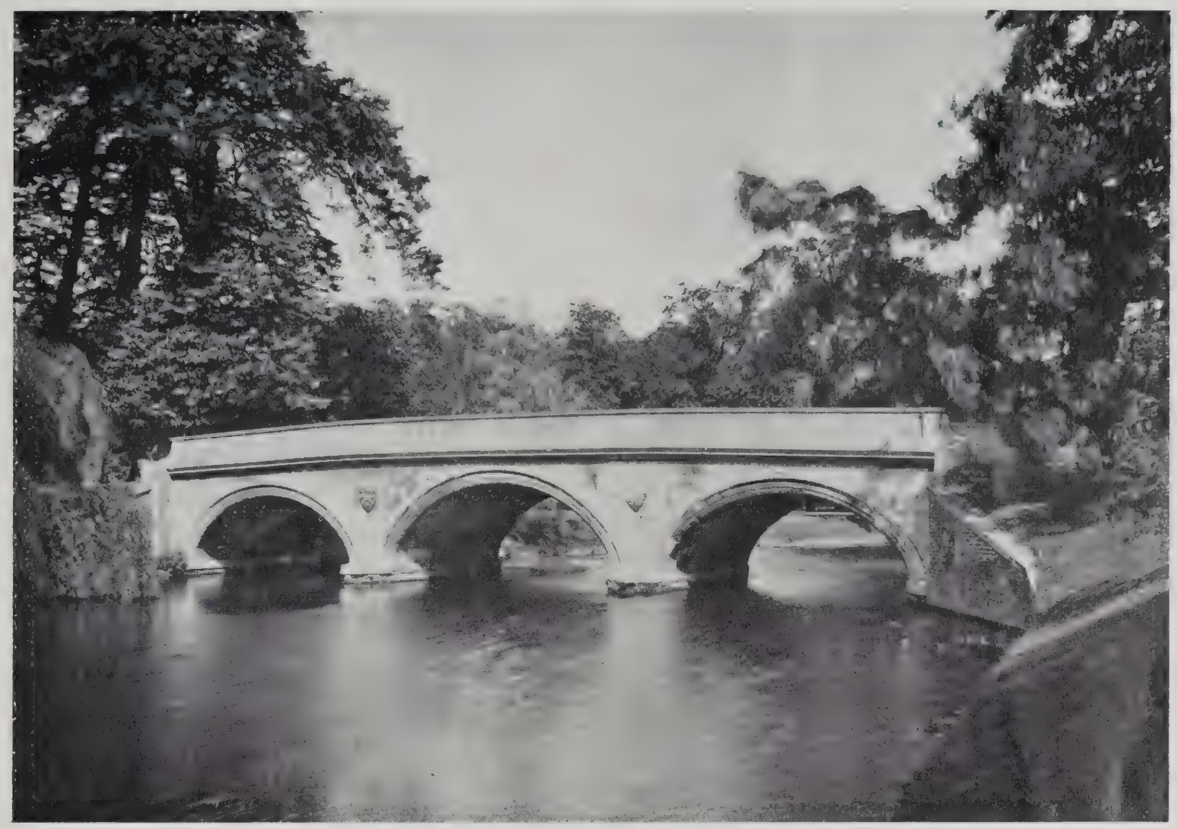


TRINITY COLLEGE GATEWAY.

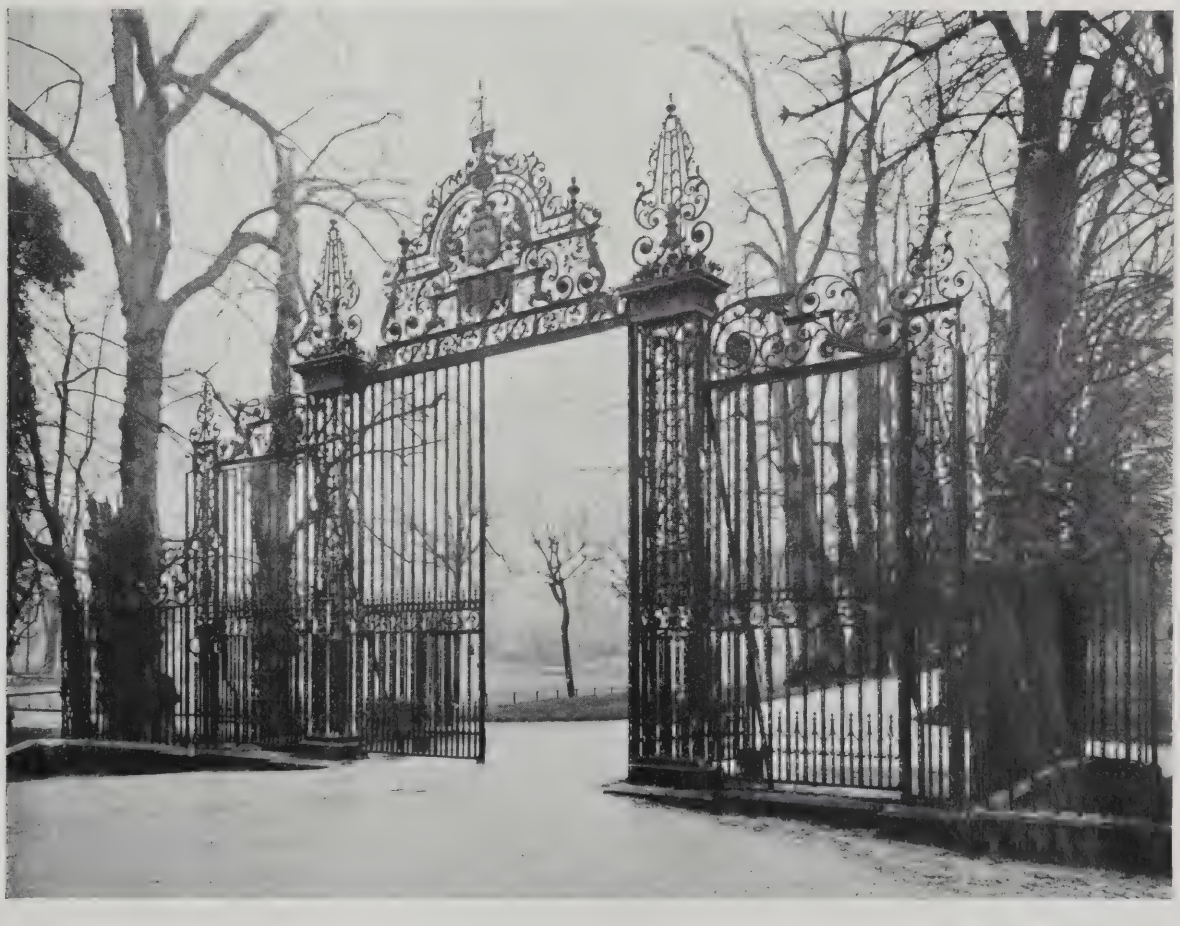


TRINITY COLLEGE: WREN'S COLONNADE UNDER THE LIBRARY

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS



TRINITY COLLEGE BRIDGE.

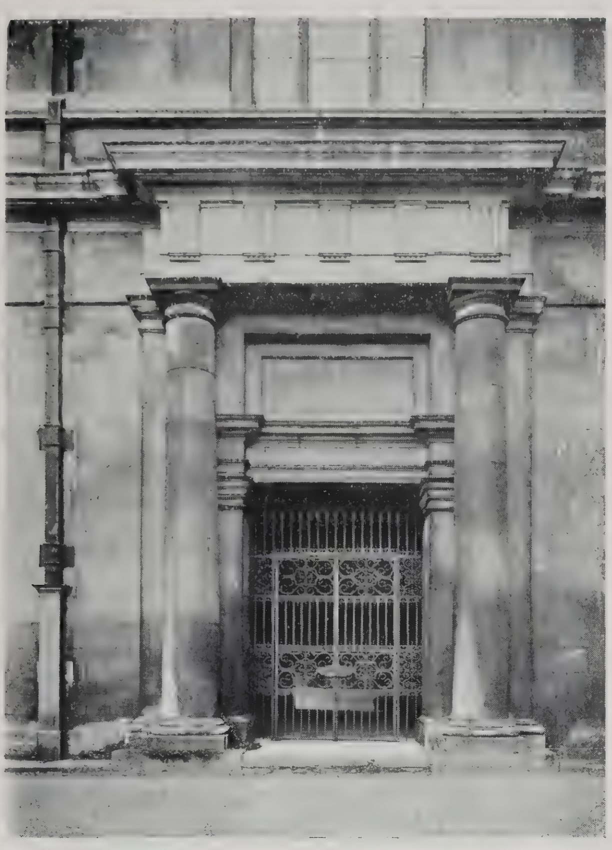


TRINITY COLLEGE: GATES AT "BACKS."

be afforded to be large, and being wide have stone mullions and the glass pointed, which after all inventions is the only durable way in our Climate for a publique building, where care must be had that snowe drive not in. I have given noe Frontispiece to the midle than Statues, because in this case I find any thing else impertinent, the Entrances being endwais and the roof not suiting it." These statues, Wren adds, "will be a noble ornament, they are supposed of plaister, there are Flemish artists that doe them cheape." The river front is spoken of as being designed "after a plainer manner to be formed most with Ashler, the three portalls one against each cloister and one in the middle and the pavillions for the stairs give it grace enough for the viewes that way." And then, speaking generally, he remarks to Dr. Barrow: "I suppose you have good masons, how ever I would willingly take a further paines to give all the mouldings in great, wee Architects are as great pedants as Criticks or Heralds. And therefore if you approve the designs let the mason take his measures as much as is necessary for the present setting out the worke and be pleased to transmit them to me again, and I shall copy out partes of them at large more proper for the use of the workmen, and give you a carefull estimate of the charge, and return you again the originall designes, for in the handes of the workmen they will soon be defaced that they will not be able from them to pursue the worke to a conclusion."

TRINITY COLLEGE: FOUNTAIN AND KING EDWARD'S GATE.

Robert Grumbold was the mason in charge of the work (he receiving four guineas a month for his services) and



TRINITY COLLEGE: GATEWAY TO RIVER FRONT OF LIBRARY.

TRINITY COLLEGE: THE CHAPEL, LOOKING EAST.

there are records of his going eight times to London to consult Sir Christopher while the building was in progress.

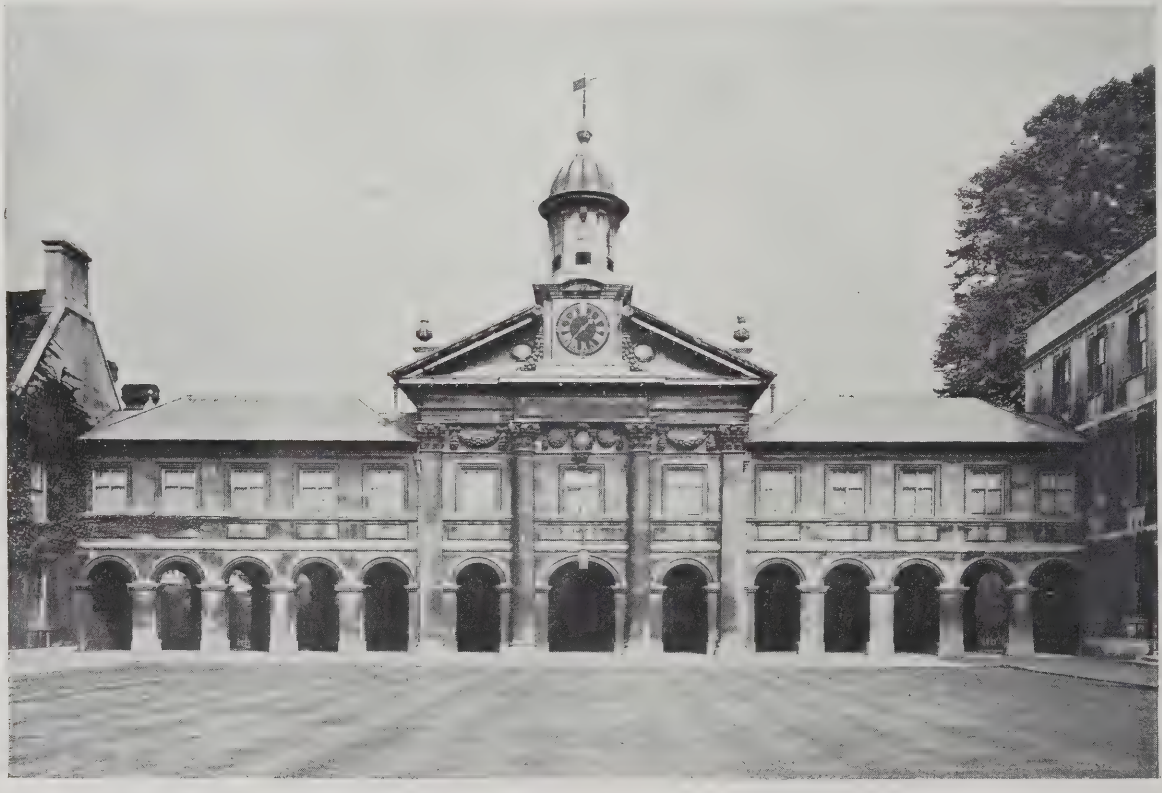
The woodwork, which is of very fine design, and is of Normandy oak, was made by Cornelius Austen, who twice visited Wren regarding it. The woodcarving is by Grinling Gibbons. The statues on the façade to Nevile's Court represent Divinity, Law, Physic and Mathematics; they were cut in 1681 by Gabriel Cibber. The classical composition opposite, at the eastern end of the court (see view on page 45) is probably also by Wren, but it is not nearly so finely detailed. The library, commenced in 1675, was completed in 1695, at a cost of £17,000.

Trinity is fortunate in possessing very little work of the nineteenth century, the chief of what exists being the court to the south of Nevile's Court, which was erected in 1823 by William Wilkins. It does not add to the reputation of Georgian Gothic, but is more pleasant than the same architect's work at Corpus Christi, or Rickman's at St. John's. To a much better period of modern Gothic belong Mr. Beresford Hope's improvements to the lodge and the Master's court, usually known as Whewell's Court, opposite the great gate of Trinity. Mr. Henry Holiday's glass in the chapel is also worthy of notice.

EMMANUEL COLLEGE CHAPEL

EMMANUEL COLLEGE.

Emmanuel College once rejoiced in possessing courts with buildings by Ralph Symons, erected between 1584 and 1586, which, like all the other buildings in Cambridge by that delightful designer, must have been exceedingly picturesque. But his ranges turned their backs ungraciously on the street, and as this did not accord with Classic taste, Sir James Burrough replaced them, on the north and west sides, with buildings of his own design, and in 1719 the south side was rebuilt in a very gross manner, with gigantic pilasters as a central feature. The Classic rebuilding, however, had begun long before with Wren, whose chapel alone remains as worthy of its site. The old chapel had become ruinous, and had not been consecrated, and great scandal was aroused by the puritanical observances asserted to be practised in it. A new chapel was thus proposed, but the undertaking was constantly postponed till the master, Dr. William Sancroft, was appointed in 1665 to the deanery of St. Paul's. "The architect employed," say Willis and Clark, "was Sir Christopher, then Dr. Wren, who at the time was actually engaged with the erection of the new chapel at Pembroke College, begun in 1643; but his employment at Emmanuel College may well have been due to his constant intercourse with Dean Sancroft in respect of the rebuilding of St. Paul's Cathedral. . . The design for the chapel, cloister, and gallery was elaborated by Sancroft, probably in consultation with Wren. His successors in the Mastership informed him regularly of the minutest details of the progress of the building, and sought his advice and help on all occasions." In the chapel of Emmanuel it is interesting to note that Wren followed his uncle's design for the chapel at Peterhouse. The building is centrally placed on the east side of the quadrangle, and is connected with the other buildings by an arcade on either side. Over the arcade is a picture gallery, attached to what was formally the master's lodge, from which a door opens to the organ loft and pew for the master's family. The arcades were built in 1665 and 1667, and it is probable that when Wren began working at Trinity in 1675 he left the completion of the chapel to his pupil, Nicholas Hawksmoor. The original design for the façade, which is preserved among Wren's other drawings at All Souls', Oxford, shows that he proposed to build the gallery of red brick, with stone dressings, presumably to make it harmonise with the older buildings of the quadrangle. It is not known why this intention was not carried out, but Loggan shows that the whole was ashlared from the first. As it exists, however, the exterior is a striking piece of work. The interior is less interesting.



EMMANUEL COLLEGE: CHAPEL AND ARCADE ON EAST SIDE OF QUADRANGLE.

The modern additions to Emmanuel are few. The late Sir Arthur Blomfield erected a new master's lodge and added an oriel to the combination room; a large brick building was added later at the east end of the college garden; and, latest of all, Mr. Leonard Stokes has recently completed a detached block in the same garden, providing new lecture rooms, etc.

CHRIST'S COLLEGE.

The chief feature of Christ's College is the beautiful building in the third court, traditionally ascribed to Inigo Jones, though Evelyn, writing in 1654, makes no mention of the architect of this "very noble erection, especially the modern part, built without the quadrangle towards ye garden, of exact architecture": and it seems likely that if Inigo Jones was really the architect of the building, Evelyn would have chronicled the fact. But in any case it is a remarkable piece of architecture, as a specimen of its period, consisting of three floors of chambers, with a garret-storey in the roof, the length being 150ft. The building is divided into two equal portions by the passage leading into the Fellows' garden; the doorways at the east and west ends of this passage being finished with angular pediments, while those over the staircase entrances have circular pediments. On the first floor, as will be seen from the photograph reproduced on the next page, this arrangement is reversed. Note should also be taken of the parapet, which, with its solids over solids, and voids over voids, is especially well designed. The small semicircular projections are quite characteristic of Cambridge parapets, in which respect a comparison may be made with the river front of St. John's College. In detail the building is not unlike the Pepysian Library at Magdalene College, but it was completed sixty years earlier. Whoever the architect was, it is manifestly, both inside and out, the work of a very able designer.

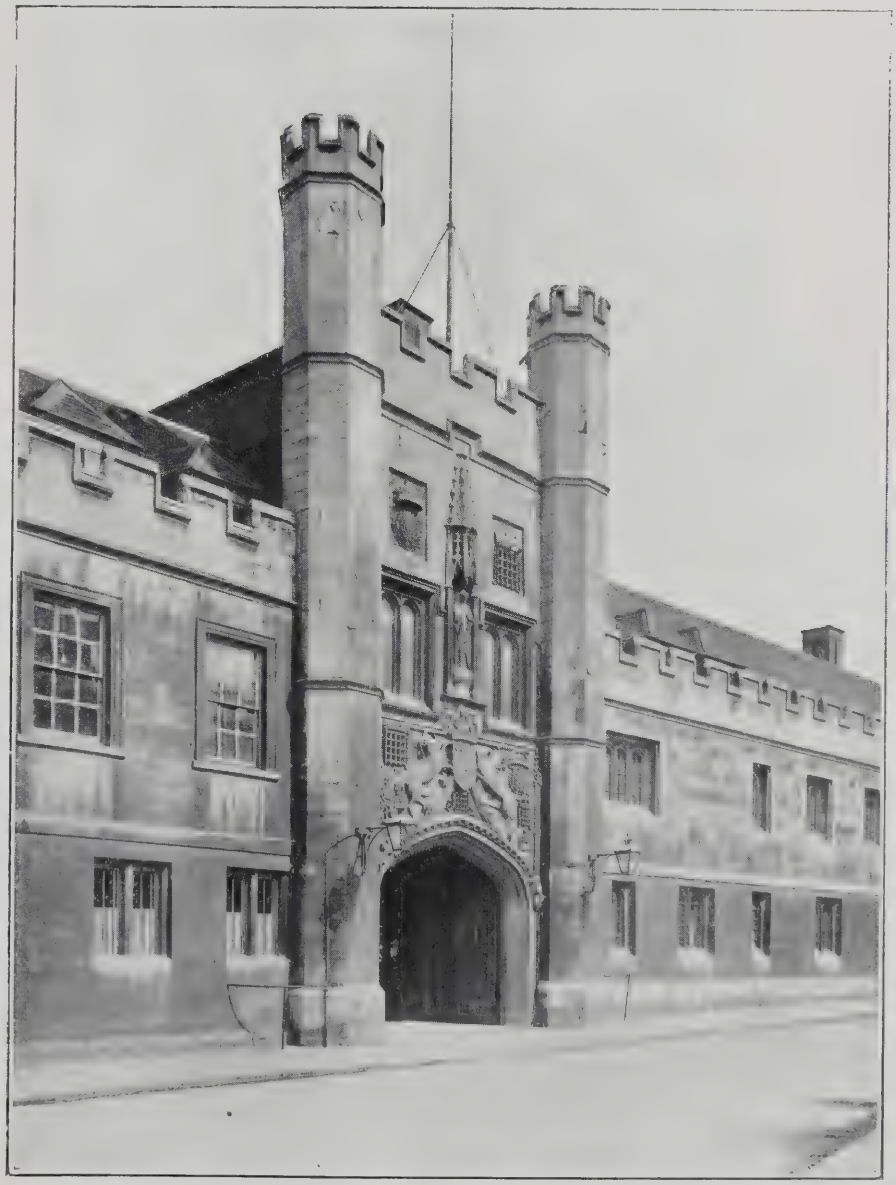
Of the other buildings at Christ's, the chapel, the hall, and the entrance tower call for notice.

The chapel, in the north-west corner of the first court, is substantially the building of Lady Beaufort's foundation, and the small vestries are partly of that date (1505). For the rest, it is very good work of the middle of the eighteenth century imposed on Italian Gothic, the ante-chapel, with its wooden columns, being admirable.

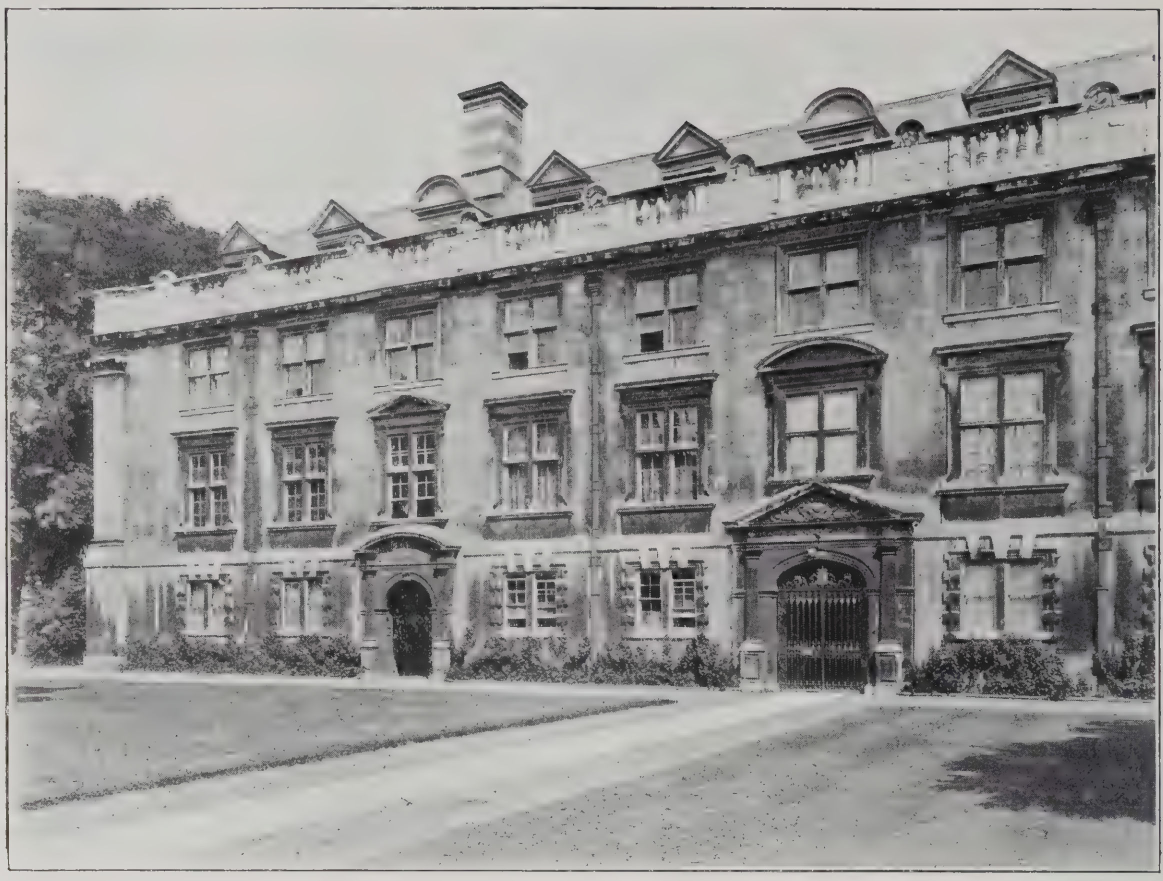
The hall, on the north side of the quadrangle, was very well restored in 1876 by Mr. George Gilbert Scott, one fragment of whose design is the turret illustrated on the next page. In carrying out this work the original roof was first removed. The hall was then taken down completely and rebuilt, the old materials being used again. The walls were raised 6ft., and a new oriel was built on the east side, to give additional space. The original roof, having been thoroughly repaired, was next replaced, and the interior lined with linen panelling exactly copied (by Messrs. Rattee and Kett) from the remains of the original panelling.

The external walls of the college were originally built of blocks of clunch in courses, alternating with red brick. At the end of the seventeenth century the ashlaring of the walls was commenced, and carried on, in successive stages, at later periods, the more recent work of this nature having been undertaken on the front to St. Andrew's Street by the late Mr. Bodley. In this way the appearance of the college—in particular of the entrance gateway—has been considerably altered, but the façade of the gateway, and its battlements, are substantially as shown by Loggan.

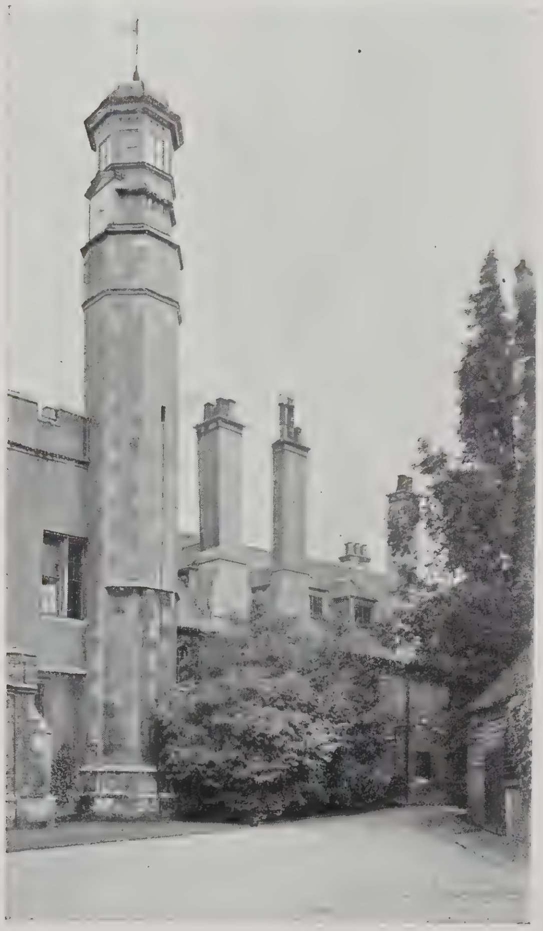
Of modern work at Christ's College there is to be noted the block of chambers by the late Mr. J. J. Stevenson in the third court, to which an angle addition has recently been made from designs by Sir Aston Webb and Mr. E. Ingress Bell.



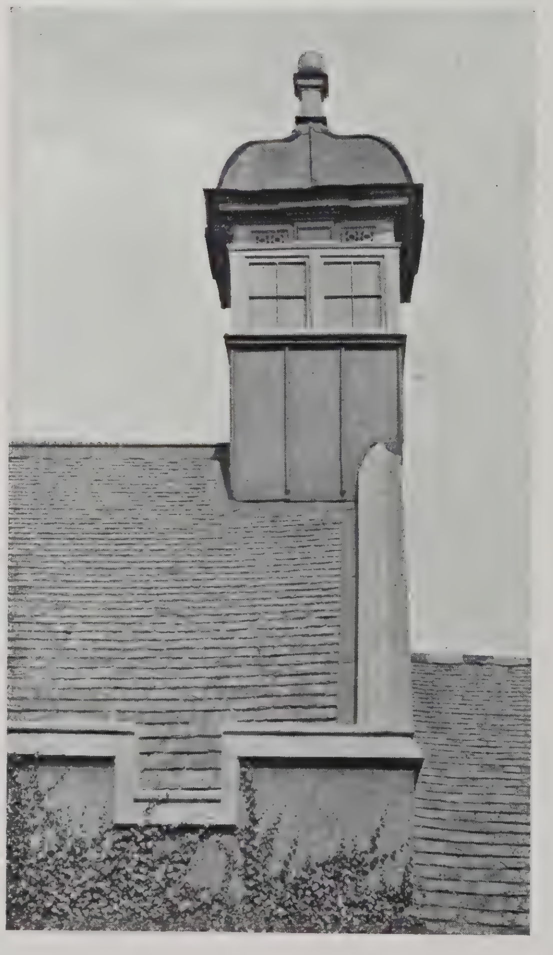
CHRIST'S COLLEGE: ENTRANCE GATEWAY.



CHRIST'S COLLEGE: FELLOWS' BUILDING AT BACK.



CHRIST'S COLLEGE: TURRET FROM MASTER'S GARDEN.



CHRIST'S COLLEGE: TURRET ON HALL.

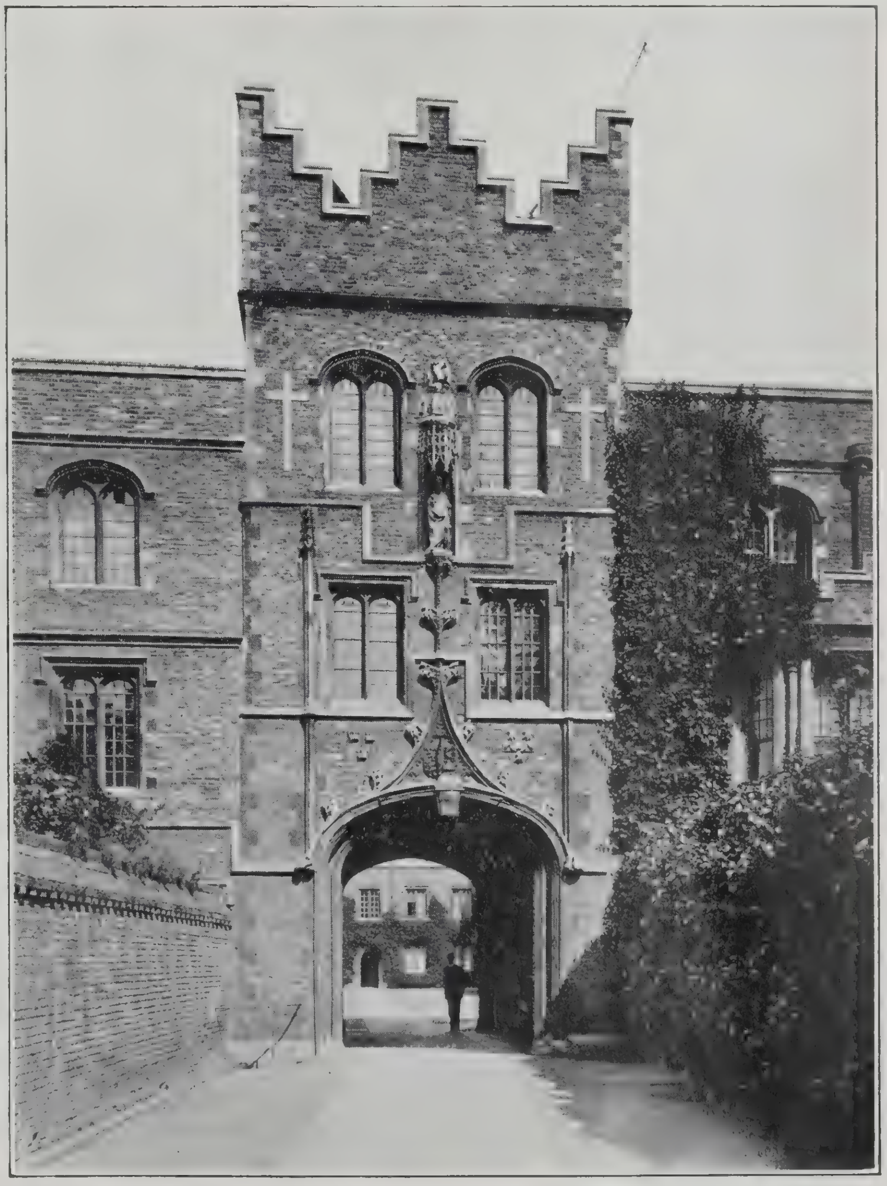
JESUS COLLEGE.

The distinctive features of Jesus College are the cloisters around what was the principal quadrangle in the time of the founder — Bishop Alcock—in the early part of the sixteenth century; the chapel; the entrance gateway; and the library. The cloistered quadrangle, universal in monasteries, is possessed by no other college either in Cambridge or Oxford, although many have cloisters in their secondary courts. Wolsey appreciated the convenience of it, and intended to have given a cloister to Christ Church, Oxford, of which the respond shafts and wall ribs still adhere imploringly to the sides of that noble quadrangle. The cloisters of Jesus College were originally a part of the nunnery of St. Radegund, which the college superseded.

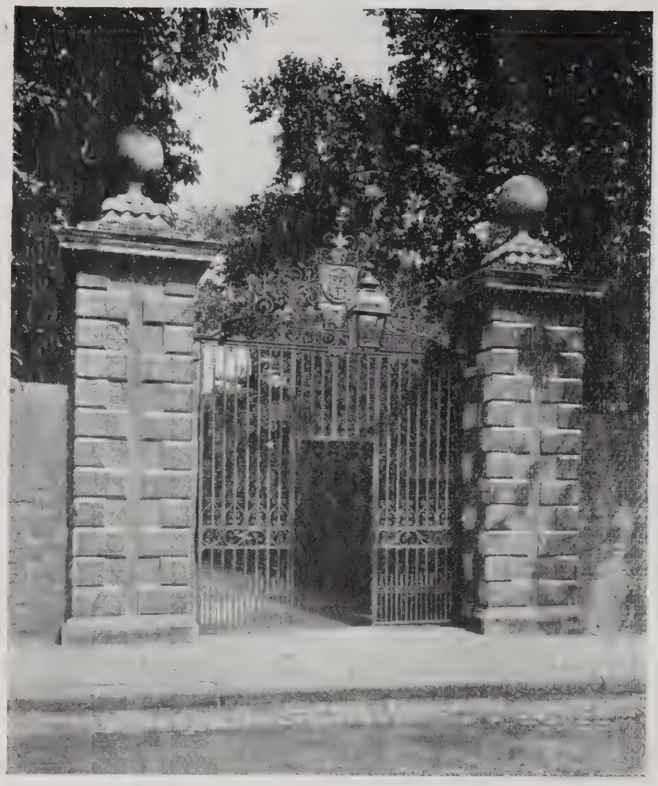
The entrance gateway (here illustrated) is a particularly charming piece of red brickwork, with a yellow diaper. The founder's coat-of-arms, the three cocks, which the college retains as its cognisance, appears on various parts of the tower, but the statue of Bishop Alcock is modern.

The library stretches along the western side of the cloister court, and has a fine old oak roof. The original stained glass is retained in the windows, and here again the cock is seen.

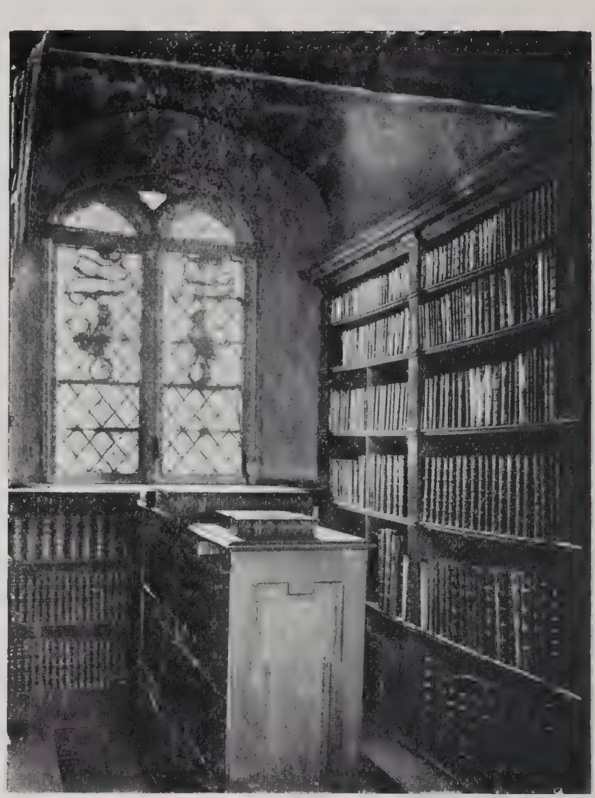
Of the chapel a very good account is given by Mr. Hamilton Thompson, which may here be summarised. Part of it dates from the foundation of the nunnery, but a great deal of it is Early English, and the whole building was remodelled by Alcock on the collegiate principle. "He seems to have cut away the aisles of the convent church, leaving only the north choir aisle; he left the transepts unchanged, save for a set of Perpendicular windows, with scant tracery, which are repeated in the nave and choir. He thus made an ordinary monastic building into an aisleless cruciform church, differing from a college chapel only in that it retains a nave, in which respect it is unique. . . On the whole one can hardly give unqualified praise to Alcock for his treatment of the building, but he made it answer his purpose very well. Moreover, he gave it some beautiful stalls and a screen. Unfortunately, these ornaments offended Georgian taste. The restoration of the chapel in the eighteenth century was a wonderful proceeding. The walls were daubed with yellow relieved by a low black dado; the ceiling was plastered; the best part of the woodwork was removed to Landbeach Church, five miles on the way to Ely; and the central lantern was closed up, so that the fine arcade was completely hidden. To-day, however, we are able to see the chapel without these encumbrances, for the restoration begun in 1845, and completed later by Mr. Bodley, has made it the most historical interior in Cambridge. The south transept with its eastern gallery is for the most part Norman, of a very simple order, coeval with the foundation of the monastery; while the central tower, the choir, and chancel are Early English, save for Alcock's additions on the south side, and the remaining side, which contains Decorated work." The stalls and screen, most of the glass, and the organ are modern, the glass including some splendid windows by Burne-Jones and William Morris. Other modern work at the college includes the brick range on the north side by Messrs. Carpenter and Ingelow, and the large brick building in the chapel court, erected by Mr. Alfred Waterhouse in 1869.



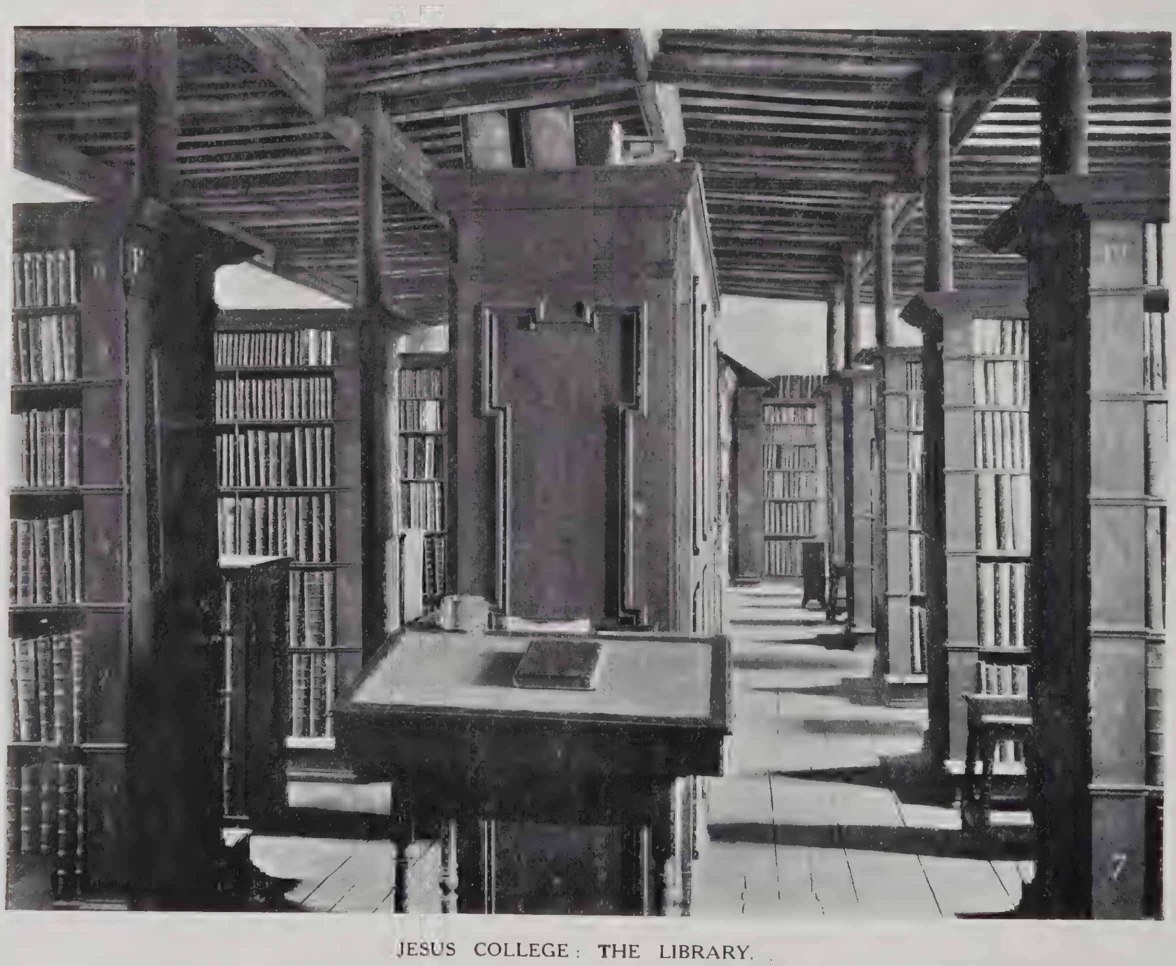
JESUS COLLEGE: ENTRANCE TOWER.



JESUS COLLEGE: ENTRANCE GATE AND PIERS.



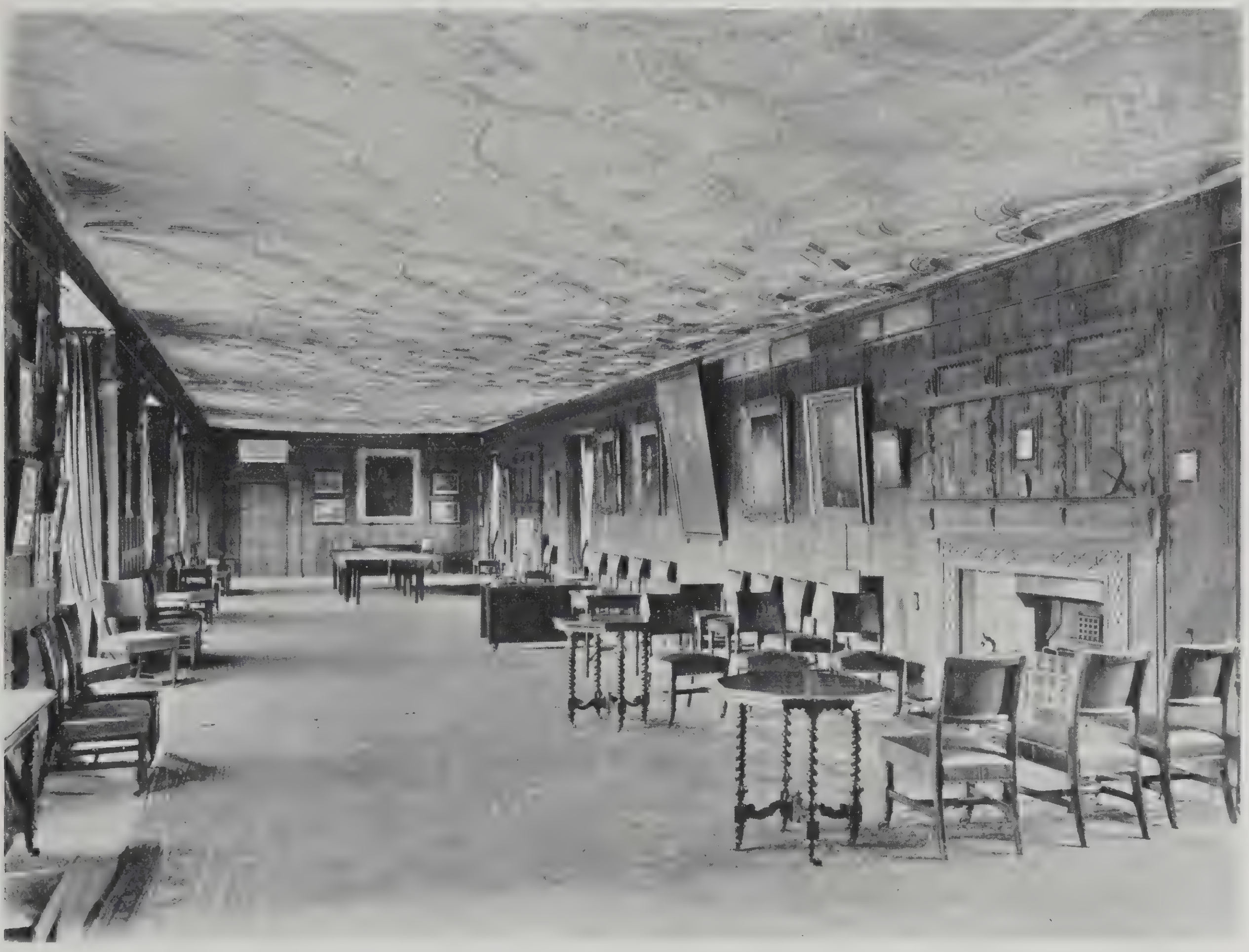
JESUS COLLEGE: BAY OF LIBRARY.



JESUS COLLEGE: THE LIBRARY.

ST. JOHN'S COLLEGE.

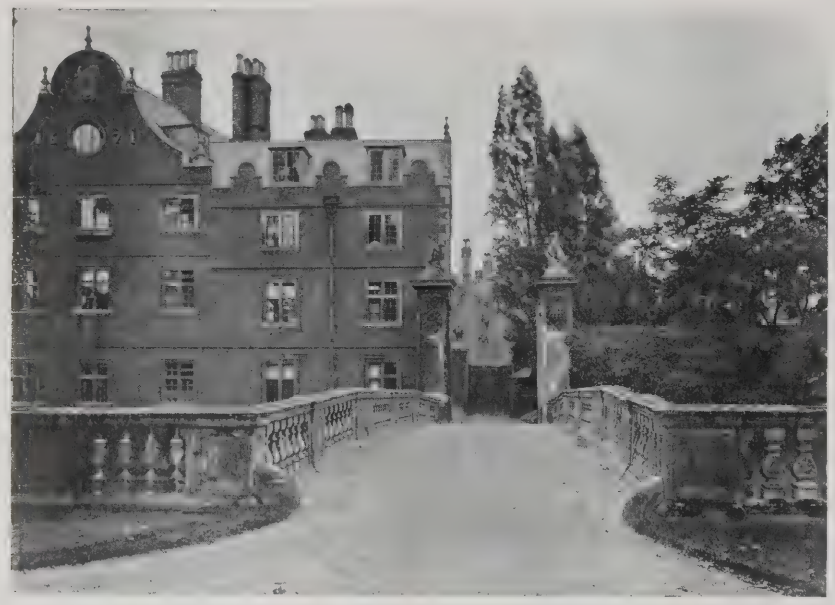
St. John's is the next in size to Trinity, comprising four courts, disposed in succession from east to west. The first is the original quadrangle, which contained all the essential buildings of a college — the hall, chapel, library, master's lodge, and chambers for fellows and scholars; but as the requirements increased, so new courts were added. The buildings, as existing, preserve their ancient appearance to a remarkable degree. The entrance gateway is a particularly fine example of its kind, and from the similarity of its design to that of Christ's, one is led to suppose that the same architect was responsible for both. Each of these two colleges may, for practical purposes, be said to have been founded by Margaret Beaufort, mother of Henry VII., and both gateways are ornamented with similar designs. The fine vigour and dash of the carving is in each case magnificent, but of the two the St. John's College gateway is decidedly the superior, and has claims to be considered as the finest in Cambridge. The sculpture over the arch commemorates the founders, the Lady Margaret and her son, Henry VII. In the centre is a shield bearing the arms of England and France, quarterly supported by the Beaufort antelopes. Beneath it is a rose, above a crown; to the right and left are the portcullis and rose of the Tudors, also crowned; while the ground is strewn with daisies, the peculiar emblem of the foundress. Over all is a niche containing a statue of St. John, which was set up in 1662, after the original figure had been taken down during the Civil War.



ST. JOHN'S COLLEGE: THE COMBINATION ROOM.

To the right of the gateway, on entering, is the new chapel, completed from designs by Sir Gilbert Scott in 1869, a building which, with its huge square tower, quite dwarfs the first court. The erection of this chapel, too, was the occasion for some drastic alterations, for not only was the old chapel taken down, but the master's lodge which existed between it and the hall on the west side of the court was demolished also, and the hall lengthened by two bays, which alterations, added to those made by Essex in 1774, when he gave the south side its present uninteresting front, have made an immense difference to the appearance of the quadrangle.

Within the hall is some remarkably good "linen" panelling wrought in the latter part of the reign of Henry VIII. (1535), before which time hangings had been employed.



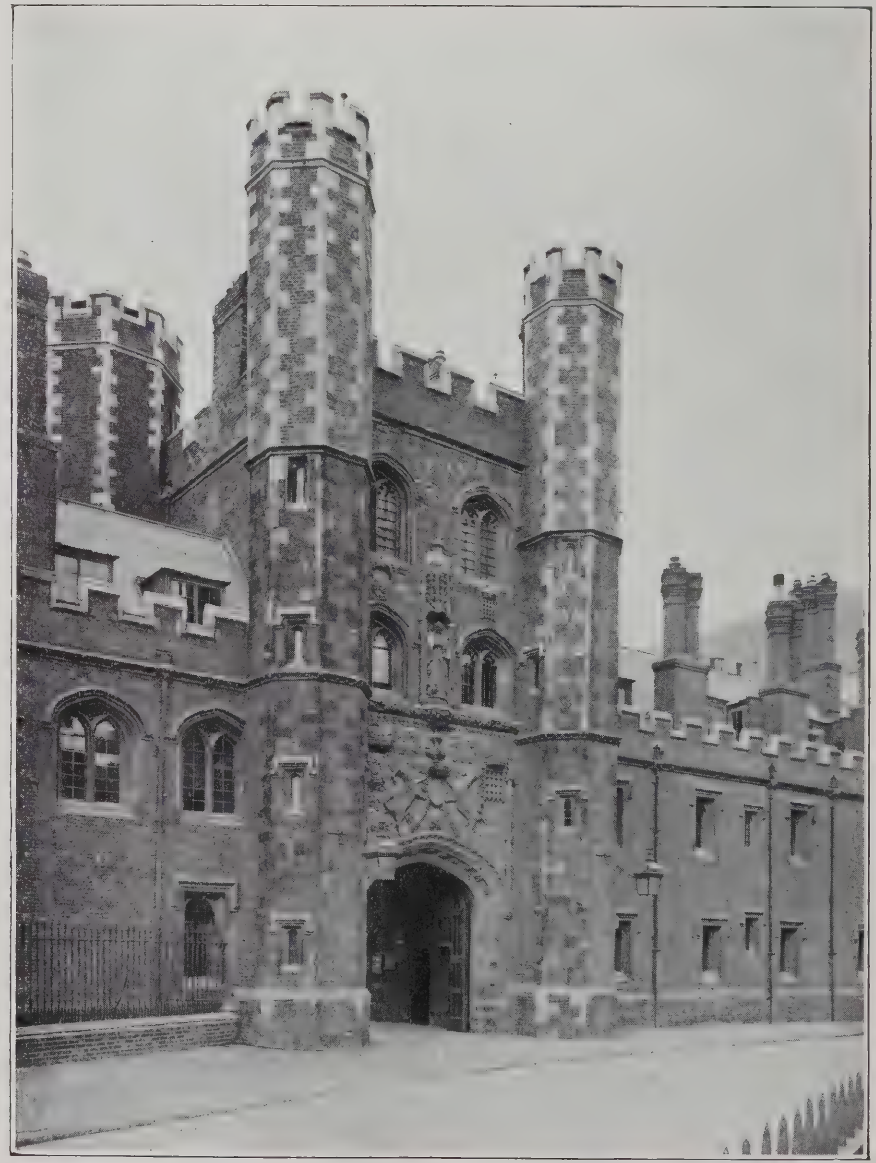
ST. JOHN'S COLLEGE: VIEW ACROSS BRIDGE.

The second court was commenced in 1598 by Ralph Symons, and is a particularly captivating example of brick design. The surrounding ranges are wholly occupied by chambers. In the north range, on the first floor, is the combination room—perhaps the finest apartment in Cambridge. Originally built between 1598 and 1602 as the master's gallery, this magnificent combination room was at one time 148ft. long. Its length has now been reduced to 93ft., but it is still a splendid room, with its panelled walls and fine plaster ceiling. The ceiling is of the same period as that in the University Library, in the master's lodge at Trinity College, and also in another set of rooms in that college, while a further example is to be found over the staircase to the library at St. John's, of which a view is given on the opposite page.

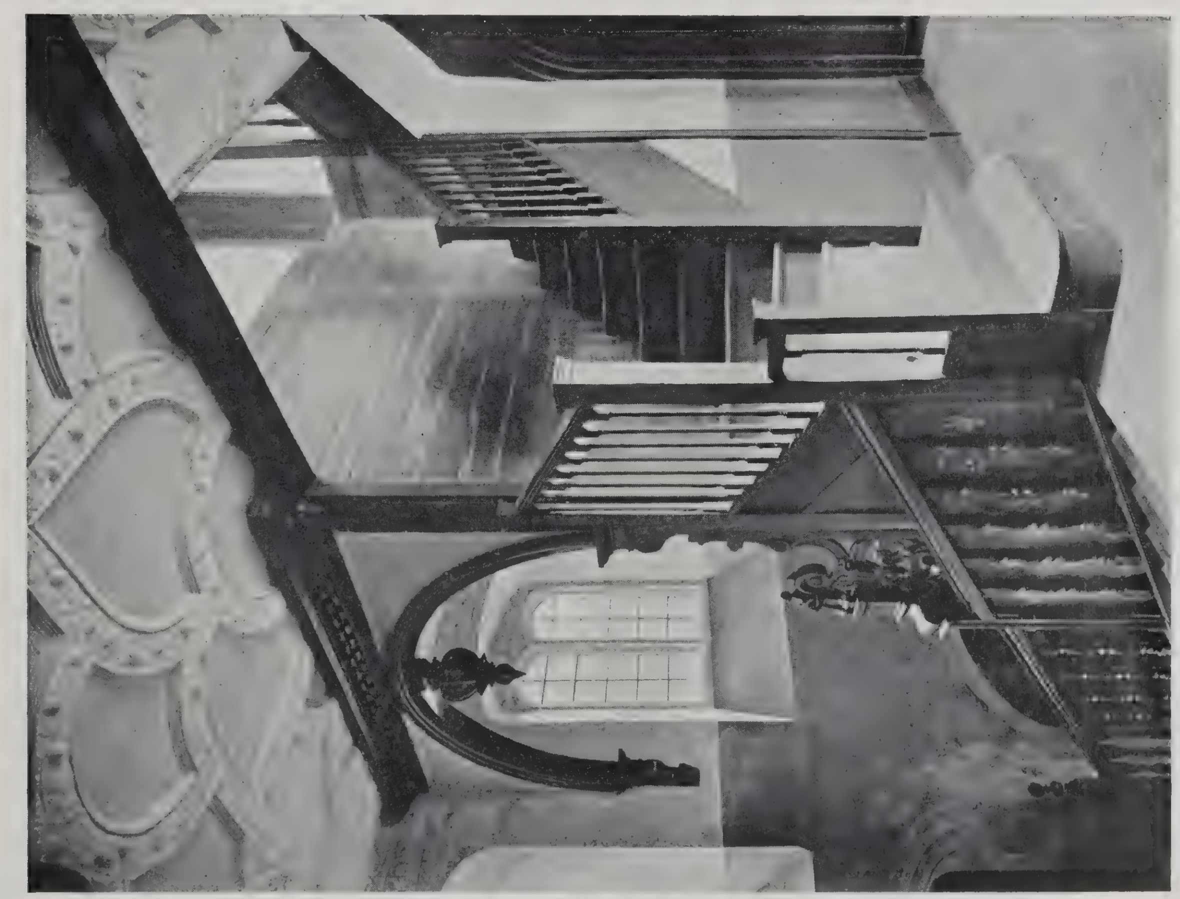
In the third court, which has the library on its north side, is the fine arcade illustrated by the photograph on page 60. This is now generally ascribed to Nicholas Hawksmoor. It is very finely proportioned to the weight it has to carry, and well detailed, though the building loses in effect by reason of the bases of the columns and pilasters being level with the ground. In style it is a thoroughly good specimen of the Wren period, but has been carried out without any attempt to harmonise with the blocks that make up the other three sides of the court. The battlements are, however, an exception, having been copied from those upon the library (one end of which can be seen in the photograph).

Beyond the third court are the two bridges of St. John's, the one to the south being the old bridge, built by Robert Grumbold between 1696 and 1712, while to the north is the "Bridge of Sighs" erected by Rickman in 1830, in connection with the same architect's "New Court" on the other side of the river. This latter bridge forms part of a cloister leading to a vast central gateway, of meretricious design and character, the remainder of the court being no more than a huge barrack.

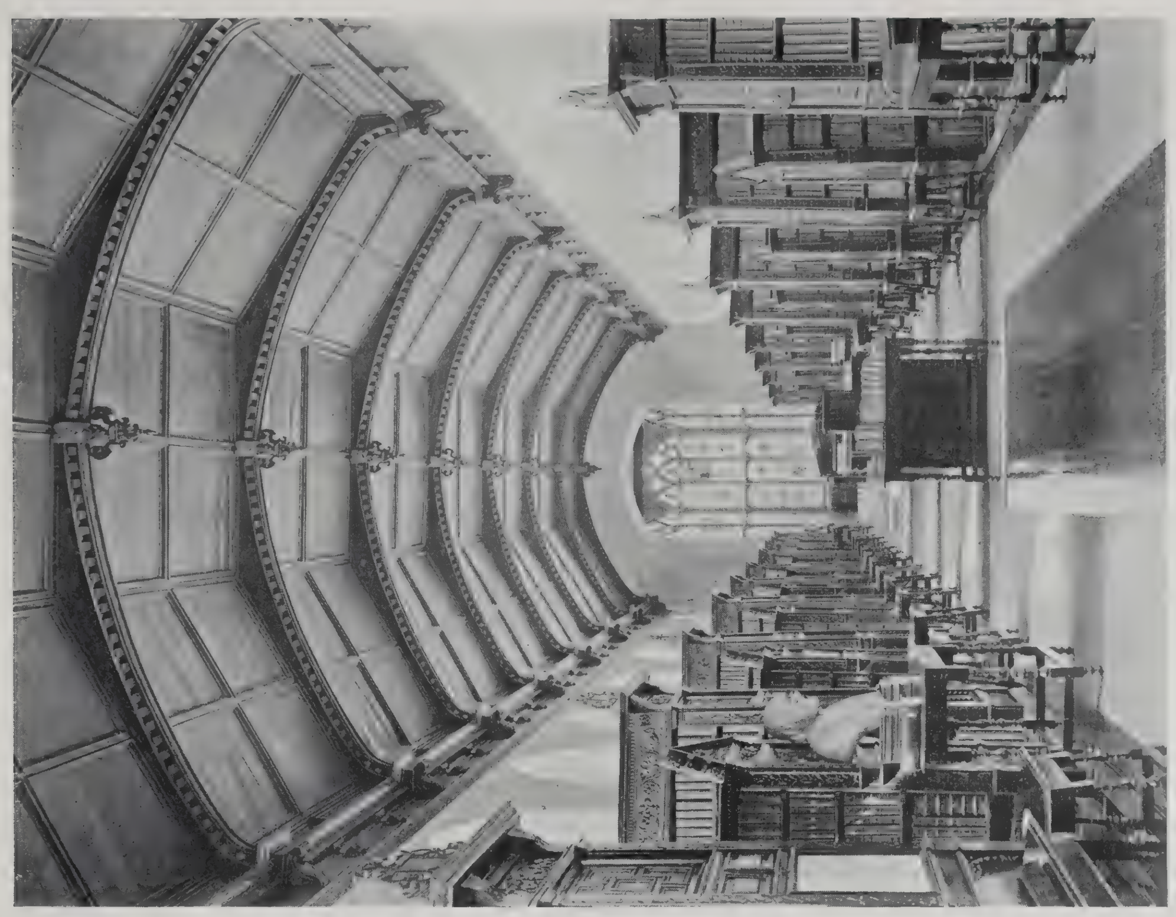
With regard to the old bridge, though Robert Grumbold executed it, there is some doubt as to whether he actually prepared the design, as may be judged from the following entry: "Spent with Mr. Longland and others in advising about a modell for ye Bridge, 0.19.9." The work was commenced on April 20th, 1696, and proceeded regularly for two years, until April 21st, 1698. Then, for some reason unexplained, operations were suspended for two years—till May 8th, 1700; and further delays, of a character disproportionate to the extent of the undertaking, apparently occurred in the succeeding years, so that it was not till Christmas, 1712, that the bridge was completely finished.



ST. JOHN'S COLLEGE: ENTRANCE GATEWAY.

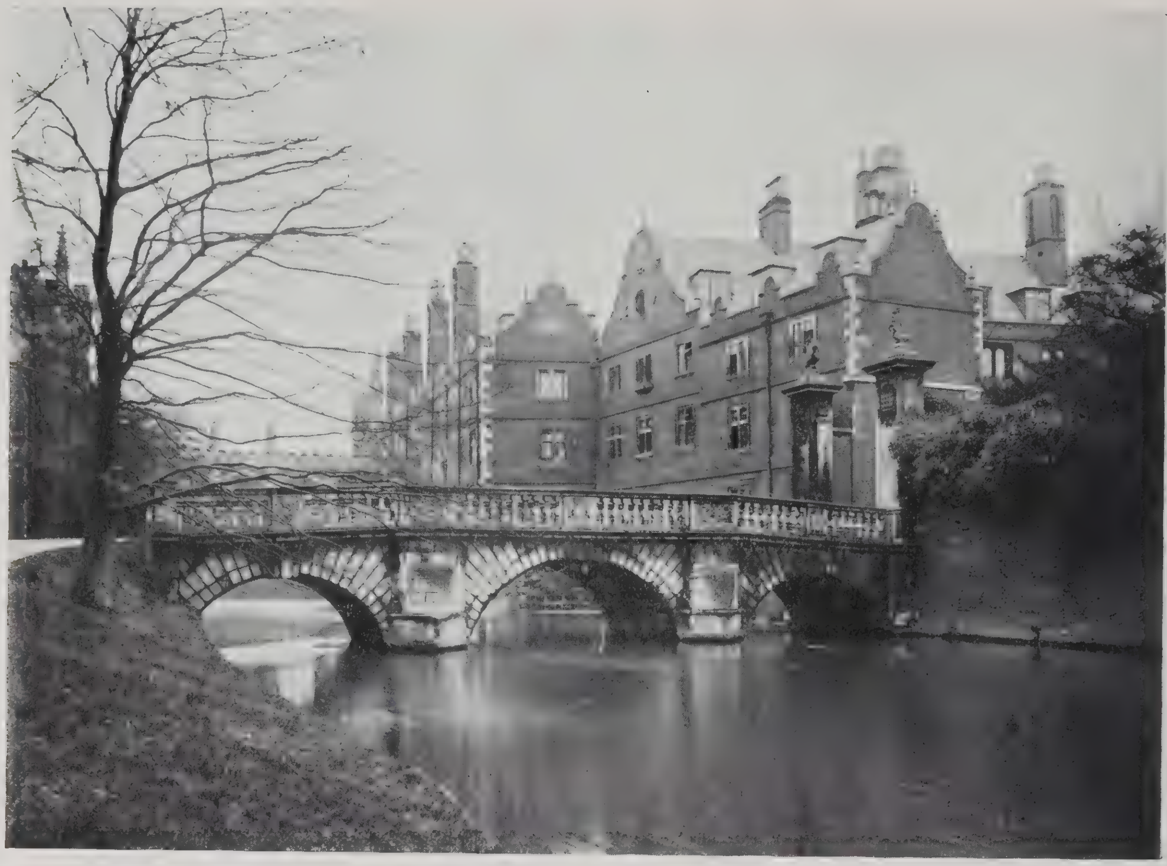


Library Stair.

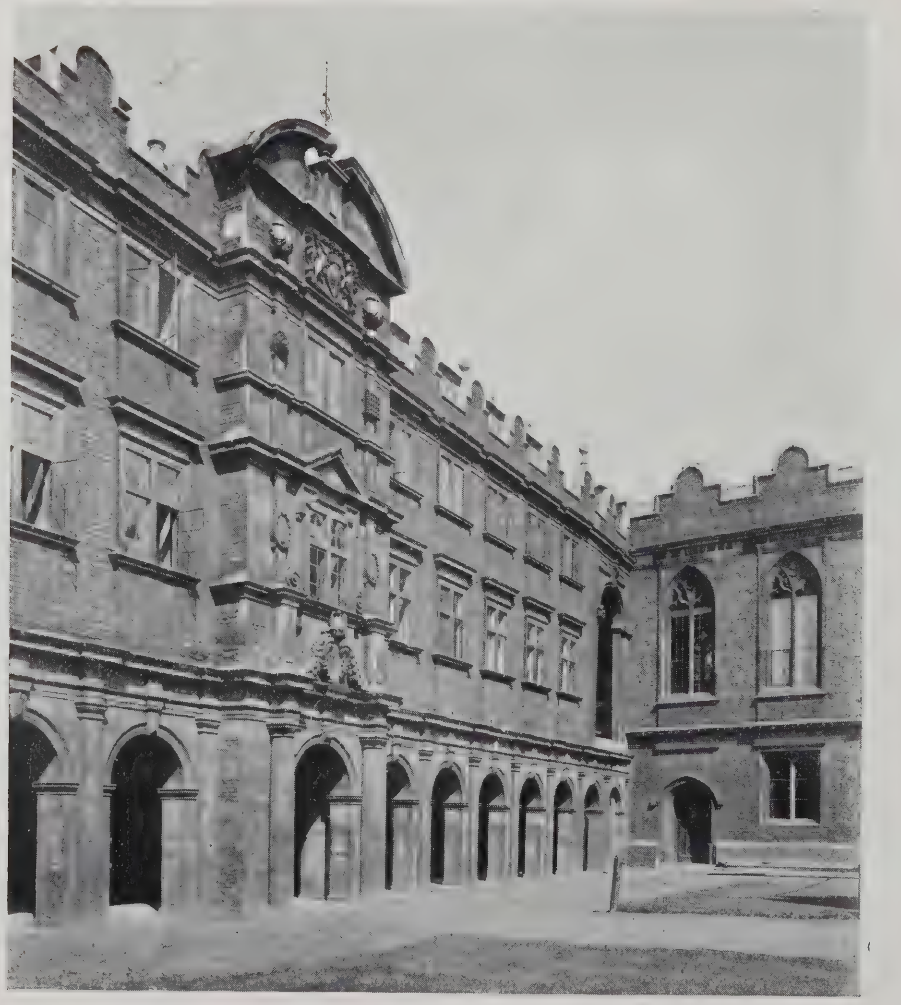


General View of Library.

ST. JOHN'S COLLEGE.



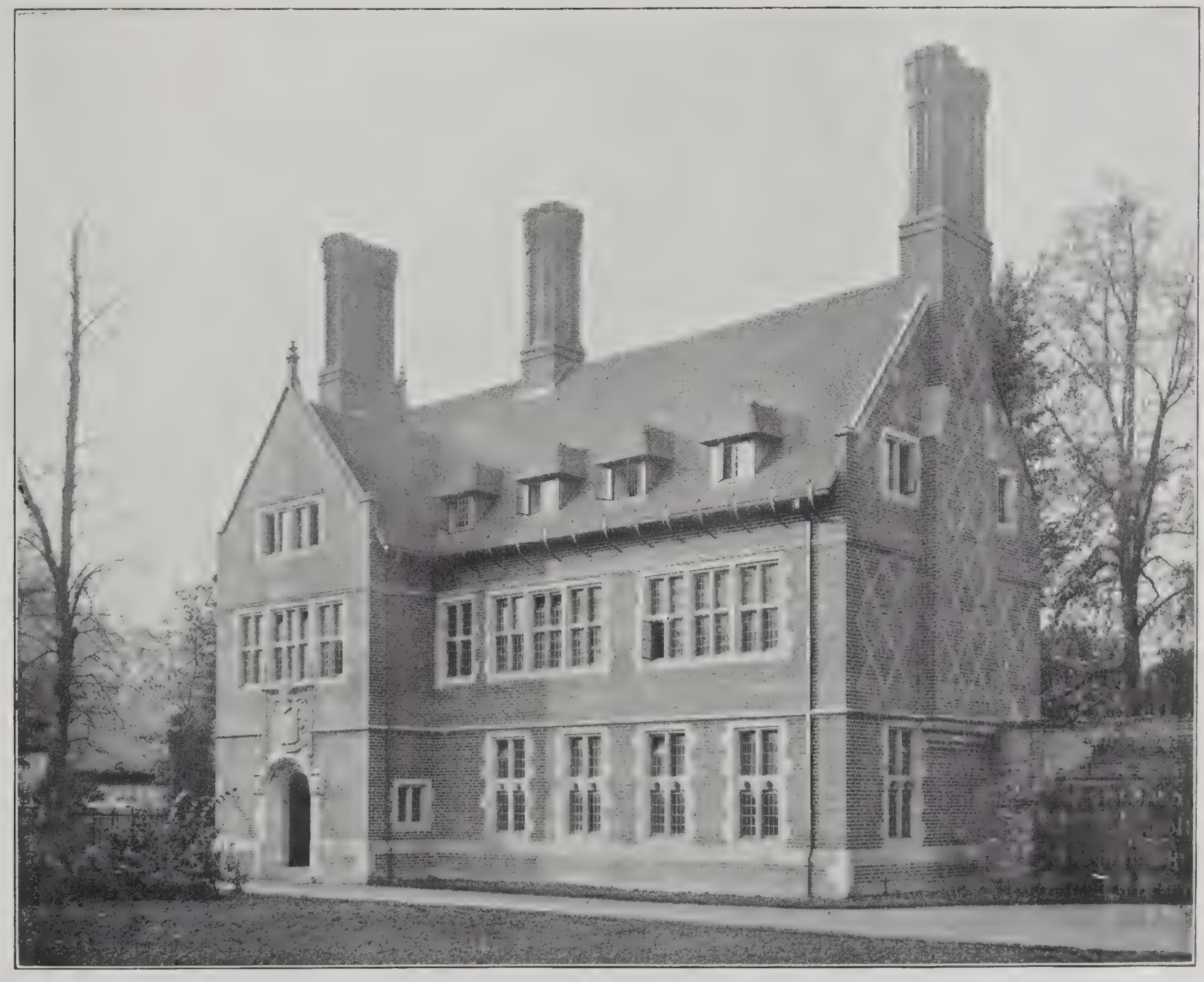
ST. JOHN'S COLLEGE: THE OLD BRIDGE.



ST. JOHN'S COLLEGE: ARCADE IN THIRD COURT.

TRINITY HALL.

Trinity Hall is the legal college of Cambridge. Of its old buildings not much remains, as the college was very largely remodelled in the eighteenth century. At this time the walls of the principal quadrangle received an Italian dress. This process began as early as 1702, by the gradual insertion of sash windows in some of the chambers, accompanied generally by wainscotting them, and, in some cases, the addition of a marble chimneypiece. The greater part of this transformation was due to Sir Nathaniel Lloyd, master from 1710 to 1735. In 1724 the north side of the quadrangle was rebuilt by Charles Cass, mason, and five years later came the "beautifying" of the chapel and south side of the college by James Essex. The hall and butteries were rebuilt in 1743, and it was contemplated to rebuild the whole of the library court from the designs of Burrough and Essex. In 1852 the eastern side of the principal court was gutted by fire, and subsequently rebuilt by Salvin, and, in 1872-3 the range of chambers in what is now called the "New Court" was pulled down and replaced by a structure designed by Mr. Alfred Waterhouse. A new tutor's house was also added from designs by Mr. W. M. Fawcett. Within the past year the delightful new building illustrated on this page has been completed from the designs of Mr. Hastwell Grayson. This contains a large common room and some bathrooms on the ground floor, three lecture rooms on the first floor, and three sets of rooms on the second. The building is of red brick, with dressings of Weldon stone, and is roofed with Ames tiles. The general contractor was Mr. William Sindall, of Cambridge, who also supplied the chimneypiece and other joinery in the common room. The King's Ditch, which formed part of the fortifications of mediæval Cambridge, was formerly under the site of the building, which, on that account, is carried on concrete Simplex piles, varying in depth from 15ft. to 27ft. Messrs. Hope and Sons, of Birmingham, supplied the casements.



TRINITY HALL: NEW BUILDING PROVIDING LECTURE ROOMS, ETC. HASTWELL GRAYSON, M.A., A.R.I.B.A., ARCHITECT.

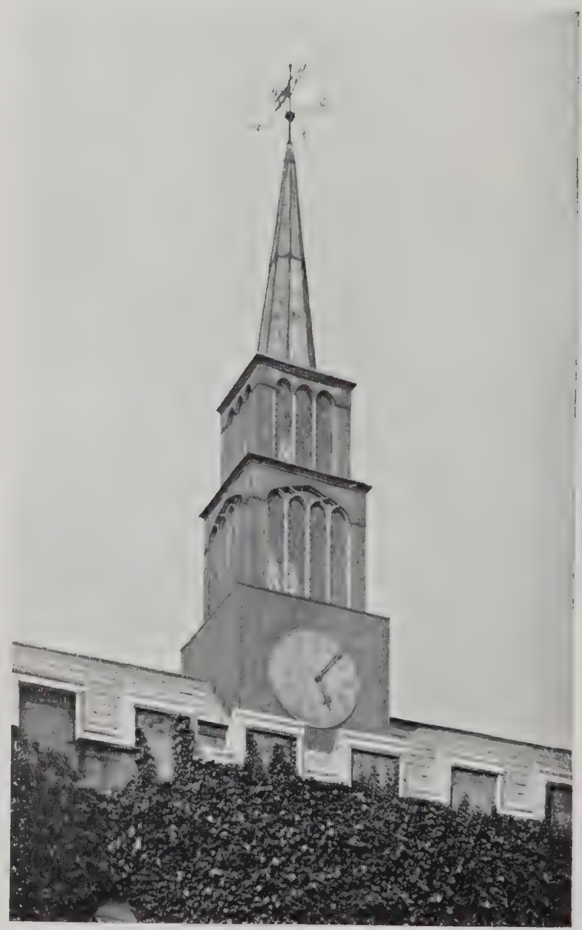
MAGDALENE COLLEGE.

The chief possession of Magdalene College is the Pepysian Library, a detached building which closes what may be called the second court. A photograph of it is given on page 64. The detail appears to be of the early seventeenth century, but apparently the building was not commenced until about 1670, and it was certainly not completed, as the inscription itself shows, until 1724. There was, we know, an intention on the part of the college authorities to build a second court, and the library gives one the impression of having been designed for three sides of a court, and of the wings having subsequently been pressed back against the end building so that the projection is of some inches only. Samuel Pepys bequeathed his library to the college, and directed that it should be put into this new building. His arms are to be seen in the pediment of the middle window, with his motto, "Mens cujusque is est quisque," and the inscription "Bibliotheca Pepysiana, 1724." The wall of the central part rests on an arcade of five bays, and rises high enough to provide a range of well-lighted chambers above the first floor, over which is a balustrade, except at the ends, where it is carried nearly as high as the ridges of the lateral roofs, so as to mask the stacks of chimneys. On the north side the building has very much the appearance of a gentleman's house, with two projecting wings, curiously irregular in length and inclination.

The quadrangle of Magdalene College comprises the hall on the east side, the chapel on the north, and chambers on the south and west sides. Within the hall is a curious staircase, shown by the photograph reproduced on page 64. This leads up to the combination room. It is admirably planned, and in the main is well treated with refined late detail, though the general effect is very appreciably marred by the way in which the staircase has been pieced out with fragments of earlier work, incorporated without much regard to their meaning.

The chapel was completely restored in 1847 by Mr. Buckler (who was also the architect for the new master's lodge), but retains some of its old features, in particular the roof. It also has a window designed by Pugin.

The only new building at Magdalene is the range of keeping rooms, etc., completed this year from designs by Sir Aston Webb and Mr. E. Ingress Bell. This is on the south side of the college, facing the river Cam, to which it presents a frontage of 70ft., with a depth of 30ft. It comprises on the ground floor three sets of keeping rooms, each 18ft. by 14ft., and attached bedrooms 14ft. by 8ft., with the necessary gyp rooms and accessories. In addition there is provided on this floor a lecture room 34ft. by 23ft. On the first floor are three similar sets of rooms, and over the lecture room a dons' keeping room, study, and bedroom, with gyp rooms, etc., as before; while on the second floor there are three sets of rooms with gyp rooms as before, and a fourth larger set with a keeping room (23ft. by 17ft.) and a bedroom (17ft. by 17ft.). At the western end, and joining the south-east angle of the hall block, new kitchens, scullery, stores, etc., have been added, and the present kitchen offices rearranged. The building stands upon a raft of Portland cement concrete, 4ft. thick, and is constructed of local bricks with a facing of 2in. small-sized bricks of purplish brown hue. On the north front the arms of the college, of the master, and of Lord Braybrooke, with the Royal Cypher, and that of the donor, the Rev. Mynors Bright, appear in the main cornice, and the fact that the buildings are in the main due to the munificence of the latter is recorded on a tablet in the centre oriel.



MAGDALENE COLLEGE: TURRET ON HALL.

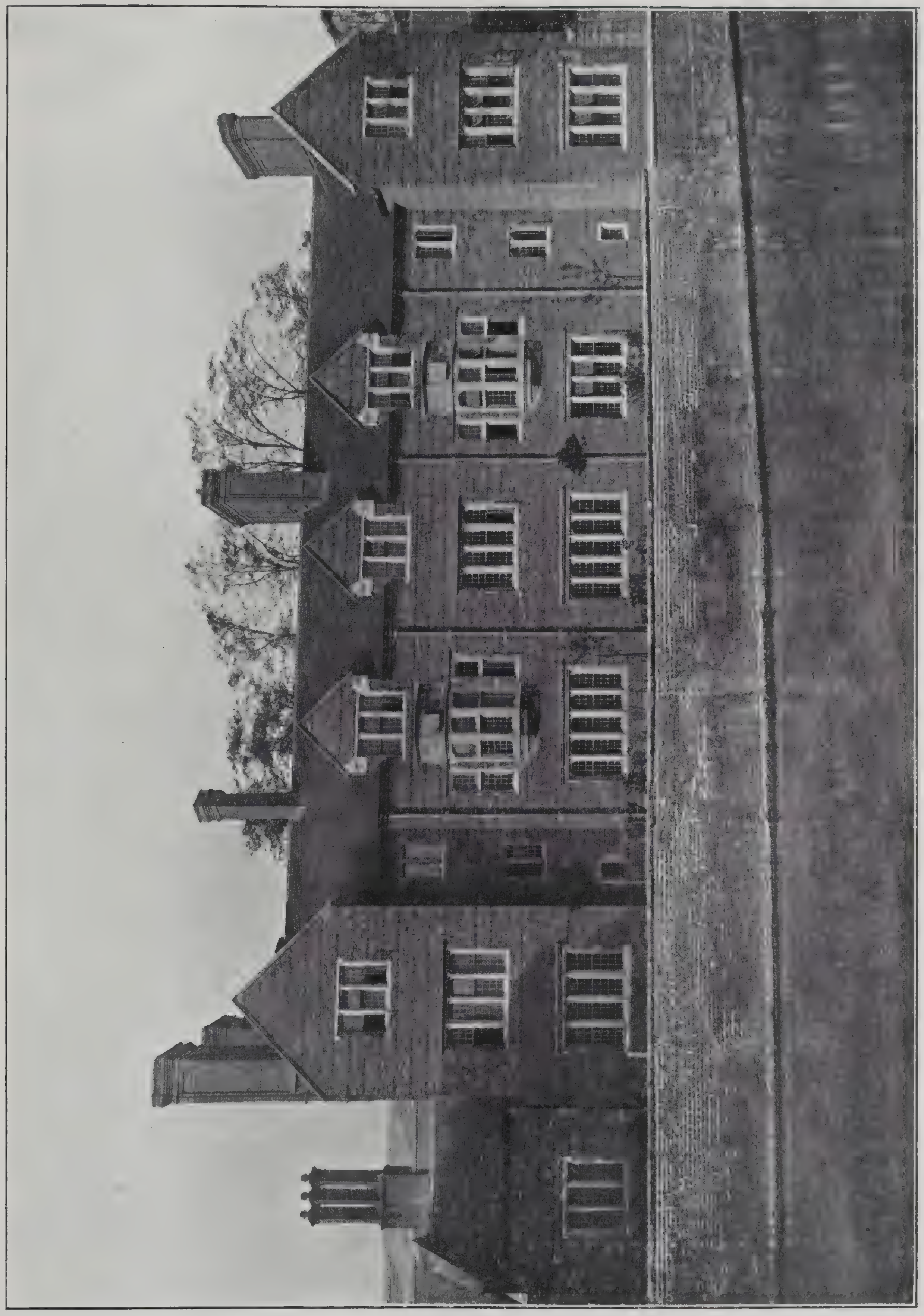
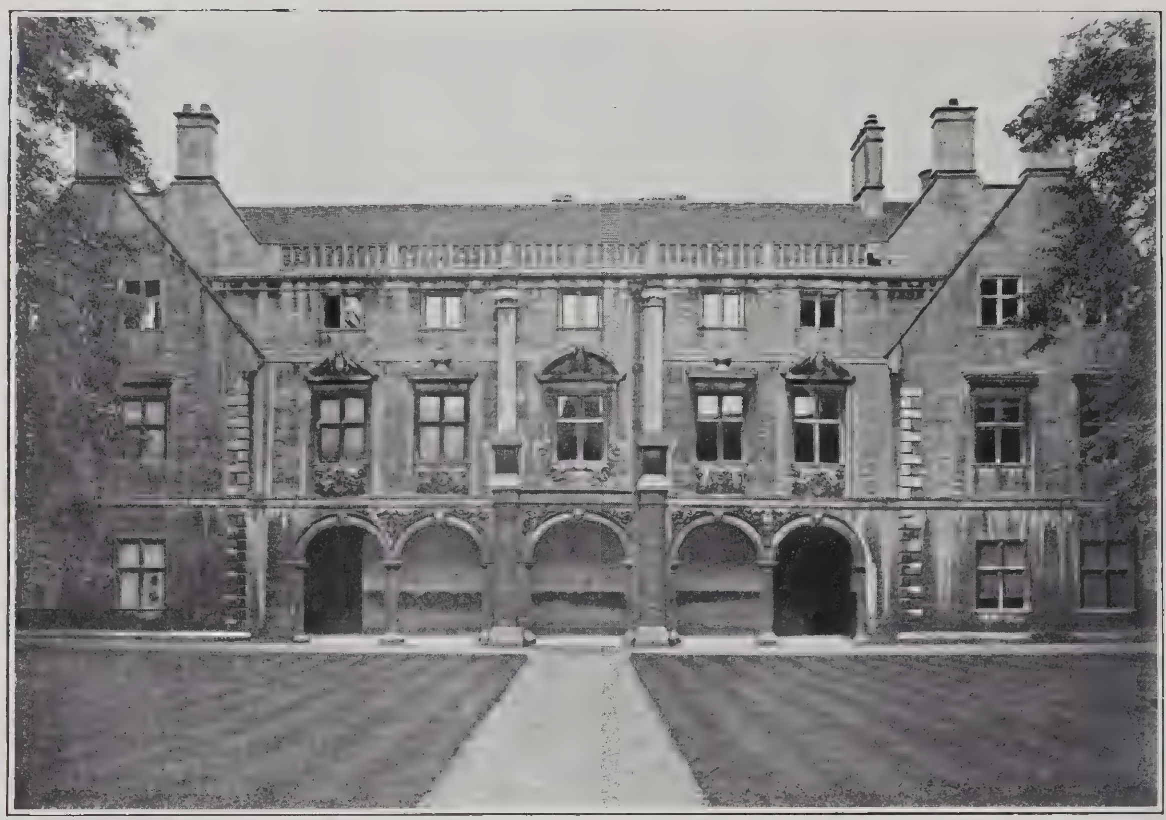
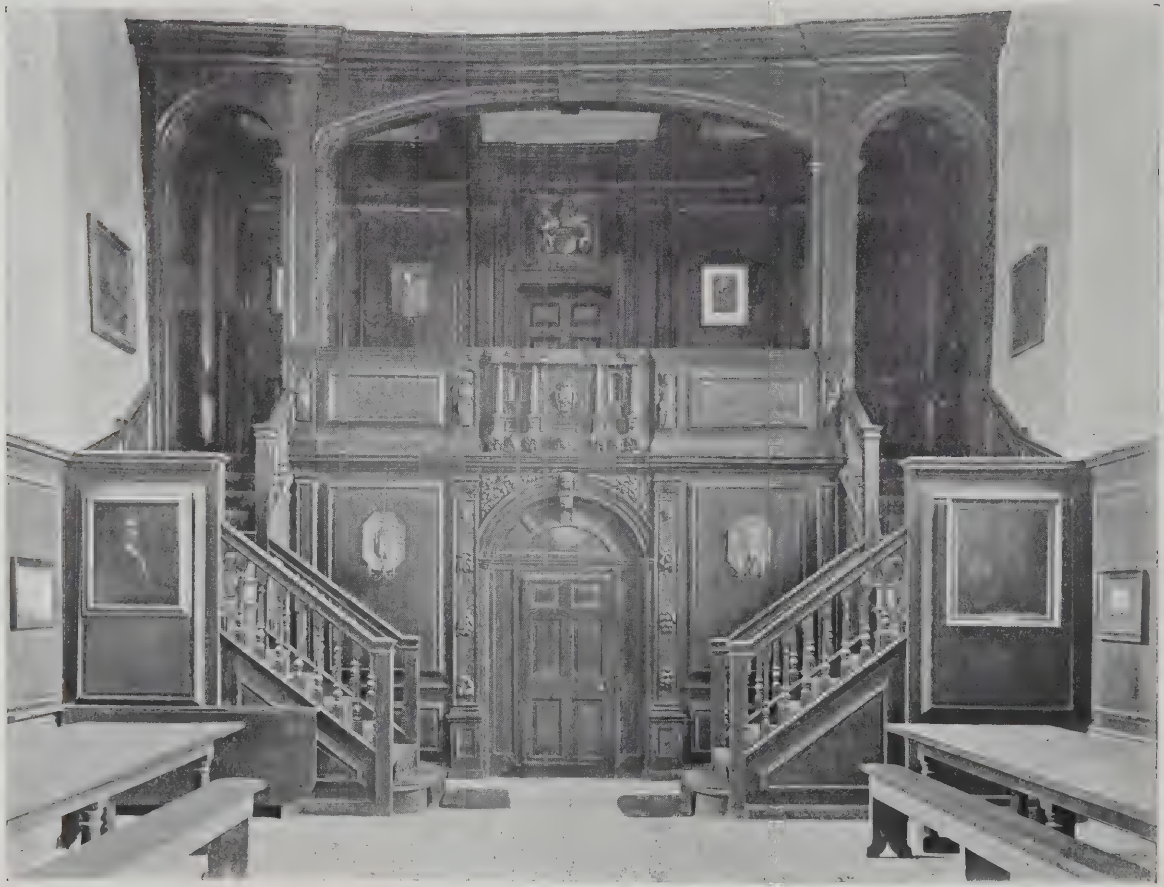


Photo: E. Dockree.

MAGDALENE COLLEGE. NEW KEEPING ROOMS, ETC. SIR ASTON WEBB, C.B., R.A., AND E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.



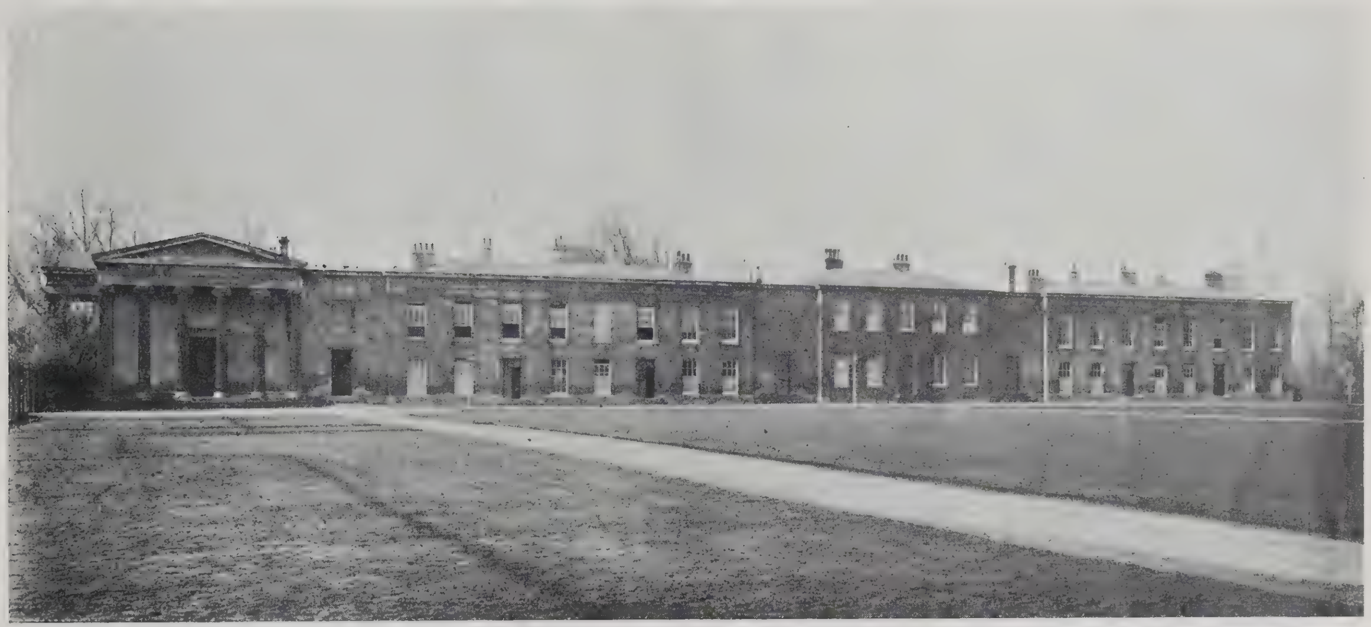
MAGDALENE COLLEGE: THE PEPYSIAN LIBRARY.



MAGDALENE COLLEGE: STAIRCASE IN HALL.

DOWNING COLLEGE.

This college was founded by the will of Sir George Downing, who died in 1749. The ubiquitous Essex seemed at first to be the likely architect for the buildings. He certainly appears to have prepared a design, and it is on record that other designs were prepared subsequently by William Wilkins, James Wyatt, and Lewis Wyatt. In the spring of 1806 the designs by Wilkins and Lewis Wyatt were submitted by the Court of Chancery to the judgment of three architects, George Dance, J. Lewis, and S. P. Cockerell, who decided in favour of Wilkins's design. The building scheme was then commenced, but only the east and west ranges were erected—and these not wholly finished—and the college has never since been completed. The original scheme comprised a quadrangle 300ft. square, nearly equal in area to the great court of Trinity. In the centre of the east and west ranges is a dwelling-house for professors, with detached blocks of chambers completing these sides. The chapel and library block was to close the south side of the quadrangle, flanked by the master's lodge on one side and the hall on the other. The chapel was to be entered through an octastyle portico giving access to a vestibule or ante-chapel; the library could also be entered from the vestibule, or from a door at the west end, through a hexastyle portico.



DOWNING COLLEGE: WEST RANGE.

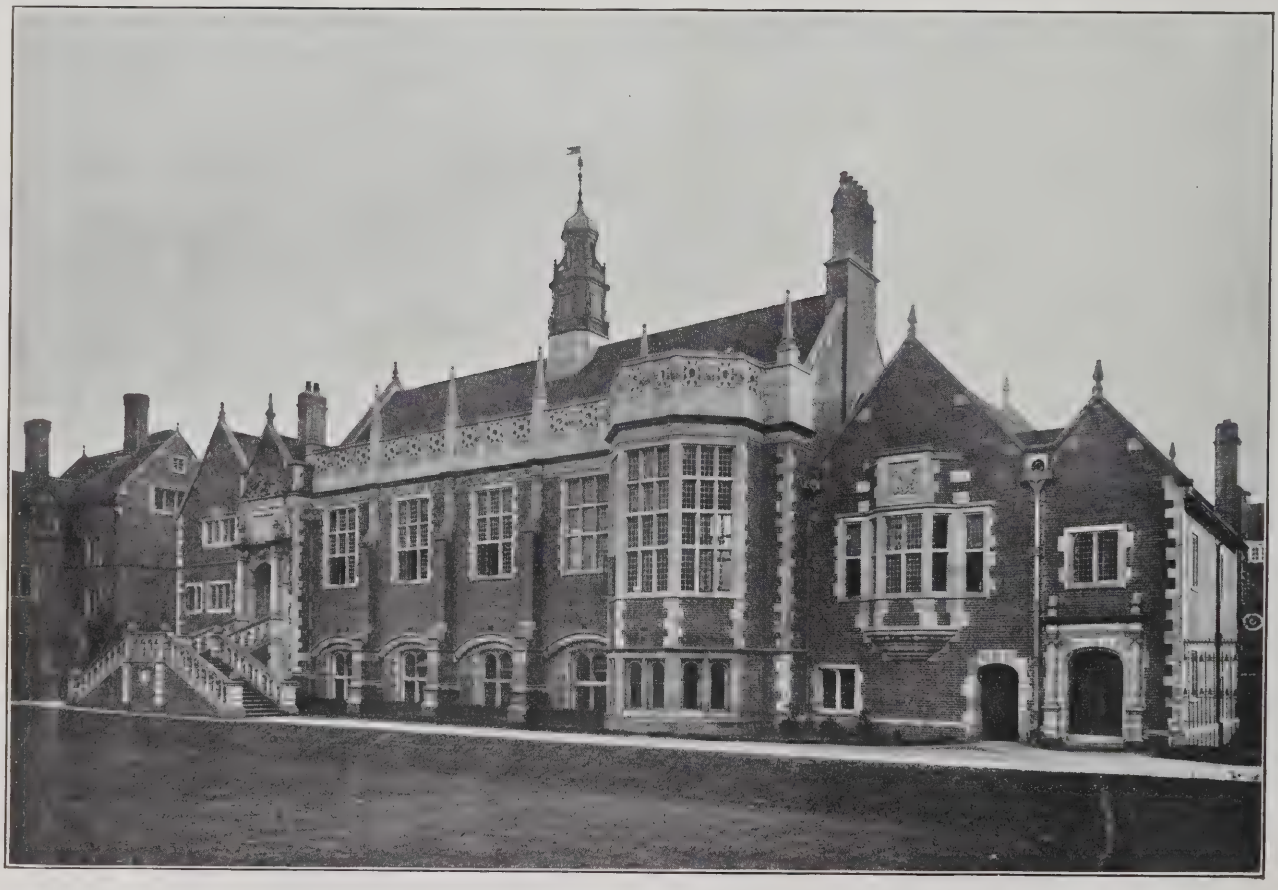
On the north side there were to be two ranges of chambers, wide apart, and north of them again the "Propylæum," or gate of entrance, flanked by a lecture room on the west and a porter's lodge on the east. The "Propylæum" was designed in the Doric style, while the chapel and library, on the opposite side of the quadrangle, were Ionic. An alternative plan placed the "Propylæum" at the north end of the avenue opposite the Museum of Human Anatomy, but this arrangement, if ever seriously entertained, was soon abandoned, probably on account of the obvious inconvenience of placing the porter's lodge and the lecture room so far from the rest of the college.

Of the original scheme, as stated above, only the east and west ranges have been built. From the time these were erected, early in the nineteenth century, no further attempt to complete Wilkins's design was made until 1870, when it was decided that "it is desirable to complete the east side of the court, and to make such improvements in the hall and combination room as may be deemed necessary." The architect selected was Mr. E. M. Barry. Three years were occupied in completing the blocks, at a cost of £21,281. Barry's work includes the northernmost block of chambers on the east side; the completion, externally, of the west side, with the addition of two rooms to the law professor's house in the centre, contrived in the space between it and the block of chambers to the north; and some judicious alterations to the hall at the south end of the west side (the Classic portico of which is seen in the above photograph).

As it exists, Downing has rather a forlorn appearance, its two sides being so far apart. It is to be hoped therefore that at some date in the near future sufficient funds will be forthcoming to complete the north and south sides of the court. The design of the two existing ranges is extremely frigid, and without the enrichment given by the pillared end blocks would be almost painfully bare; so that in any new buildings that may be erected it would be particularly desirable to introduce a more exhilarating tone.

SELWYN COLLEGE.

Within the past twenty-five years a number of new colleges have been added to Cambridge, as the outcome of several movements, either religious or social in character. Among these is Selwyn College, which was founded, in memory of Bishop Selwyn, to provide the means of acquiring a University education at less expenditure than was possible in the older colleges. The foundation stone was laid in 1881 and the college opened in 1882. The buildings first erected, from designs by the late Sir Arthur Blomfield, comprised chambers and master's lodge, forming two sides of a quadrangle, to which was added, in 1895, the chapel. The dining hall and library were for long housed in a temporary wooden structure with corrugated iron roof, and it was not till last year that the new dining hall illustrated above was completed from designs by Messrs. Grayson and Ould. Kitchens and storerooms were permanently built on the site of the new hall, and were finished with a concrete flat. These kitchens decided the length and breadth of the hall, and the contour of the oriel. It was found advisable, however, to increase the thickness of the side walls, and on this account the arches shown in the photograph were introduced.



SELWYN COLLEGE: THE HALL. GRAYSON AND OULD, ARCHITECTS.

The hall occupies the south side of the court, with a wing on the east side, adjoining the master's lodge, containing storerooms, sculleries, heating chamber, and the bursar's offices, etc. (When these buildings were designed and half built, both Mr. E. A. Ould, the architect, and Canon Appleton, the master, died almost simultaneously.)

The screen in the hall and the buildings on the west side of the hall (to the right in the accompanying view), comprising servants' hall and the fine combination room, were added in 1909.

The buildings are faced with brick. Ancaster stone dressings are used very sparingly on the south front, facing Sidgwick Avenue, but more lavishly on the north front, facing the court. The general contractors were Messrs. Cornish and Gaymer, of North Walsham, who also supplied much excellent joinery, including the screen. The lead heads and downspouts are by Mr. Hunt, of Hoddesden. Messrs. Crittall supplied the casements, Messrs. Weldon the glass, and Messrs. Killick and Cochran installed the heating and hot-water service. The stone carving is by Mr. E. O. Griffiths, of Liverpool. The arms which appear in the panel over the combination room oriel are those of the Selwyn family, who were generous donors to the building fund. The small tablet at the foot of the stairway leading up to the hall is to the memory of Canon Appleton.

SIDNEY SUSSEX AND OTHER COLLEGES.

In addition to the colleges described and illustrated in the foregoing pages, there remain five to be dealt with—Sidney Sussex, Ridley Hall, Girton, Newnham, and Westminster—a brief description of each of which is given below.

Sidney Sussex College.

It is lamentable to record that scarcely a vestige remains of the old buildings of this college by Ralph Symons. Essex, in the eighteenth century, built a new chapel here, but it was not till 1830 that the real damage was done. Gothic was then coming into favour, and inspired (!) perhaps by Wilkins's work at Corpus Christi, King's, and Trinity, the authorities of Sidney Sussex decided to remodel their buildings. The chosen architect was Sir Jeffrey Wyattville, who did his work so thoroughly that the college now remains as the most insipid, architecturally, in Cambridge, despite the excellent new range of buildings, forming two sides of a court, which were added by the late Mr. J. L. Pearson.

As shown in Loggan's view, the college consisted originally of only the present north court, or "Hall Court," as it is termed. This was entered through a gateway of fanciful design in the middle of the wall which closed it on the west side next the street. The north and south sides of the court were occupied by ranges of chambers in three floors, and the east side was formed by a building comprising the hall, butteries and kitchen, with master's lodge above. The chapel, over which was the library, was formed by fitting up the ruinous walls of a building that had been left standing in the area south of the quadrangle—the sole remnant of the Franciscan convent that had originally occupied the site.

When asked by the authorities to undertake the rebuilding of the college, Wyattville prepared a series of drawings, dated March, 1821, representing the buildings as they then existed, with alterations and enlargement. Two styles of architecture were offered, the one the plain pseudo-Elizabethan Gothic which was adopted, the other the restoration of the genuine Elizabethan in which the college had been originally designed, but which had been gradually deteriorated by the removal of the characteristic ornaments at the angles and crowns of the gables, of which latter one remained on the east front.

RIDLEY HALL. C. L. LUCK, ARCHITECT.

Ridley Hall.

Ridley Hall was founded as a training college for those who, having already graduated from some college, wish to proceed to Holy Orders; being, in this respect, the counterpart of Wycliffe Hall at Oxford. The foundation-stone was laid on October 17th, 1879, and the first block, comprising the principal's residence, the Carr Library, and eight sets of students' rooms, was opened in 1881. The second portion undertaken, comprising hall, common room, vice-principal's rooms, and twelve sets of students' rooms, was opened in October, 1882. In 1890 a large new block of buildings was erected, containing rooms for the tutor and ten students. At the same time a chapel was built at the sole expense of a former student. The buildings of Ridley Hall are faced with red bricks with Ancaster dressings. Though unpretentious in design, they are sturdy in character, and worthy examples of modern Gothic. Mr. C. L. Luck was the architect of the older buildings, and Mr W. Wallace the architect of the chapel and southern range. For the accompanying illustration we are indebted to the editor of "Church and People."

Girton and Newnham Colleges.

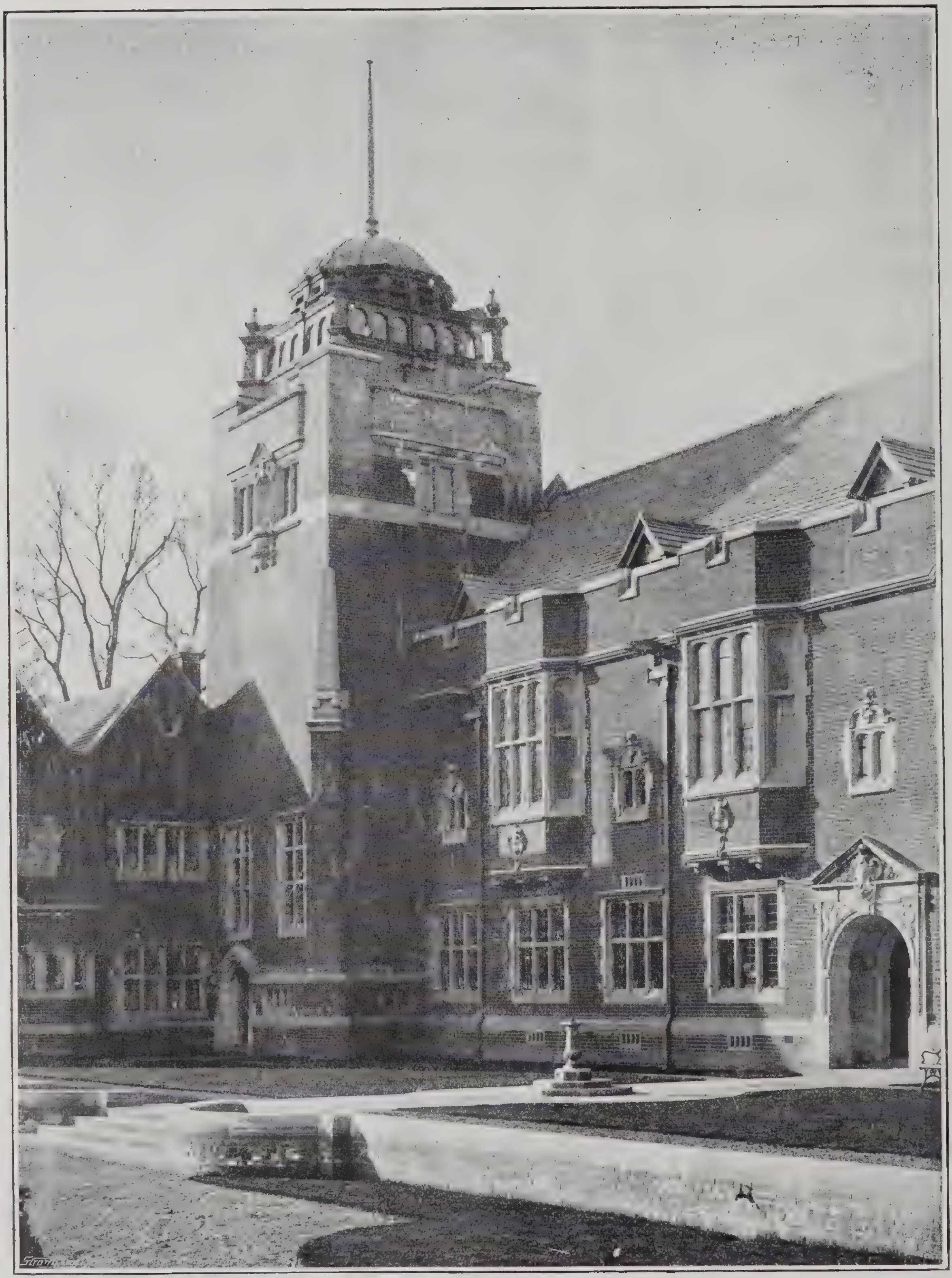
These two colleges, providing University education for women, are the outcome of one of the movements referred to at the head of these notes.

Girton, the earlier of the two, takes its name from the village of Girton, in which it is situated, about two miles out of Cambridge. The first buildings were

NEWNHAM COLLEGE. BASIL CHAMPNEYS, M.A., ARCHITECT.

erected in 1879, and the later blocks completed about 1888—all from the designs of Mr. Alfred Waterhouse.

The architect of Newnham College was Mr. Basil Champneys. The buildings, which are extensive in area, were erected between 1875 and 1894, the latest portion being the main gateway, which includes an elaborate double gate in memory of the first principal of the college, Miss Clough.



WESTMINSTER COLLEGE: TOWER AND PRINCIPAL ENTRANCE. HENRY T. HARE F.R.I.B.A., ARCHITECT.

Westminster College.

This, the newest of Cambridge colleges, is associated with the Presbyterian Church of England. The buildings occupy a fine site in Madingley Road, not far from Magdalene College, and were completed in 1901 from designs by Mr. Henry T. Hare. The college is intended for graduates of the University who are proposing to join the ministry, this work having been previously carried on in Queen Square, London. The accommodation comprises classrooms, hall, library, senate-room, twenty-six sets of students' rooms, and a residence for the principal. There are also in the grounds houses for two resident professors. The buildings are faced with red bricks with dressings of Clipsham stone, and the roofs are covered with Collyweston stone slates. The floors throughout are of fire-resisting construction.

OTHER UNIVERSITY BUILDINGS.

In addition to the colleges proper, the University of Cambridge comprises a number of separate buildings, such as the Senate House, the University Library, the Fitzwilliam Museum, and numerous schools and laboratories housed in new buildings. Of these a description is given below, with accompanying illustrations.

The Senate House.

The architect of the Senate House, which was built in 1719-30, is usually stated to be James Gibbs, but there seems to be evidence indicating that James Burrough had a not inconsiderable share in its design. The building occupies the north side of what was formerly the schools quadrangle, which was closed on its eastern side by Archbishop Rotherham's library, built in 1470. The old buildings were demolished at the time of its erection, and it was part of Gibbs's scheme to erect other blocks on the south and west sides, connected together as one architectural whole, the Senate House forming the north block, the Consistory and Register Office the south, and the Royal Library closing the west side. A great deal of dispute appears to have taken place with respect to this scheme, and, as the result, the Senate House was the only part ever carried out from Gibbs's design. The building exemplifies that refinement which characterises the work of this architect, and gives to Cambridge one of its most dignified edifices.

The Fitzwilliam Museum.

This building was erected to receive the pictures, engravings, books, etc., bequeathed to the University by Viscount Fitzwilliam, who died in 1816. A competition was held, and the design of Basevi was selected. That architect, however, never lived to see his work completed, as he was killed in 1845 by falling from an opening in the floor of the west tower of Ely Cathedral. The completion of the building was undertaken by Cockerell, and the result is a façade which calls forth the greatest admiration, alike for its general massing as for its detail and ornament. The name of Mr. E. M. Barry is also associated with the building, he having designed the decorations for the entrance hall and staircase.

The University Library.

A new façade to the old University library was added in 1754-1758 by Stephen Wright. The composition shows a projecting central portion, having an arcaded loggia on the ground floor, with symmetrical side wings masking the old buildings.

It is curious to note that none of the schemes made for this group of buildings have ever been carried out in their entirety, but portions of each remain. Cockerell in 1834 prepared a complete design for rebuilding the whole library, but nothing more than a wing to the right of the present front was ever completed.

New Medical Schools.

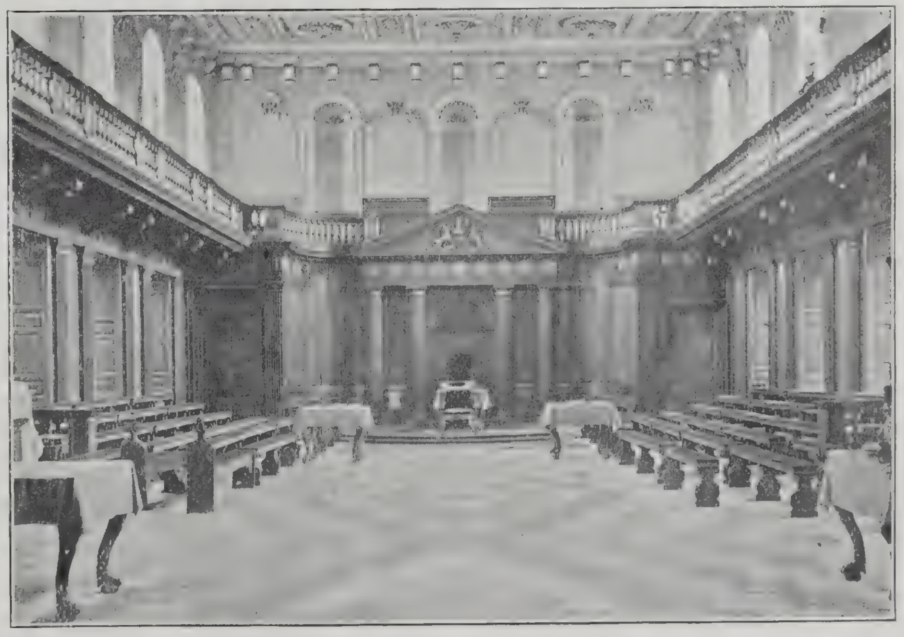
These buildings front Downing Street and were erected from designs by Mr. E. S. Prior. They provide for pharmacology, medicine, and surgery, and comprise also the Humphry Museum and the pathological school.

Next to the Medical Schools a new laboratory has recently been completed from designs by Mr. H. Redfern, in continuation of the Cavendish laboratories, designed by the late Mr. J. J. Stevenson.

The Law Library and Sedgwick Museum.

On the south side of Downing Street, opposite the new Medical Schools, is a range of buildings comprising the Law Library in the centre, with the Sedgwick Memorial Museum on one side, and the museum of archæology and ethnology on the other. The Law Library and the Sedgwick Museum were opened some years ago, but the museum of archæology and ethnology is only now being completed. Mr. T. G. Jackson, R.A., is the architect.

The erection of the Law Library is due to the munificence of the late Miss Squire, who left £40,000 in equal moities to the Universities of Oxford and Cambridge. On the ground floor is a spacious vaulted entrance to the court. On the first floor is the law library, 85ft. by 34ft., lit by five large mullioned windows on each side and surmounted by a lantern turret to contain a clock and bell. The library is fitted with carved bookcases, and has a gallery with pilasters and arches at each end, all of wainscot oak. Adjoining the library is the law school, comprising two lecture-rooms on the first floor, and one large lecture-room on the second floor. There are also two rooms for professors. The staircase is contained in a tower facing the court, on the upper part of which is a figure of "Justice" in relief by Mr. Henry Pegram, A.R.A. The Sedgwick Memorial Museum is L-shaped. It contains on the ground floor two large lecture rooms, working rooms and a museum of comparative geology. On the first floor is the great museum of



INTERIOR OF THE SENATE HOUSE.

zoology, nearly 300ft. in length, the principal entrance to which is by an external staircase from the court, dividing at the base into two sweeps, with animal figures on either side. The second floor of the building is occupied by museums, laboratories, and library, and above is an attic chamber, 175ft. long, with a barrel ceiling.

The Botanical School.

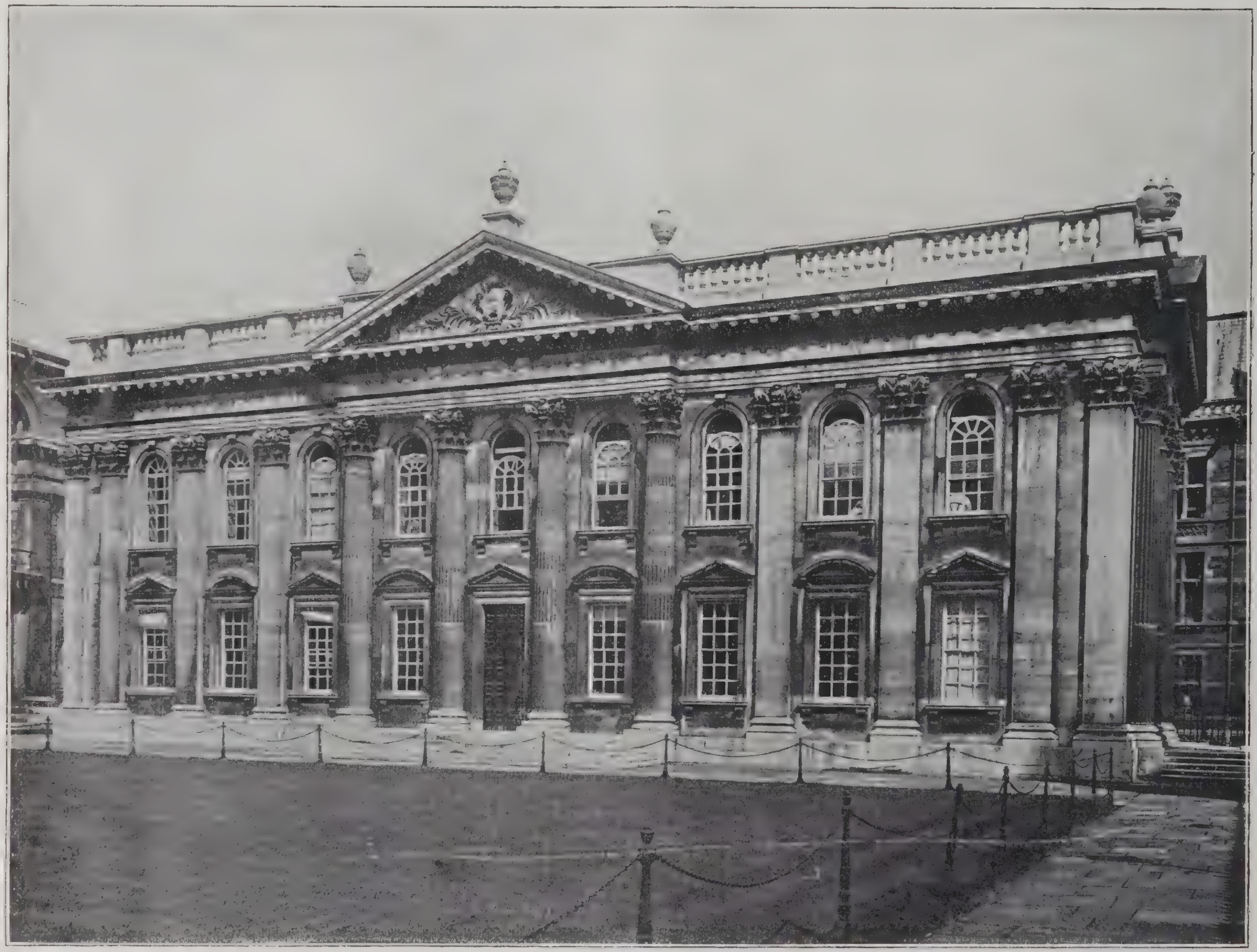
This building forms an oblong block, 200ft. by 40ft., to the south of the Law Library and Sedgwick Museum. It provides on the ground floor a large lecture theatre, with museum on one side and herbarium on the other, and on the floors above numerous classrooms, laboratories, etc. It is built of reddish-brown bricks, with Clipsham stone dressings, and has a flat roof which can be utilised for experimental purposes. Mr. William C. Marshall was the architect.

New Literary Lecture Rooms and Departmental Library.

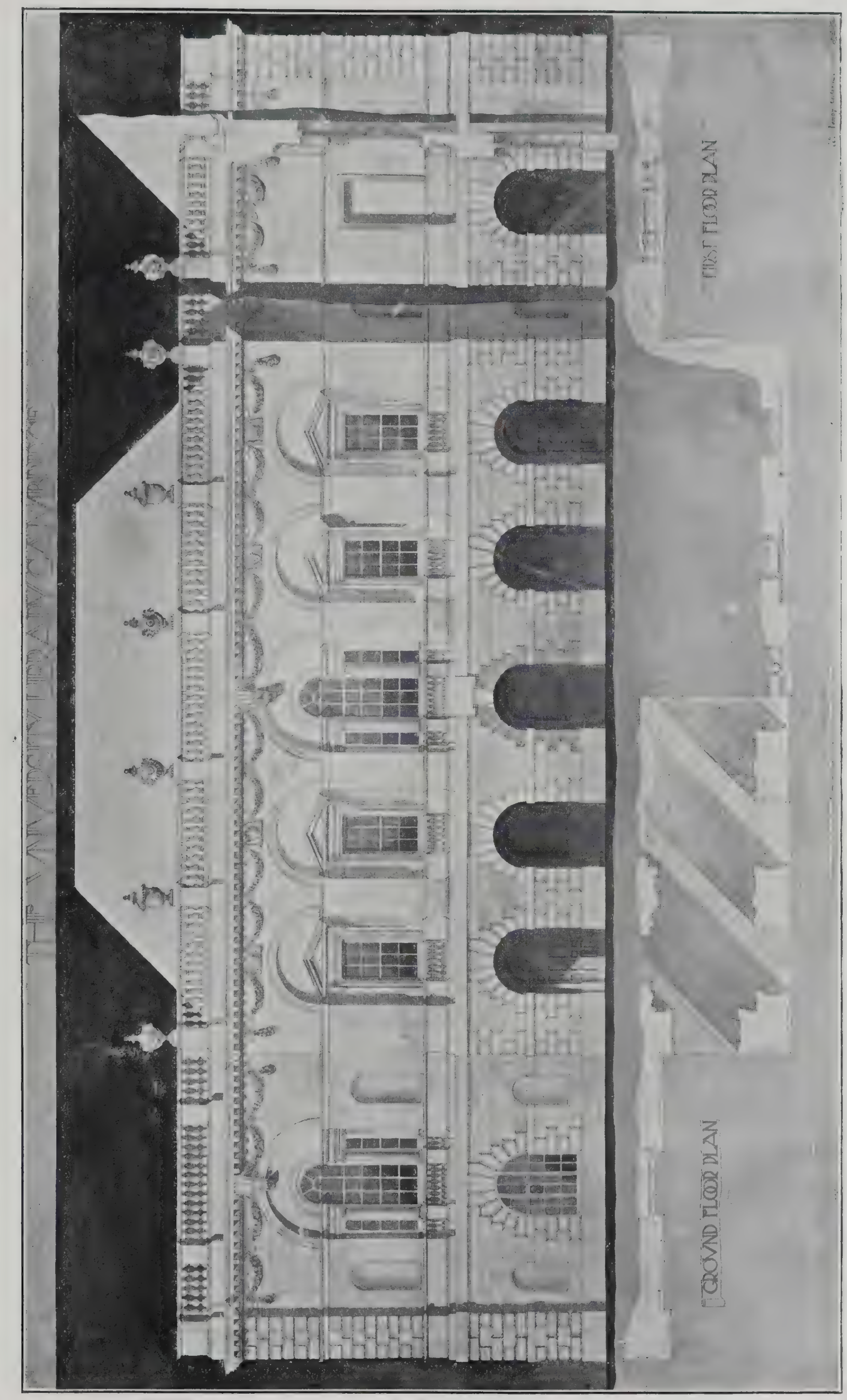
This building is now in course of construction on a site at the rear of Benet Street, the new examination rooms being to the east and the old and new Cavendish laboratories to the west. The building comprises a lecture theatre, eight lecture rooms, five classrooms, a professors' common room, and a library, which is subdivided for departmental purposes. The materials used are Weldon stone, hand-made 2in. Stone Court bricks, and hand-made tiles from the same brickfield. The site is a very confined one, and the difficulty of providing properly arranged accommodation necessitated the adoption of a steel-framed structure internally, but the danger of sound transmission has been minimised by using wood floor joists and 2in. hollow cast plaster slabs, laid between the joists for pugging purposes. The heating and ventilating has been made the subject of special study, and the system adopted is being carried out by Messrs. Crittall and Co. To prevent loss of heat from radiation through the glass, double glazing for the windows has been adopted throughout. Mr. George Hubbard and Mr. Albert W. Moore, FF.R.I.B.A., of Fenchurch Street, E.C., are the architects.

The School of Agriculture.

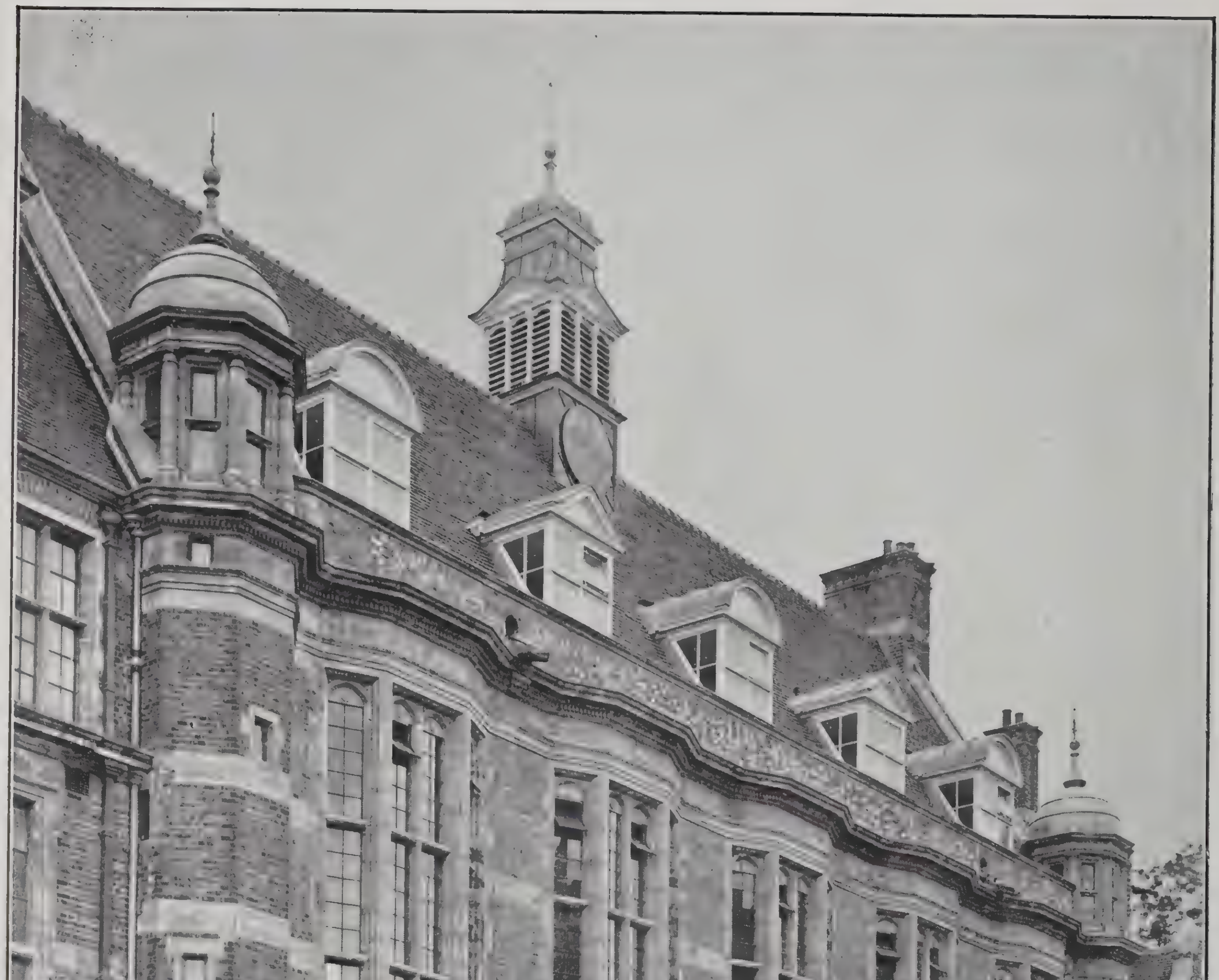
This building was formally opened in June last. It is situated to the south of the Botanical School, and has been designed by Mr. Arnold Mitchell. The ground floor is occupied by a large lecture hall, the office and library. The first floor is devoted to the biological sciences, comprising a lecture room, elementary and advanced biological laboratories, and private rooms for the professor of agricultural botany, the lecturer in agricultural physiology and zoology, and the consulting zoologist and botanist of the Royal Agricultural Society of England, who are at present members of the staff. The second floor is designed for agricultural chemistry and physics, and contains a lecture room, a large elementary laboratory, an advanced laboratory, various other workrooms, and the private room of the Drapers' professor. The basement and attic provide store and preparation rooms, and the necessary greenhouse.



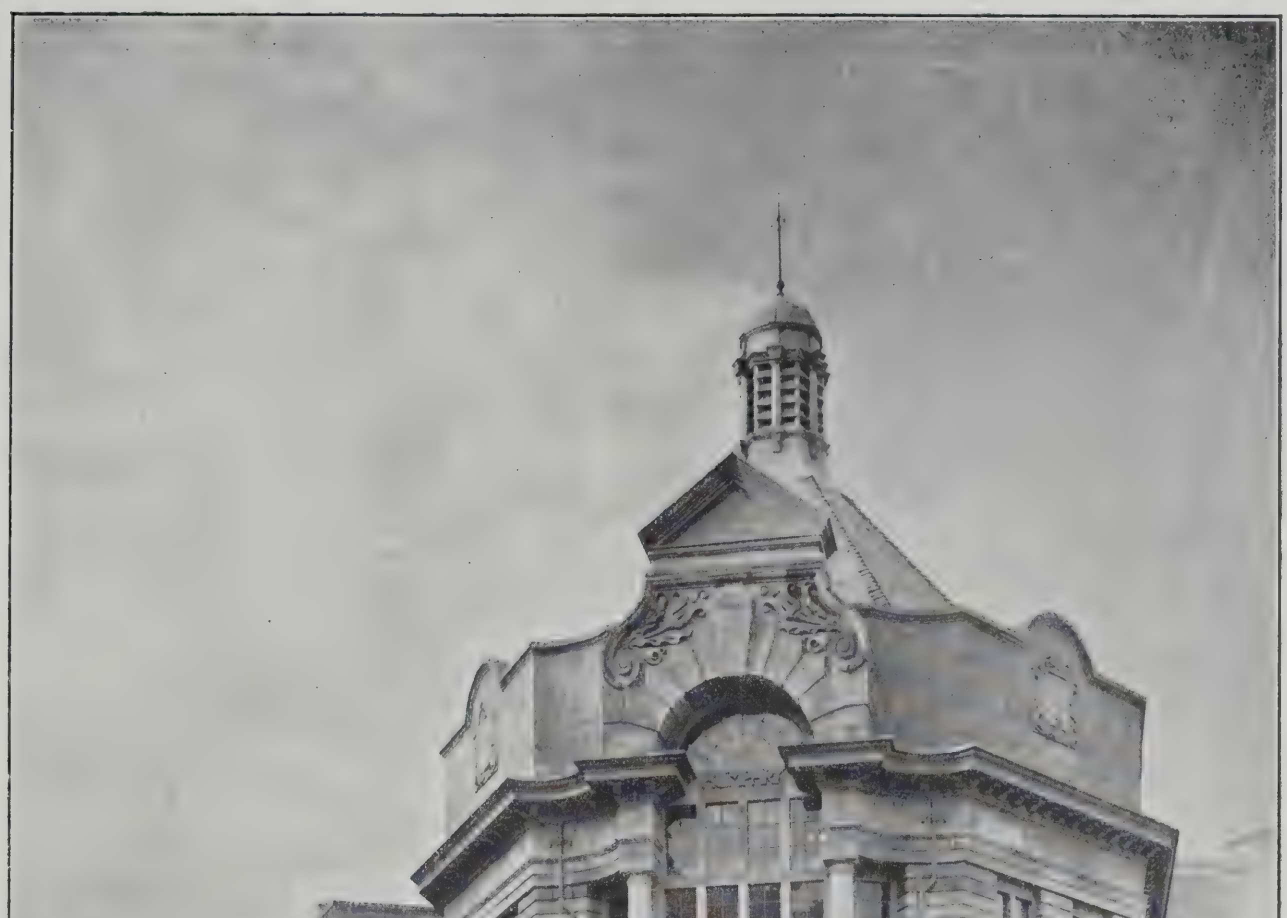
THE SENATE HOUSE. JAMES GIBBS, ARCHITECT.



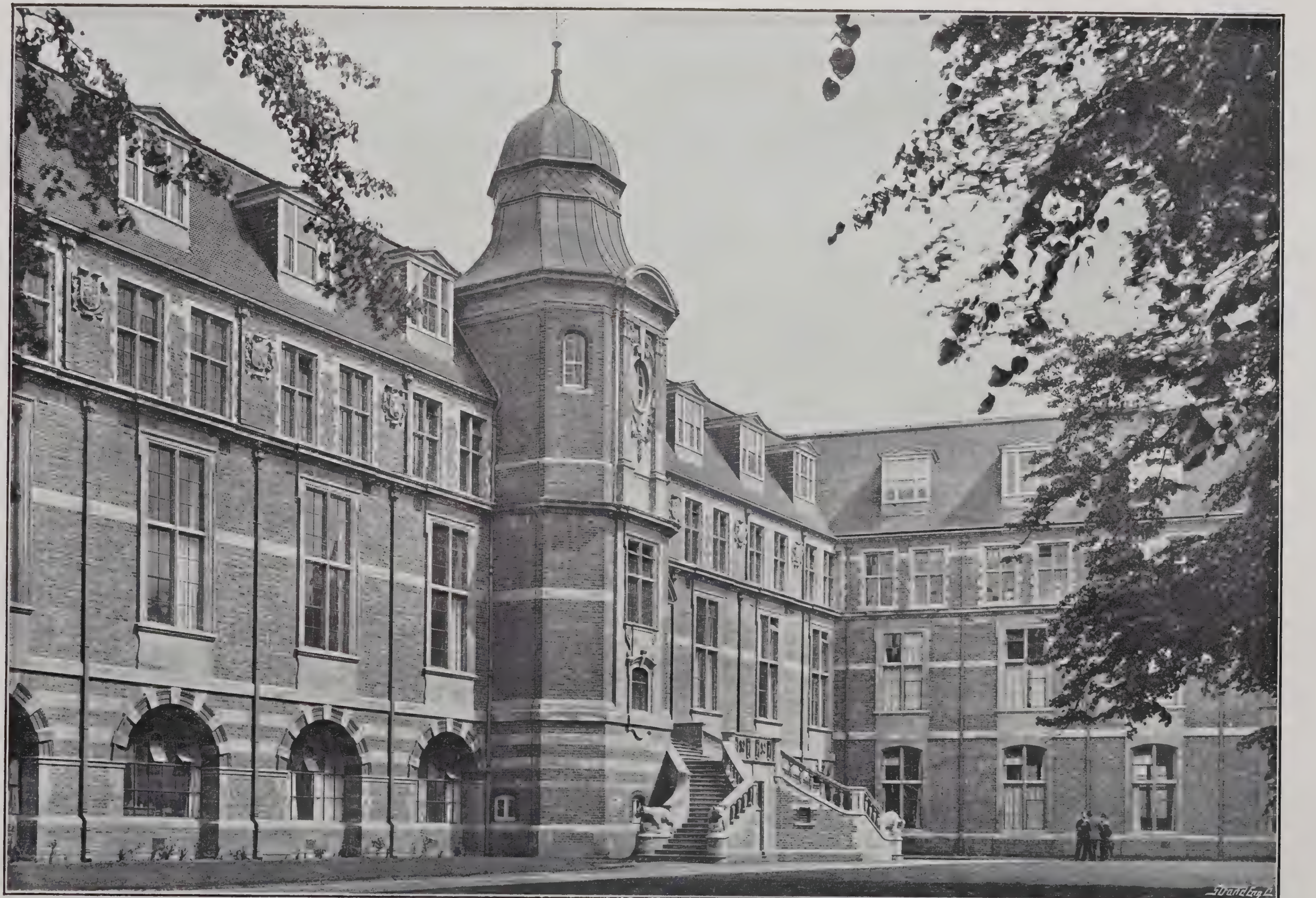
THE UNIVERSITY LIBRARY STEPHEN WRIGHT, ARCHITECT. MEASURED AND DRAWN BY W. NASEBY ADAMS.



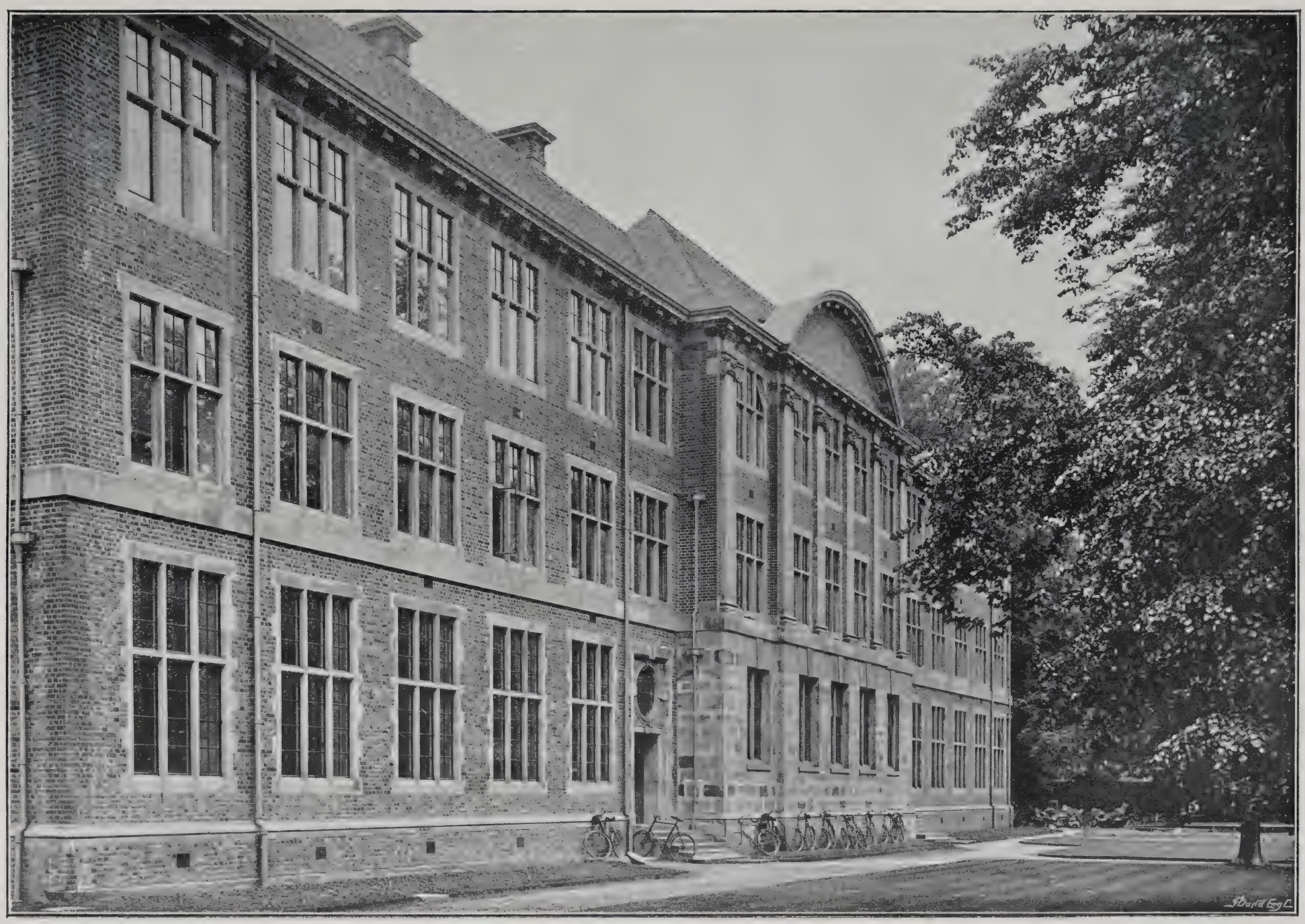
THE LAW LIBRARY. T. G. JACKSON, R.A., ARCHITECT.



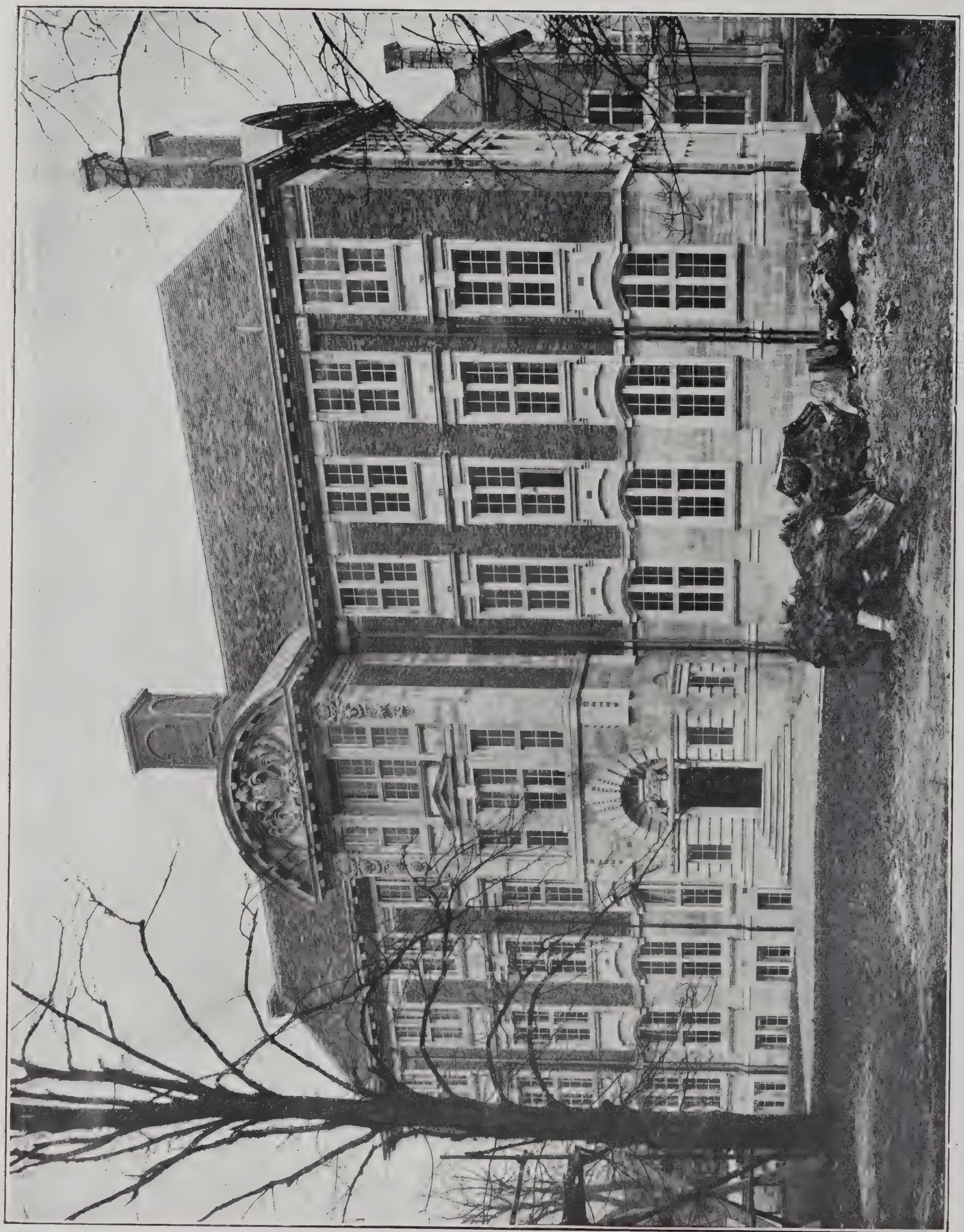
NEW MEDICAL SCHOOLS. EDWARD S. PRIOR, M.A., F.R.I.B.A., F.S.A., ARCHITECT.



THE SEDGWICK MEMORIAL MUSEUM, FROM THE COURT. T. G. JACKSON, R.A., ARCHITECT.

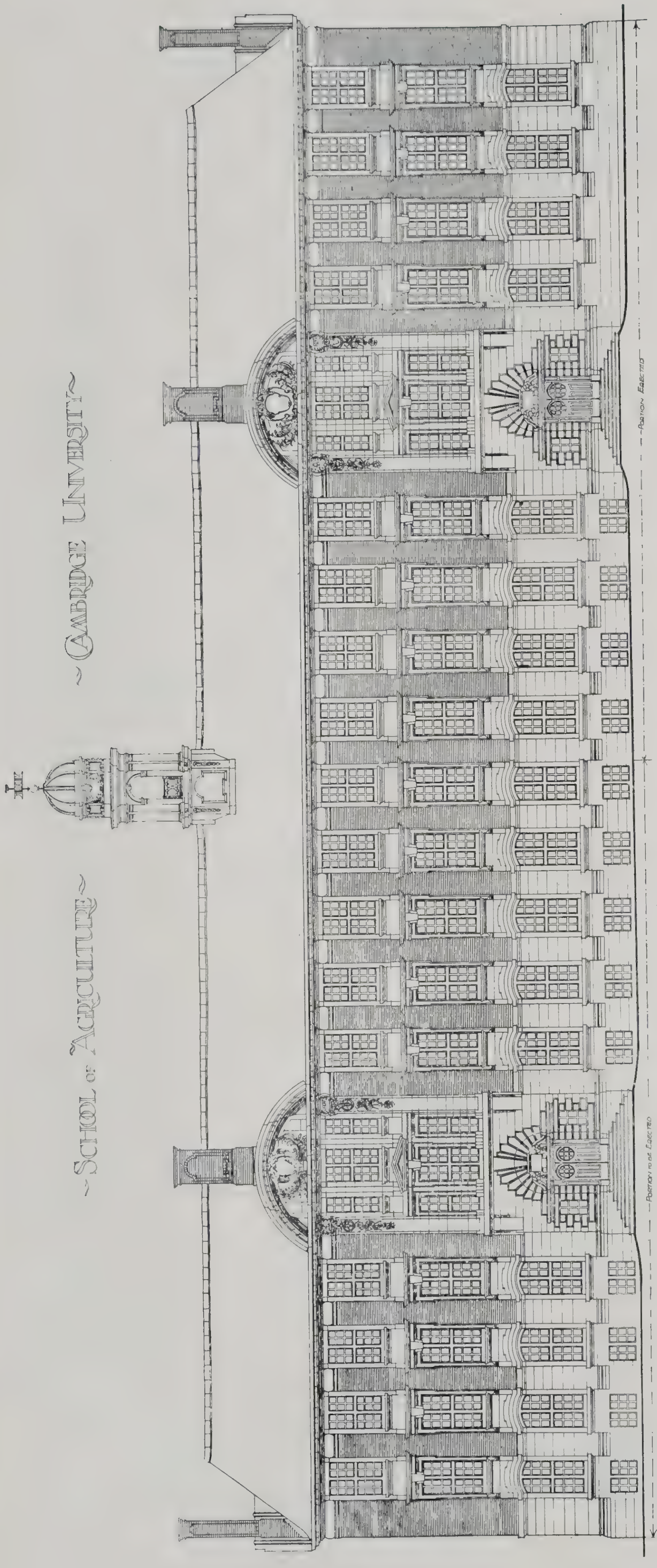


THE BOTANICAL SCHOOL. WILLIAM C. MARSHALL, M.A., F.R.I.B.A., ARCHITECT.

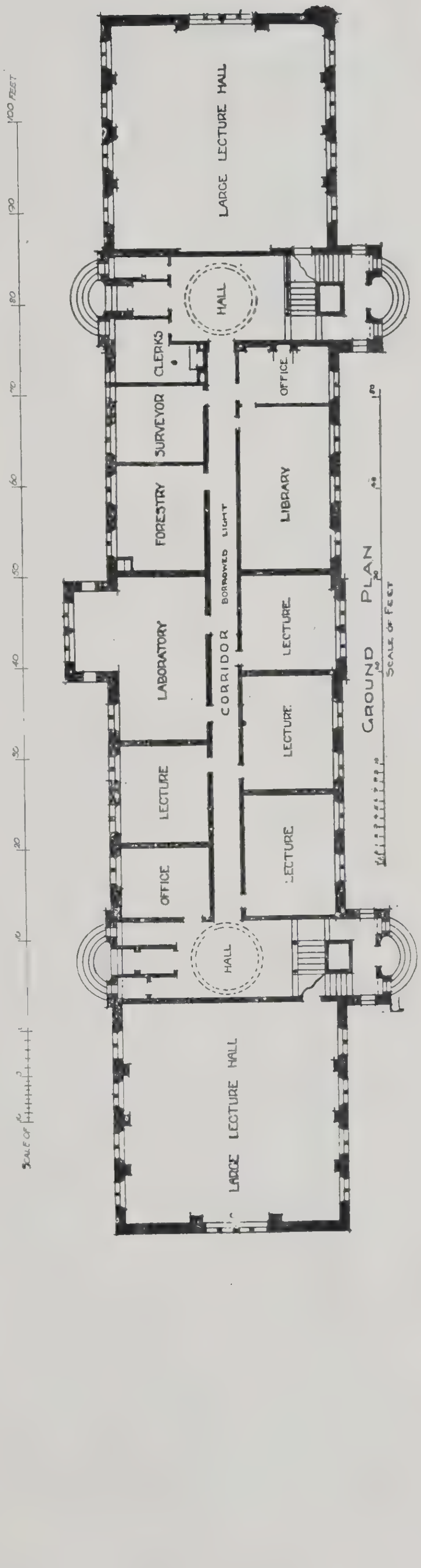


SCHOOL OF AGRICULTURE. ARNOLD MITCHELL, F.R.I.BA, ARCHITECT.

~SCHOOL OF AGRICULTURE~ ~CAMBRIDGE UNIVERSITY~

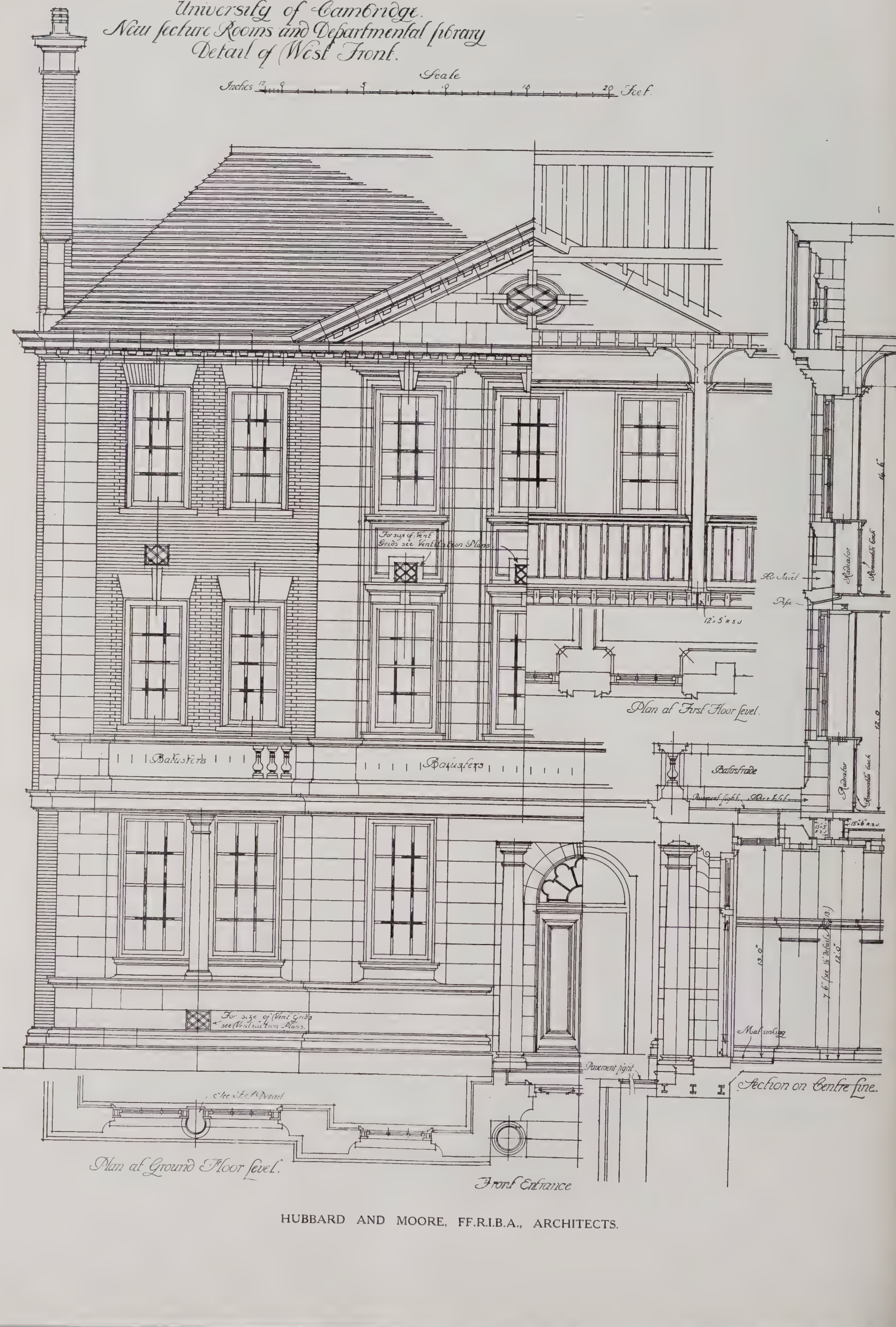


SOUTH ELEVATION



GROUND PLAN

ARNOLD MITCHELL, F.R.I.B.A., ARCHITECT.



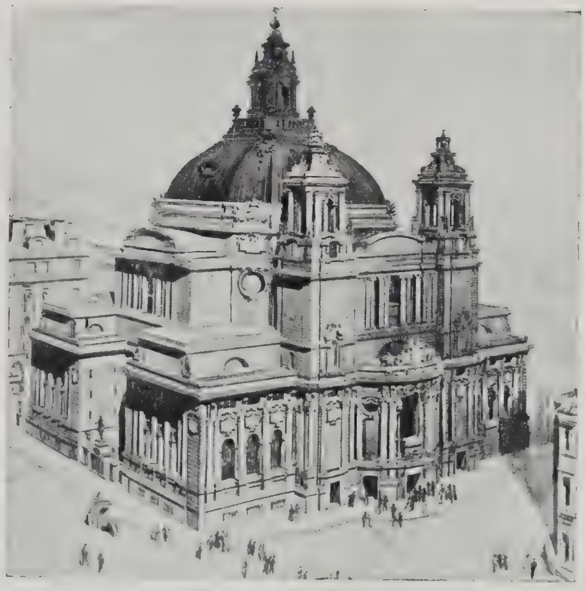
HUBBARD AND MOORE, FF.R.I.B.A., ARCHITECTS.

SPECIAL SECTION:

BUILDINGS

OF THE

YEAR.



THE WESLEYAN HALL, WESTMINSTER.
LANCHESTER & RICKARDS, FF.R.I.B.A., ARCHITECTS.

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

BUILDINGS OF THE YEAR.

THE important buildings of the year, being for the most part civic buildings or large business premises, are no index to the general state of the building industry. Seeing them, the casual observer might assume that things were in a very fair way with architects and builders. That this is not the case is evident from the trade reports. Undoubtedly trade in general has improved, but the building industry has not yet felt the improvement to any appreciable degree, and the reports from various parts of the country all record a very small amount of work.

In London during the past year the fine new building in Whitehall for H.M. Office of Woods, Forests, and Land Revenues has been completed from designs by Mr. John triumphal archway and Admiralty extension has been erected Murray, and at the top of the same thoroughfare the from the designs of Sir Aston Webb and Mr. E. Ingress Bell. At the time of writing the Government and the London authorities concerned are still at loggerheads as to who shall bear the cost of making this fine termination of the Mall effective towards Charing Cross by pulling down the buildings that now block the view. It is to be hoped that some arrangement to secure this result will be arrived at, otherwise the scheme will be ruined. The architects of H.M. Office of Works (of which Sir Henry Tanner is the chief) have added several notable buildings to the metropolis during the past twelve months; in particular, the new General Post Office in Newgate Street, the National Gallery extension, and the new post office and meteorological office at South Kensington. Another important Government work is the British Museum extension, now well on the way to completion according to the design of Mr. J. J. Burnet. Great progress has been made with the Wesleyan Methodist Hall on the Aquarium site at Westminster, and the architects, Messrs. Lanchester and Rickards, are to be congratulated on what is likely to be a magnificent building. In Pall Mall the Royal Automobile Club, by Messrs. Mewès and Davis, has been practically completed externally, and now that the scaffolding is removed we see a fine Classic façade. On the north side of St. Paul's Churchyard the new St. Paul's Cross has been erected from designs by Professor Reginald Blomfield, with figures at the base by one of our most important sculptors, Mr. Bertram Mackennal. Among the business premises must be mentioned the building in Mortimer Street by Messrs. William and Edward Hunt, and that in Regent Street by Mr. Verity, both of which introduce an imposing type of design common in America, but of which we, unfortunately, have only too few examples in this country. In Piccadilly the Norwich Union building has been erected from designs by Messrs. Ernest Runtz and Ford, and the Piccadilly Arcade from designs by Mr. G. Thrale Jell. Among other London buildings of the year may be mentioned the new Cordwainers' Hall in Cannon Street, by Mr. H. Chatfeild Clarke; the new Turner Wing at the Tate Gallery, by Mr. W. H. Romaine-Walker; and the Albemarle Club, by Messrs. Smith and Brewer.

At Sheffield the new General Post Office designed by Mr. Walter Pott, of H.M. Office of Works, has been completed and opened, as also the Grand Hotel by Messrs. Connon and Chorley and the new baths in Glossop Road by Mr. Nunweek; while the Royal Infirmary extension by Messrs. Gibbs, Flockton, and Teather and the Royal Hospital extension by Messrs. C. and C. M. Hadfield are at the present time approaching completion.

In Glasgow the buildings of the year include the Church of St. Aloysius, by Mr. Menart—a building of reinforced concrete which possesses an interior of very fine proportions; a very high building for the Northern Assurance Co. in St. Vincent Street, by Messrs. John A. Campbell and A. D. Hislop; the Alhambra Music Hall in Wellington Street, by Messrs. J. J. Burnet and Son; and the Savings Bank and offices in New City Road, by Mr. Neil C. Duff.

At Newcastle-on-Tyne the new premises of the Alliance Assurance Co. were completed early in the year by Messrs. Newcombe and Newcombe, and at the present time the following buildings are being completed:—New assembly rooms, etc., for Messrs. Tilley and Co. (Mr. C. S. Errington, architect), Northern Conservative Club (Messrs. Cackett and Burns Dick, architects), and reinforced concrete warehouses for Messrs. Bainbridge and Co.

At Liverpool the Lady Chapel of the new Cathedral has been completed from Mr. Gilbert Scott's designs, and is a notable addition to modern Gothic work. The huge Royal Liver Building designed by Mr. Aubrey Thomas has been practically finished as far as the exterior is concerned, while among other new work is the School of Art extension (Messrs. Willink and Thicknesse, architects), the Royal Infirmary extension (Mr. J. Francis Doyle, architect), the Bank telephone exchange (Messrs. Bromley and Watkins, architects), and the Engineering Laboratory extension (Messrs. Briggs, Wolstenholme, and Thornely, architects). Another new building, now being erected, is the Students' Union, of which Professor Reilly is the architect.

The new buildings at Leicester include the Masonic Hall by Mr. Howard H. Thomson, the new nurses' home at the Infirmary (Messrs. Everard, Son and Pick, architects), and the Victoria Road Church Institute (Mr. G. Lawton Brown, architect).

At Manchester the huge new building for the Y.M.C.A. (Messrs. Woodhouse, Corbett, and Dean, architects) has been practically completed—a building which has a great deal of the interior accommodation of quite unusual character, such as a swimming bath, gymnasium, and running track on the upper floors. The extension to the Refuge Assurance building has been completed from designs by Mr. Paul Waterhouse, the Palatine Bank, from designs by Messrs. Briggs, Wolstenholme, and Thornely, and the Albert Hall from designs by Messrs. J. Morley and Son. Large warehouses have been erected by Mr. Fairhurst and Mr. Birkett, the Zion Church has been built from designs by Messrs. Bradshaw and Gass, and the Church House from designs by Mr. John Brooke. At Fallowfield Mr. Percy Scott Worthington has erected a Women's Hostel, and at Didsbury a new department for girls has been added by Messrs. J. and J. Swarbrick.

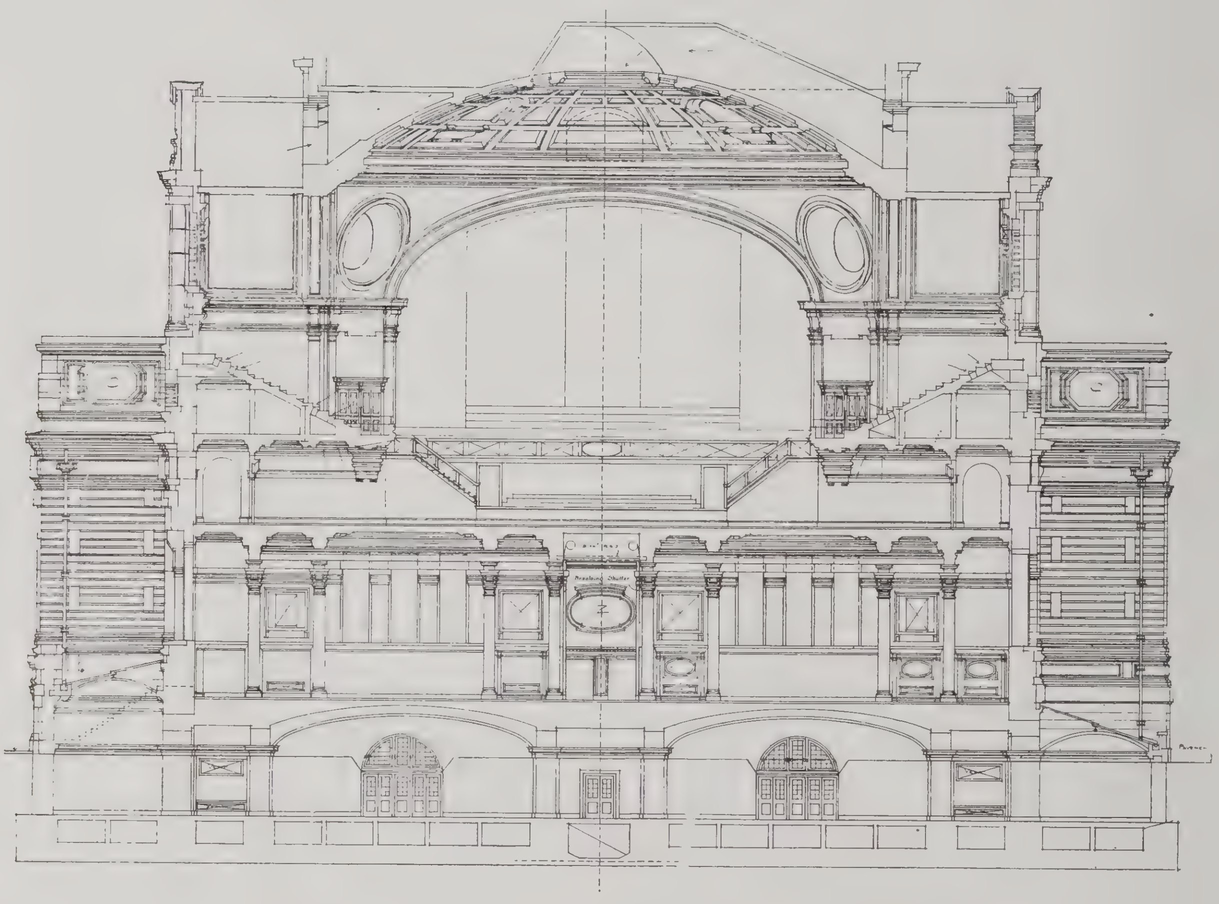
Dublin's new buildings include the Royal College of Science, of which Sir Aston Webb and Mr. E. Ingress Bell are the architects, and the new Technical School designed by the City Architect, Mr. C. J. MacCarthy; Bradford's the Town Hall extension (Mr. F. E. P. Edwards and Mr. Norman Shaw, associated architects), and the new textile school by Mr. Reginald G. Kirkby.

At Dundee two branch libraries of excellent design have been erected by the City Architect, Mr. James Thomson, who also designed the new Central Library and the Central Baths extension, now in course of erection.

At Birmingham good progress has been made with the Council House extension, of which Messrs. Ashley and Winton Newman are the architects. A new cemetery chapel has been built at Handsworth from designs by Mr. W. H. Bidlake, some schools by Messrs. Buckland and Haywood-Farmer, Mr. E. F. Reynolds, and Messrs. Crouch, Butler, and Savage, and a new building—St. Philip's Hall—added to the Oratory by Messrs. Cossins, Peacock and Bewlay.

At Leeds several fine blocks of business premises have been erected, and at Burton-on-Trent the new police courts have been built from designs by Mr. Henry Beck.

THE WESLEYAN METHODIST HALL, WESTMINSTER.



CROSS-SECTION OF WESLEYAN METHODIST HALL, WESTMINSTER

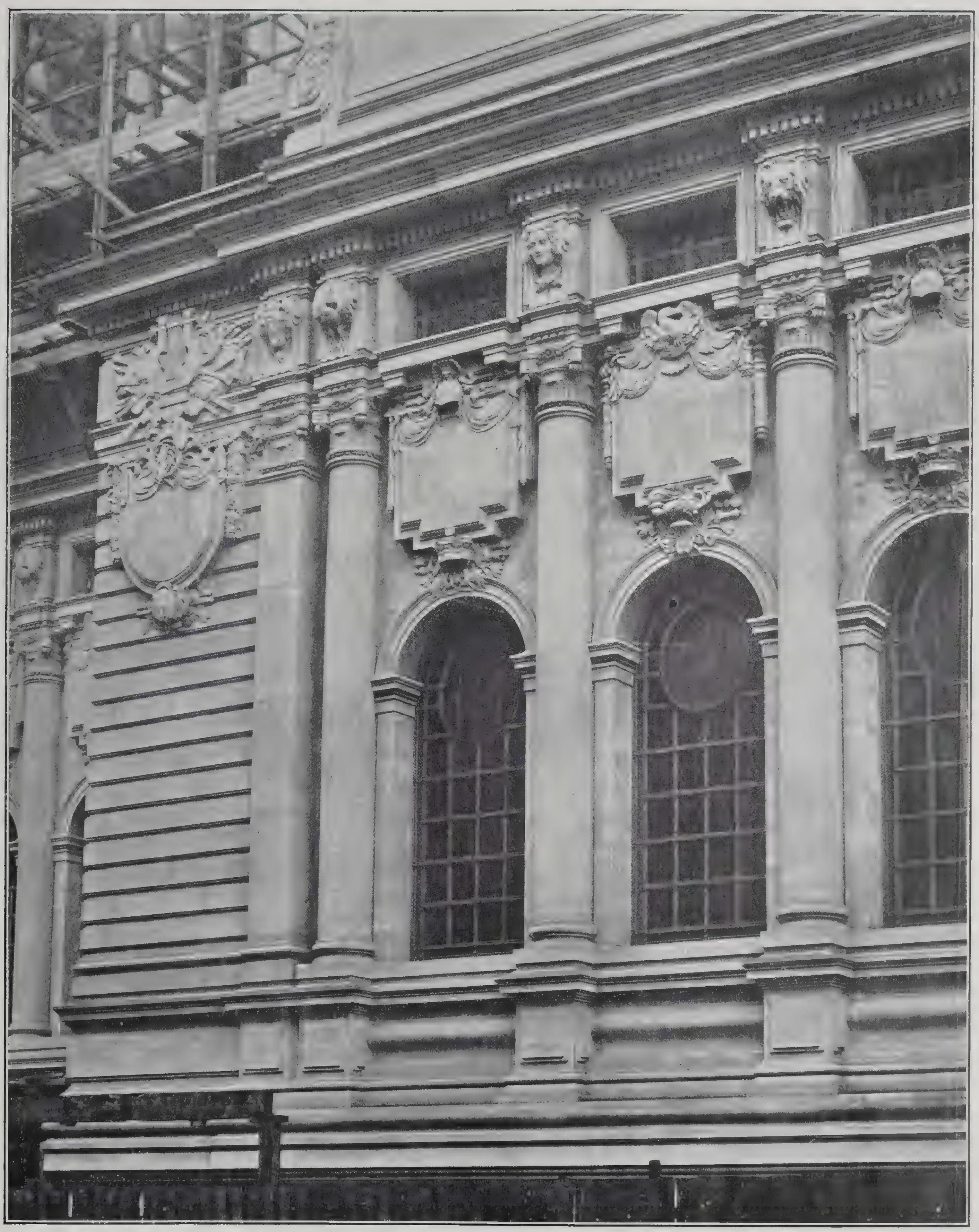
The new Wesleyan Methodist Hall at Westminster, now being erected from the design of Messrs. Lanchester and Rickards, FF.R.I.B.A., occupies the site of the old Royal Aquarium. The original design has undergone considerable modification, the two towers intended to form prominent features of the east front having been abandoned. The elevations are faced entirely with Portland stone, with steel casements, and window furniture of the same metal. Much economy of space within the building has been effected by the extensive use of reinforced concrete on the Kahn system. Although the work has only been proceeding for about two years, the exterior is well on the way to completion, the dome (the increase in the height of which was recommended and adopted shortly after the scheme was selected) being the chief architectural feature remaining to be erected. The interior is still in a state of incompletion, and it is stated that at least three years must elapse before the building is altogether finished.

The main hall provides accommodation for 2,500 people, and for an orchestra of 500 performers. In addition to the exclusively religious features of the accommodation there are the usual characteristics of large concert halls. The main staircase and entrance hall have been carried out in Hopton-Wood stone with plaster enrichments. The basement has been designed for use as a tea-meeting hall. A large part of the building will be available for letting purposes, and the basement and south-east corner will be occupied by a branch of the London City and Midland Bank.

The carving on the exterior is almost lavishly elaborate, as may be judged from the detail view which we are able to show. Although it may be contended that the character of the ornamentation is hardly suited to the purpose which the name of the building implies, the addition to London of a building of undoubted architectural originality and achievement must assuredly outweigh any purely sentimental considerations.

The building is being carried out by Messrs. Dove Bros., of Islington; and among the sub-contractors may be mentioned the following:—Reinforced concrete, Messrs. The Trussed Concrete Steel Co.; marble, Messrs. Joseph Whitehead and Sons; heating and ventilation, Messrs. Ashwell and Nesbit, Ltd.; casements, Messrs. Wenham and Waters; electric wiring and telephones, Messrs. Strode and Co.; lift, Messrs. Wadsworth and Co.; stoves, Messrs. Bratt, Colbran and Co.; fibrous plaster work Messrs. Martyn and Co.; decorative and plain plasterwork, Messrs. Veronese; w.c.'s, Messrs. Shanks and Co.; lavatories, Messrs. Davis and Bennett; urinals, Messrs. Tylor and Co.; mosaic work, Messrs. Diespeker and Co.; leadwork, Messrs. J. W. Singer and Sons; asphalt work, Messrs. William Salter, Edwards and Co.; plaster and Keene's cement, Messrs. The Gotham Co., Ltd.; fire-resisting staircases in Excelsior stone, and *in situ* pavings to floors, galleries, etc., Messrs. The Excelsior Patent Stone Co.; "Zenith" floor springs, Mr. James Gibbons; ivory glazed bricks, Messrs. The Leeds Fireclay Co., Ltd. In the construction of the building the Turk patent drying process (Messrs. The Turk System Drying Co.) has been adopted.

For the accompanying cross-section we are indebted to "Concrete and Constructional Engineering."

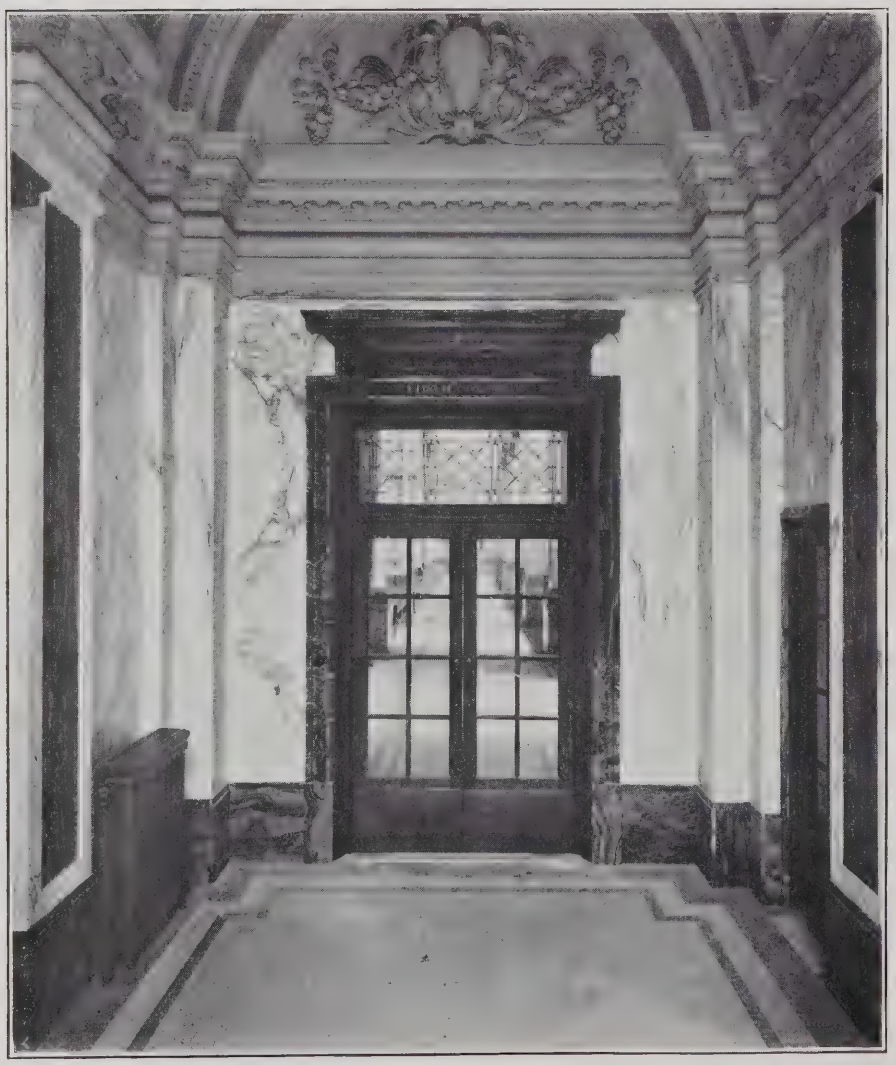


DETAIL OF WESLEYAN METHODIST HALL, WESTMINSTER. LANCHESTER AND RICKARDS, FF.R.I.B.A., ARCHITECTS

NEW GENERAL POST-OFFICE, LONDON.

The new general post-office for London, the architect of which is Sir Henry Tanner, of H.M. Office of Works, is one of the important buildings of the year. It was opened in November. The building was commenced early in 1906, and reinforced concrete has been used throughout, by which, it is estimated, a saving of about £60,000 has been effected. Around the site is a retaining wall some 27ft. in height, and from 7in. to 8in. thick only, strengthened by beams, and strutted from the main buildings. The total floor area of this our largest post-office exceeds ten acres. The construction is exceedingly light, although abundantly strong, the supports being placed from 35ft. to 45ft. apart, affording the least possible obstruction to the work and the arrangement of the fittings. The main beams are arched.

There are two blocks, one of seven storeys, next King Edward Street, containing the public office and the controller's offices, and the main block, of six storeys, next Newgate Street, providing accommodation for sorting purposes, postmen's rooms, etc, on the ground floor, rooms for foreign work on the first floor, and refreshment rooms above, with kitchen and the requisite offices. Retiring rooms for the different grades are also provided. The sub-ground floor and part of the basement are used for stores. The sorting racks, if placed end to end, would extend a distance of more than two miles. The dimensions of the ground-floor sorting room are 300ft. by 185ft. The two lower floors, which extend under the whole building, measure 446ft. east and west, and 210ft. north and south. By a system of corbelling, the east platform is free from obstruction by columns. There is a covered bridge, also of reinforced concrete, connecting the two buildings, while two subways connect the new with the older buildings on the eastern side of King Edward Street.

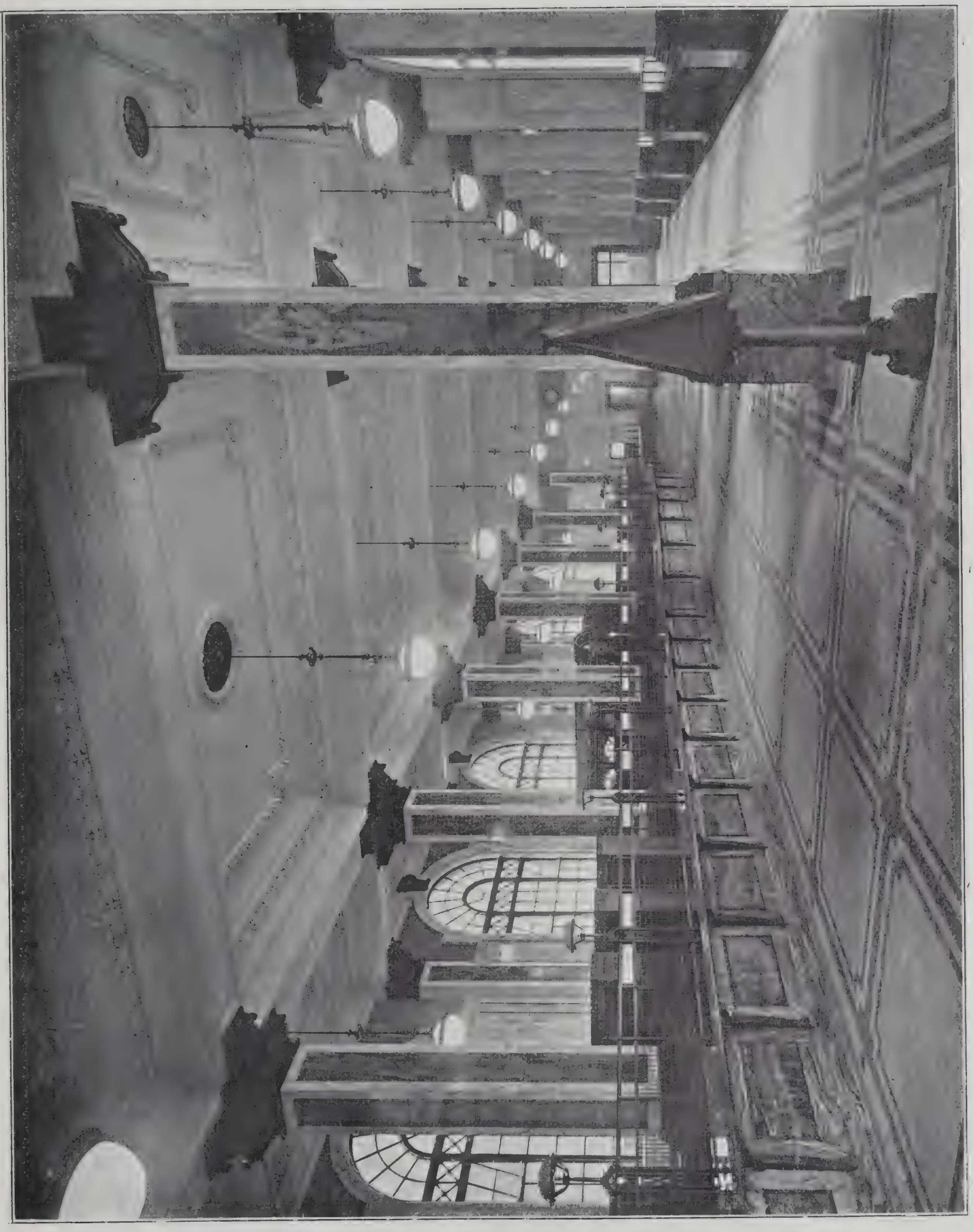


NEW G.P.O., KING EDWARD STREET, LONDON: ENTRANCE TO PUBLIC OFFICE. SIR HENRY TANNER (H.M. OFFICE OF WORKS), ARCHITECT.

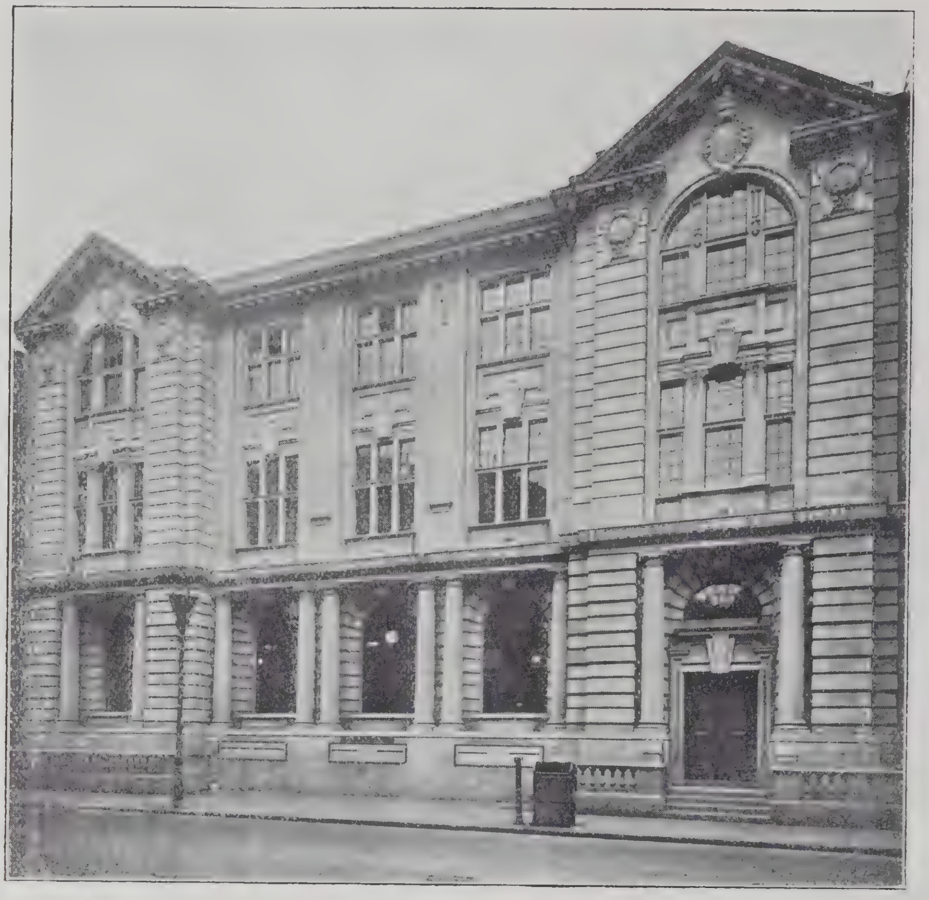
The public office is the largest in this country, the dimensions being 152ft. long by 53ft. wide, with a counter running the whole length. This room, with its entrances, has been treated somewhat elaborately, Irish green marble being used for the dado, pilaster panels, and door architraves, and an Italian green marble for the remainder. The pilasters and piers have bases and capitals of bronze, the key-blocks to the arches being of the same metal. Bronze is also used for the counter edges and screen, table edges, window frames, and electroliers. The counter front is of Irish green marble, with bronze consoles and ornaments. The floor is of mosaic, and the fittings are of wainscot.

The exteriors of the building towards the streets are of Portland stone with granite plinth, the concrete work being finished in cement. A large part of the western end is temporary, as an extension is contemplated. The building is warmed by hot-water radiators. There are thirteen lifts, and a system of conveyors has been installed for carrying letters from the posting boxes, etc., to different points.

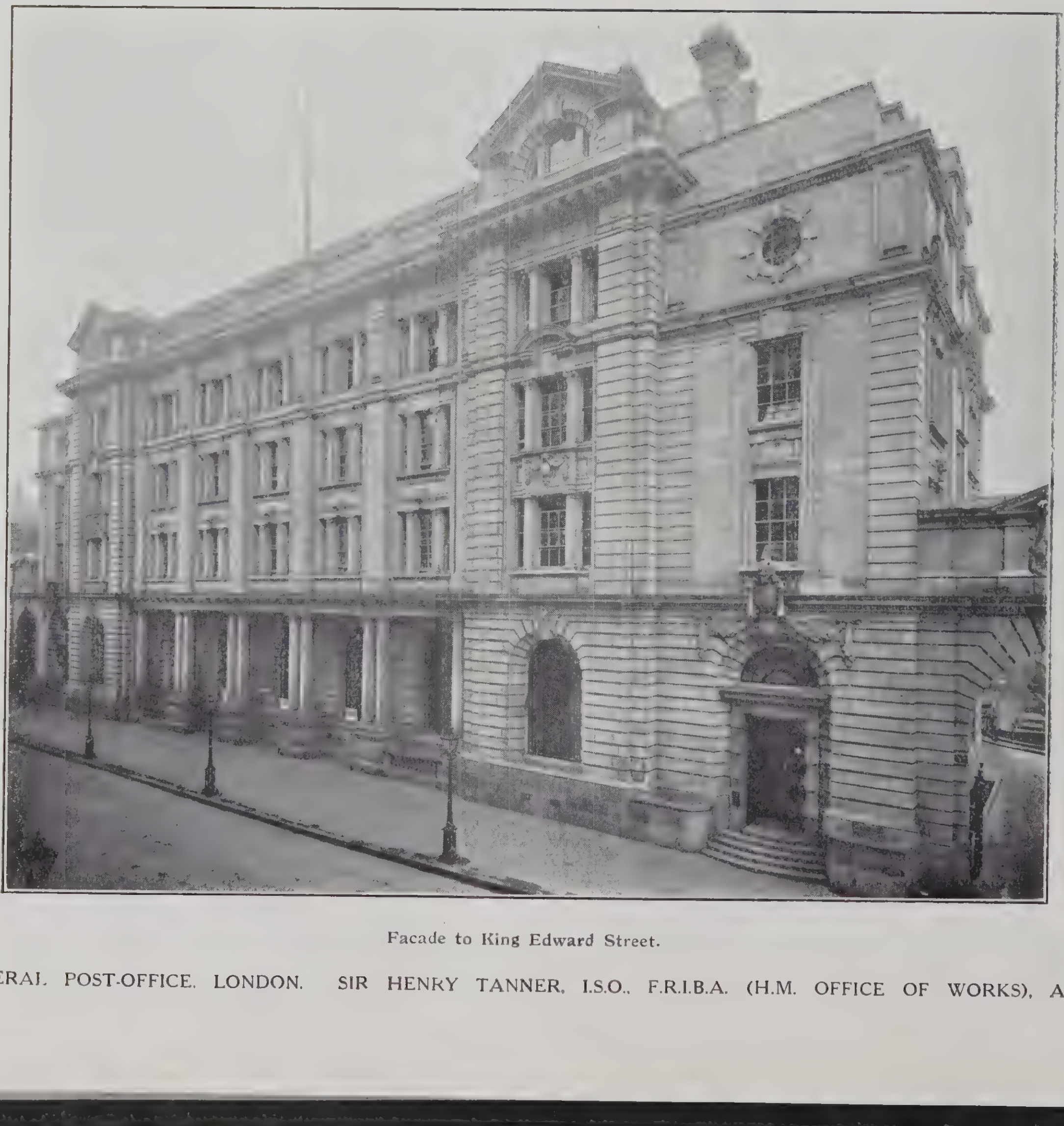
Messrs. Holloway Bros. were responsible for the reinforced concrete work, stonework, plastering, plumbing, joinery, etc.; Messrs. Lee Bros., the marble work; Messrs. Diespeker and Co., the mosaic and terrazzo paving; Messrs. R. Waygood and Co., Ltd., the lifts; Messrs. H. J. Cash and Co., Ltd., the heating and fire mains; Messrs. Henry Hope and Sons, steel sashes and brass and bronze finger plates; Messrs. George Wragge, Ltd., bronze window frames, bronze beads for marble, bronze grille and name plates; Messrs. H. H. Martyn and Co., plaster modelling, gates and railings King Edward Street, public office counter, wood carving; Messrs. The Acme Flooring and Paving Co., the block flooring; Messrs. Tonks, Ltd., brass divisions to sorting tables, grille in enquiry office, etc.; Messrs. The French Asphalte Co., the west yard; Messrs. The Limmer Asphalte Co., the roof and east yard; Messrs. The Bromsgrove Guild, electric street lamps, bronze electric light fitings in public office, and posting boxes; Messrs. Siemens Bros., some of the sorting office fittings; Messrs. Jones and Willis, gates and railings to Giltspur Street.



NEW GENERAL POST-OFFICE, KING EDWARD STREET, LONDON: THE PUBLIC OFFICE.
SIR HENRY TANNER, I.S.O., F.R.I.B.A. (H.M. OFFICE OF WORKS), ARCHITECT.

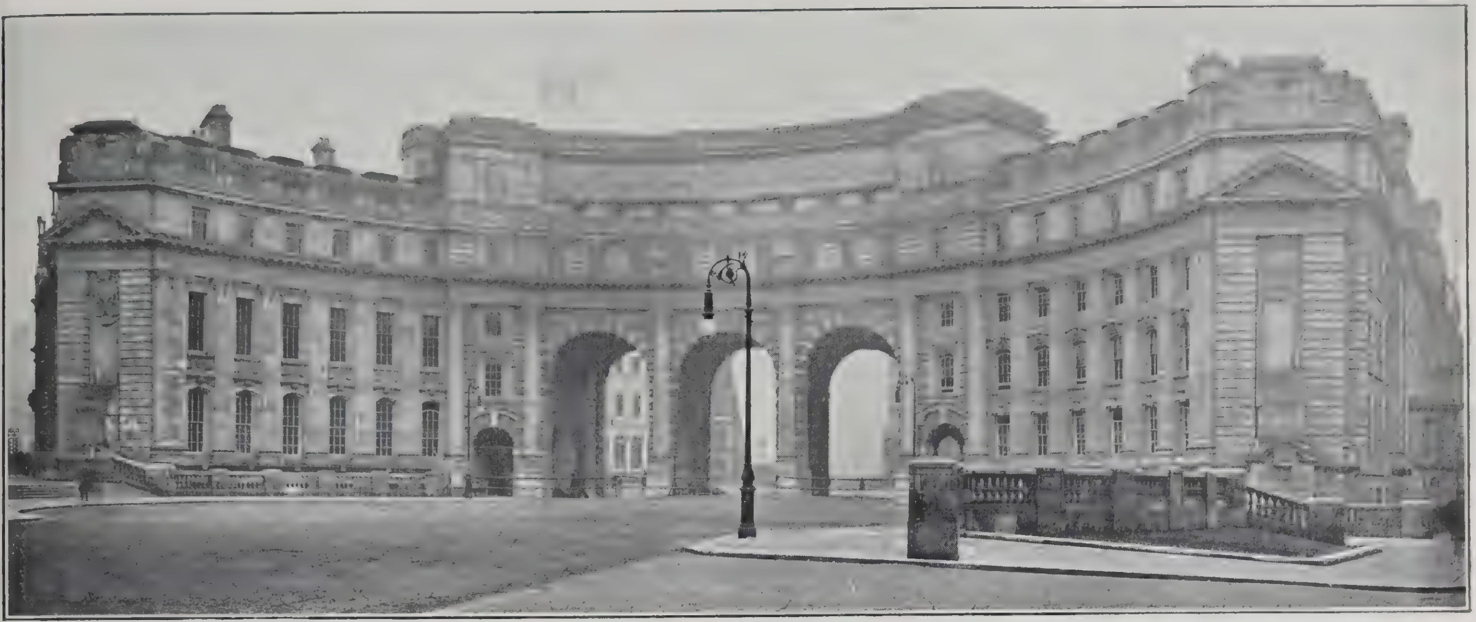


Facade to Newgate Street.

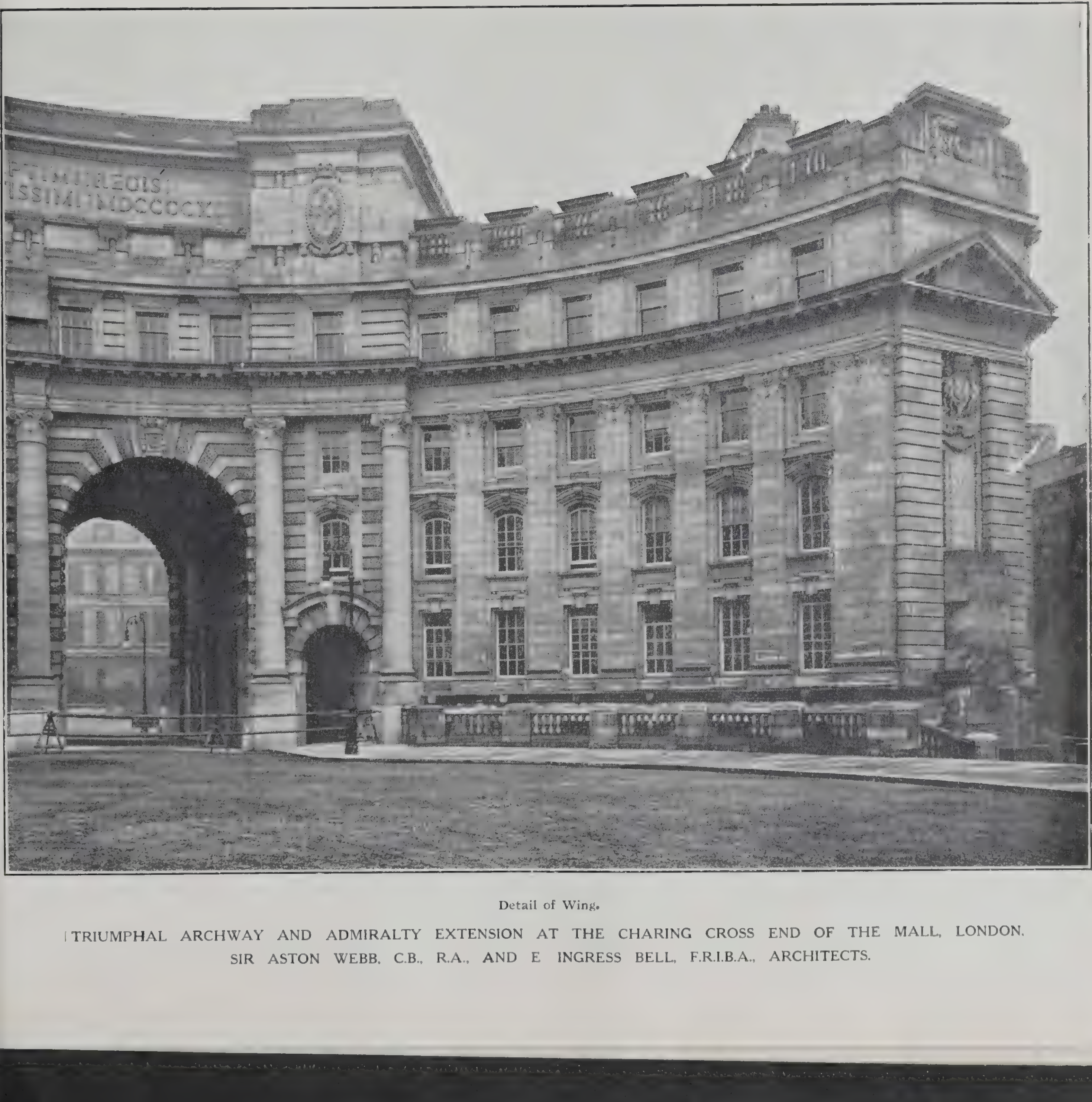


Facade to King Edward Street.

NEW GENERAL POST-OFFICE, LONDON. SIR HENRY TANNER, I.S.O., F.R.I.B.A. (H.M. OFFICE OF WORKS), ARCHITECT



General View from the Mall, looking towards Charing Cross.



Detail of Wing.

TRIUMPHAL ARCHWAY AND ADMIRALTY EXTENSION AT THE CHARING CROSS END OF THE MALL, LONDON.
SIR ASTON WEBB, C.B., R.A., AND E INGRESS BELL, F.R.I.B.A., ARCHITECTS.

PROCESSIONAL ARCHWAY AND ADMIRALTY EXTENSION.

The extension to the Admiralty, carried out from the design of Sir Aston Webb and Mr. E. Ingress Bell, forms a triumphal termination to the Mall, and gives access to Charing Cross. It consists of north and south wings connected by three arches, the middle one of which is to be used exclusively for Royalty, those on either side being for ordinary vehicular traffic going east and west. The south wing, which communicates with the principal Admiralty building by a bridge, is to be used entirely for office purposes, but the north wing chiefly provides the official residence of the First Lord of the Admiralty.

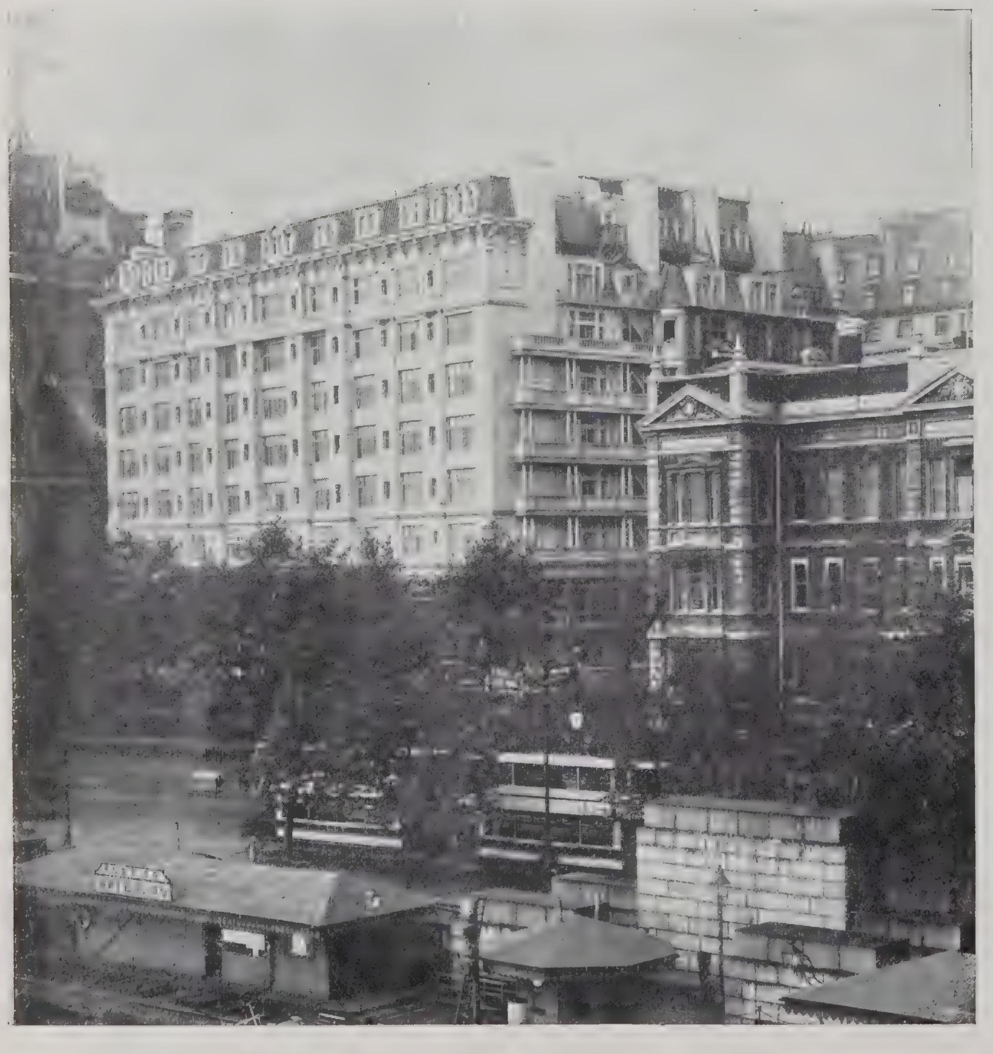
The general contractors for the work were Messrs. John Mowlem and Co., Ltd. The principal sub-contractors were as follows: Plastering, Messrs. A. and S. Wheater; wood block flooring, Messrs. The Acme Flooring and Paving Co.; Portland stone, Messrs. The Bath Stone Firms, Ltd.; marble work, Messrs. Fenning and Co.; marble and tile floors, Messrs. Mosaic Marble and Tile Co.; locks and bronze ironmongery, Messrs. Charles Smith, Sons, and Co.; lifts, Messrs. The Otis Elevator Co.; heating, Messrs. Haden and Sons; steelwork, Messrs. Dorman Long and Co., and Messrs. Redpath Brown and Co.; gates and railings, in course of construction by Messrs. Strode and Co. and Messrs. Hart, Son, Peard, and Co.; electric wiring and fitting, Messrs. Cash and Co.; electric bells, Messrs. Larkins and Co.; sanitary plumbing, Messrs. Matthew Hall and Co., with Dent and Hellyer fittings; stone carving, Mr. W. S. Frith; asphalte, Messrs. The Limmer Asphalte Co.; window fittings, Mr. James Gibbons.

In the construction of the building electric and steam derrick cranes by Messrs. Butters Bros. and Co., of Glasgow, have been used.

SAVOY HOTEL EXTENSION.

The erection of the new river front to the Savoy Hotel constitutes a record in rapid building. The extension, which included the demolition of the old front and the erection of a new one with increased accommodation, was commenced on August 1st, and by the first week in October the new portion was ready for the reception of visitors. In addition to the series of new suites of rooms, each of which comprises bed-room, sitting-room, and bath-room, a new top floor has been added for the exclusive accommodation of the domestic staff. The granite columns which rise from the base of the building to the second floor were, after elaborate calculations, found to be of insufficient strength to support the superposed weight of the new work; and, although they actually carry the two succeeding floors, the weight is mainly sustained by large cantilever girders. The façade, therefore, is really suspended from these huge girders, which run between the top floor and the floor below. The "Carrara" façade, which is 200ft. long by 80ft. high, was erected in the record time of less than three weeks. The new front is 8ft. nearer the Thames Embankment than the old one. The extension is lighted by electricity, and heated on the "Cable" system. Messrs. Collcutt and Hamp, of London, were the architects, and Messrs. Leslie and Co., the general contractors. Among the sub-contractors were the following:—Carrara ware and internal plumbing, Messrs. Doulton and Co.; constructional steelwork, Messrs. Handyside and Co.; marble work, Messrs. Burke and Co.; casements and gearing, Messrs. Richardson and Co. and Messrs. Thomas Elsley, Ltd.; roof tiling, Messrs. Roberts, Adlard, and Co.; water supply, Messrs. Mather and Platt; heating, Messrs Crittall and Co.; Vitreous tiles, Messrs. Chance Bros. and Co., Ltd. In the construction of the building the Turk patent system of drying (Messrs. The Turk System Drying Co.) was adopted.

For the accompanying illustration we are indebted to the "Queen."

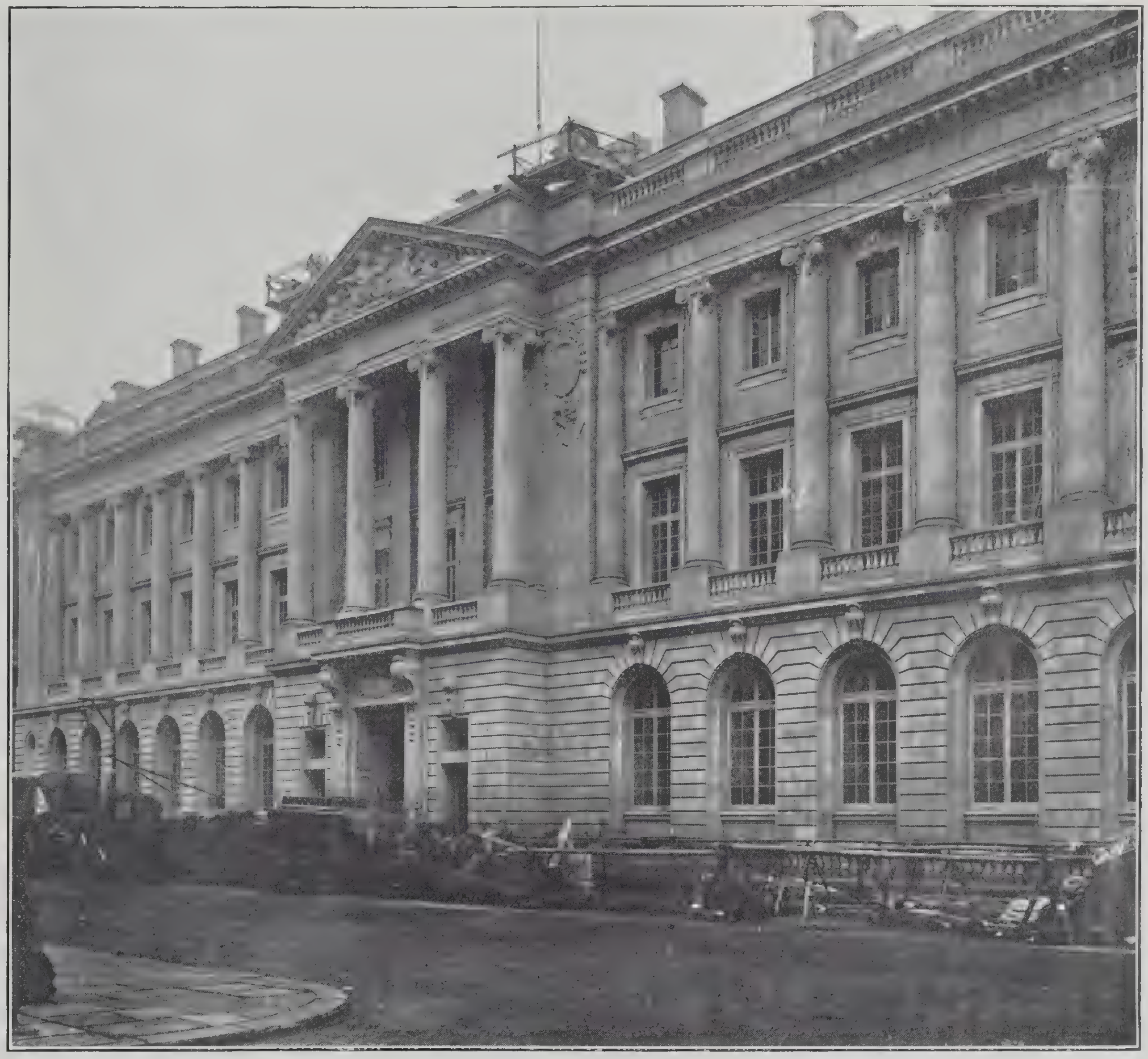


THE NEW RIVER FRONT OF THE SAVOY HOTEL
COLLCUTT AND HAMP, ARCHITECTS.

THE ROYAL AUTOMOBILE CLUB.

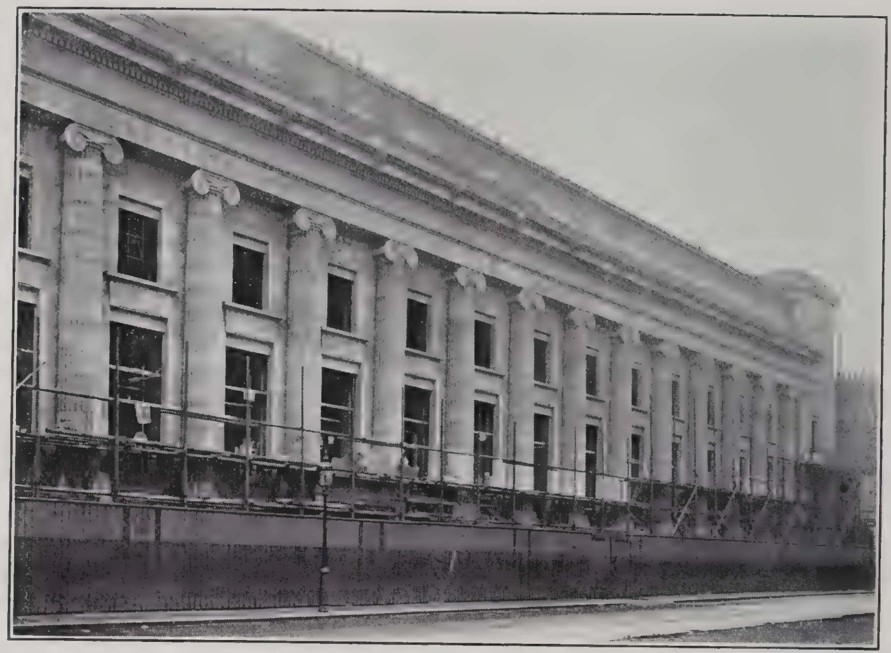
The new premises for the Royal Automobile Club, now being erected in Pall Mall on the site of the old War Office, have been designed by Messrs. Mewès and Davis and E. Keynes Purchase, of London. The façade, which is executed in Portland stone, is French Renaissance in style. It measures approximately 220ft. in length by 80ft. in height. The sculpture in the pediment, which represents Science inspiring the Allied Trades, was modelled and carved by M. Faivre, of Paris. M. Ragon prepared the models for the remainder of the sculpture, and carved the cartouche over the main entrance and the emblems under the entablature representing Earth, Air, Fire, and Water. The interior, which is lavishly appointed, includes a swimming bath 86ft. by 32ft., surrounded by a marble pavement, and approached by a marble staircase. The ground floor contains restaurant, reception-room, strangers' room, and club room, and a great gallery; and the first floor provides members' restaurant, billiard-room, card room, library, etc.

Messrs. The Building Construction Company, Ltd., are the general contractors, and the following are some of the sub-contractors: Constructional steelwork, Messrs. Redpath Brown and Co.; wrought-iron and bronze work, Messrs. Hart, Son, and Peard, and Messrs. Spital and Clark; decoration of billiard room, card room, committee room, library, etc., the Building Construction Co., in conjunction with Messrs. George Jackson and Sons, Ltd.; marble work in swimming bath, Messrs. Farmer and Brindley; that in the Turkish bath by Messrs. A. Lee and Bros.; three squash racquets courts, Messrs. Crosby and Co.; heating and ventilating, domestic hot-water appliances, fitting up of kitchen and kitchen services, etc., Messrs. Richard Crittall and Co.; drainage and sanitary fittings and wall tiling, Messrs. Doulton and Co.; pavement lights and cast-iron windows and ceiling lights in swimming bath, Messrs. British Luxfer Prism Syndicate, Ltd.; iron skylights and glazing, Messrs. Rendle and Co.; eight electric lifts, Otis Elevator Co.; two hydraulic lifts, in the Pall Mall area, Messrs. A. and P. Stevens; pavings, Messrs. Stuart's Granolithic Co.; for reinforced concrete work, Indented bars; window fittings and radiator grilles Mr. James Gibbons; glazed bricks and tiles, and "Renton" floor channel for swimming bath, Messrs. The Leeds Fire-clay Co., Ltd.



ROYAL AUTOMOBILE CLUB, PALL MALL, LONDON. MEWÈS AND DAVIS AND E. KEYNES PURCHASE, F.R.I.B.A., ARCHITECTS.

BRITISH MUSEUM EXTENSION.



General View, looking West.

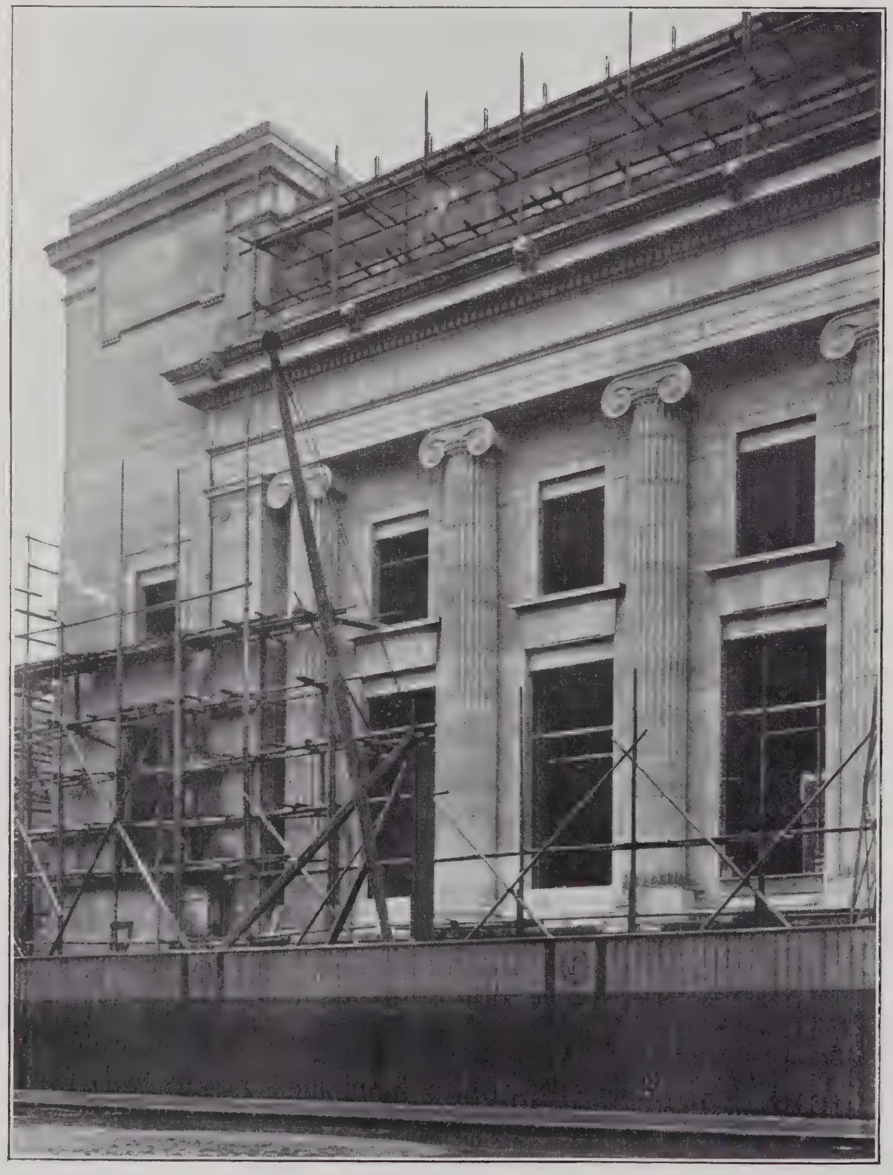
The British Museum extension, which is being carried out to the design of Mr. J. J. Burnet, A.R.S.A., F.R.I.B.A., is —as regards the exterior—practically complete. The façade, which is of the Ionic order, faces Montague Place, and has been executed in Portland stone. A forecourt still remains to be built round the main entrance, on either side of which will be placed a large lion, modelled by Sir George Frampton, R.A. These lions will be in keeping with the character of the lower portion of the building, and in the conventional Greek manner.

All the windows are to be in metal, the desire being to emphasise the extreme simplicity of the masonry. There will be a rich lead cresting over the top cornice, with crowns and sceptres at intervals over the columns. In the centre will be placed a large Minerva head, the model portions of which will be in cast lead. Considerable care has been taken to correct optical defects, which in many modern buildings are so destructive to the satisfactory appearance of a Classic façade. All the columns, it is interesting to note, are tilted inwards from the axis to the extent of $2\frac{1}{4}$in., thus preventing the front from appearing to lean towards the street. The columns are also irregularly spaced, the distance between each decreasing from the centre, and the tendency to crush at the middle of the building has been completely avoided. The building is expected to be completed, with the exception of the interior fittings, about the middle of next summer.

The accompanying photographs, taken within the past fortnight, should be regarded only as showing the present condition of the work. With the hoarding in position, hiding the base of the building, the windows unglazed, and the lead cresting missing, the representation is to that extent incomplete and defective; but sufficient is shown to indicate the massive character of the work and the refinement of the proportions and detail.

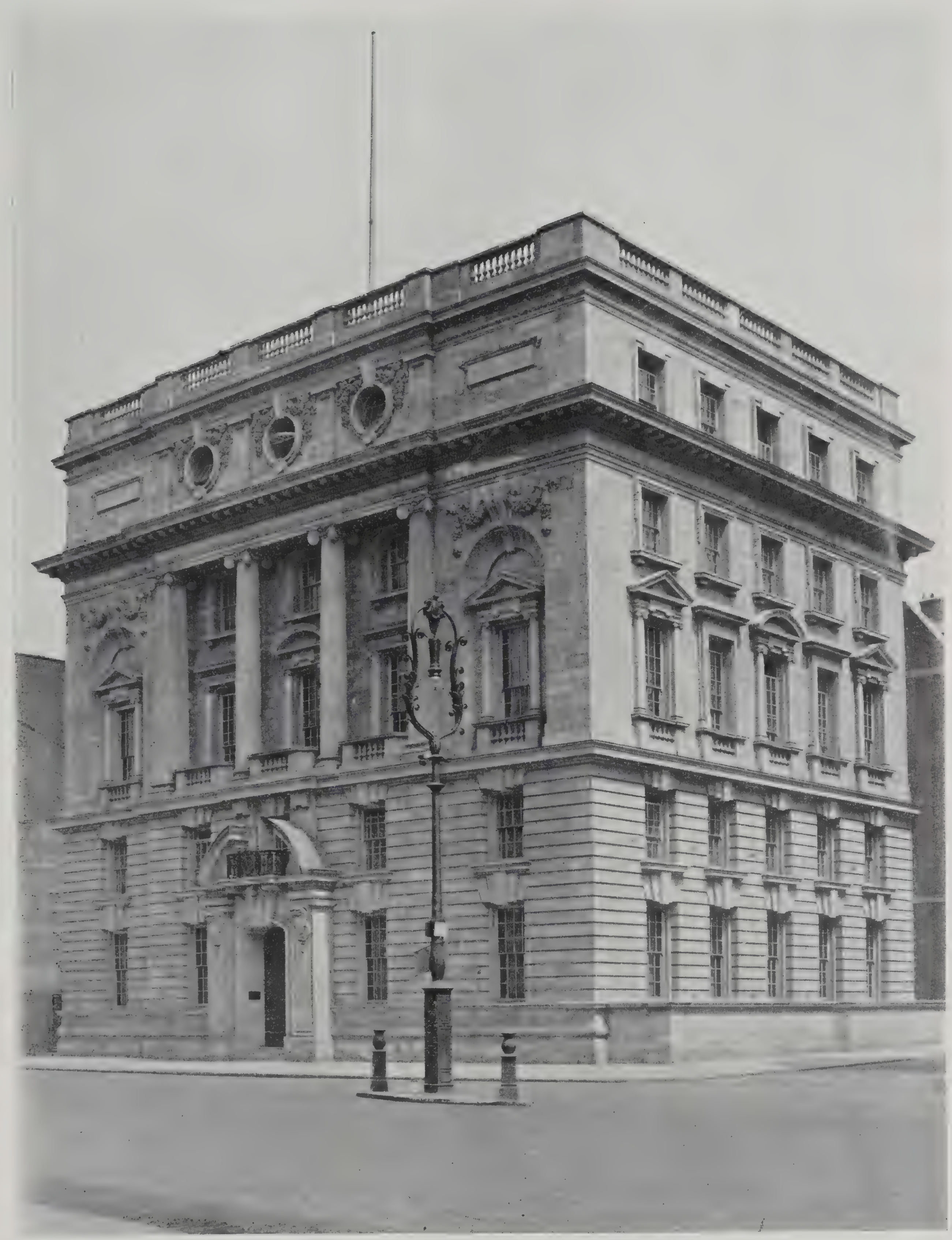
In connection with the extension a street widening scheme has been carried out, giving a very effective setting to the new front.

Pavings within the building have been laid by Messrs. Stuart's Granolithic Co., Ltd.



Detail of Eastern End.

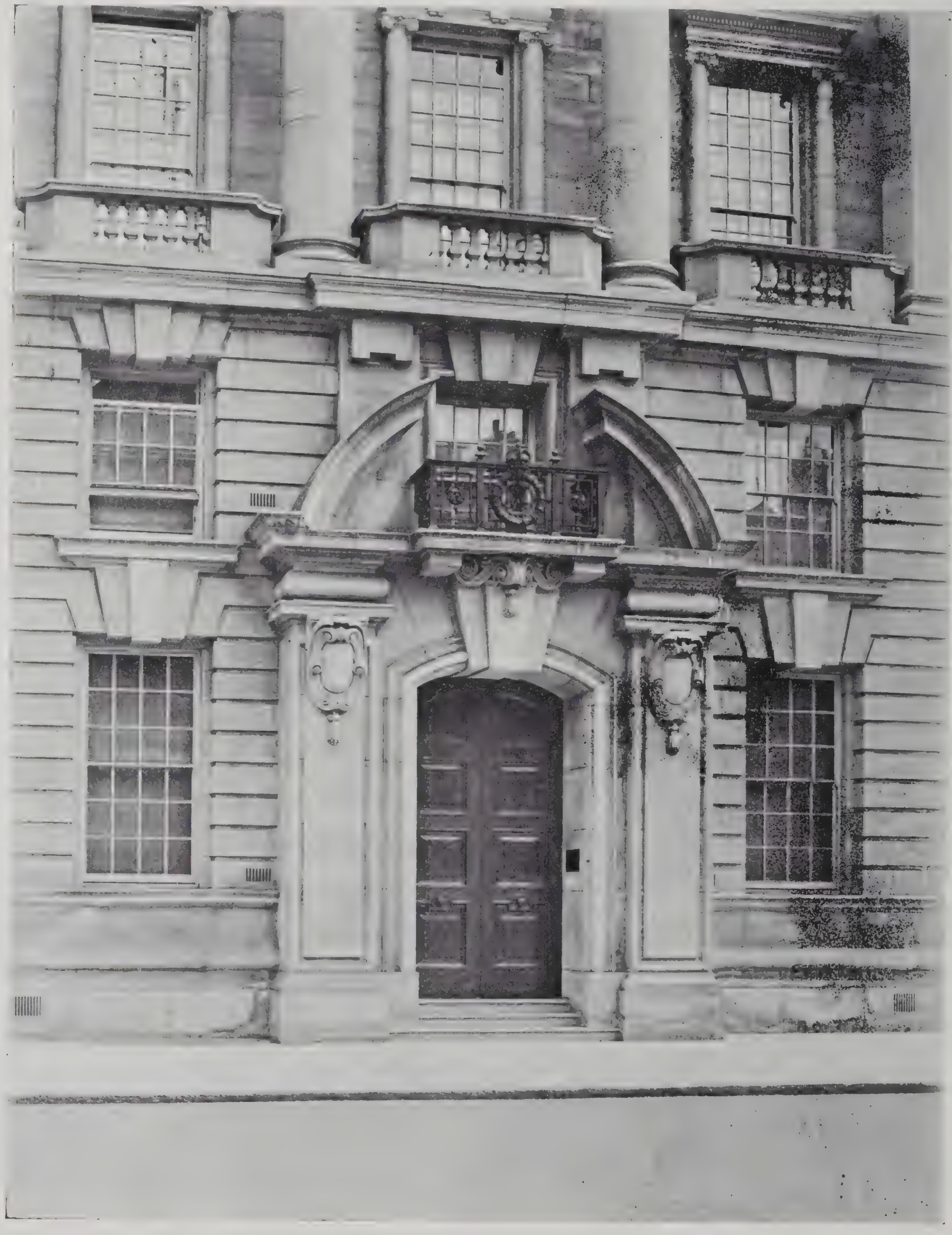
BRITISH MUSEUM EXTENSION: THE NEW FACADE TO MONTAGUE PLACE.
J. J. BURNET, A.R.S.A., F.R.I.B.A., AND SON, ARCHITECTS.



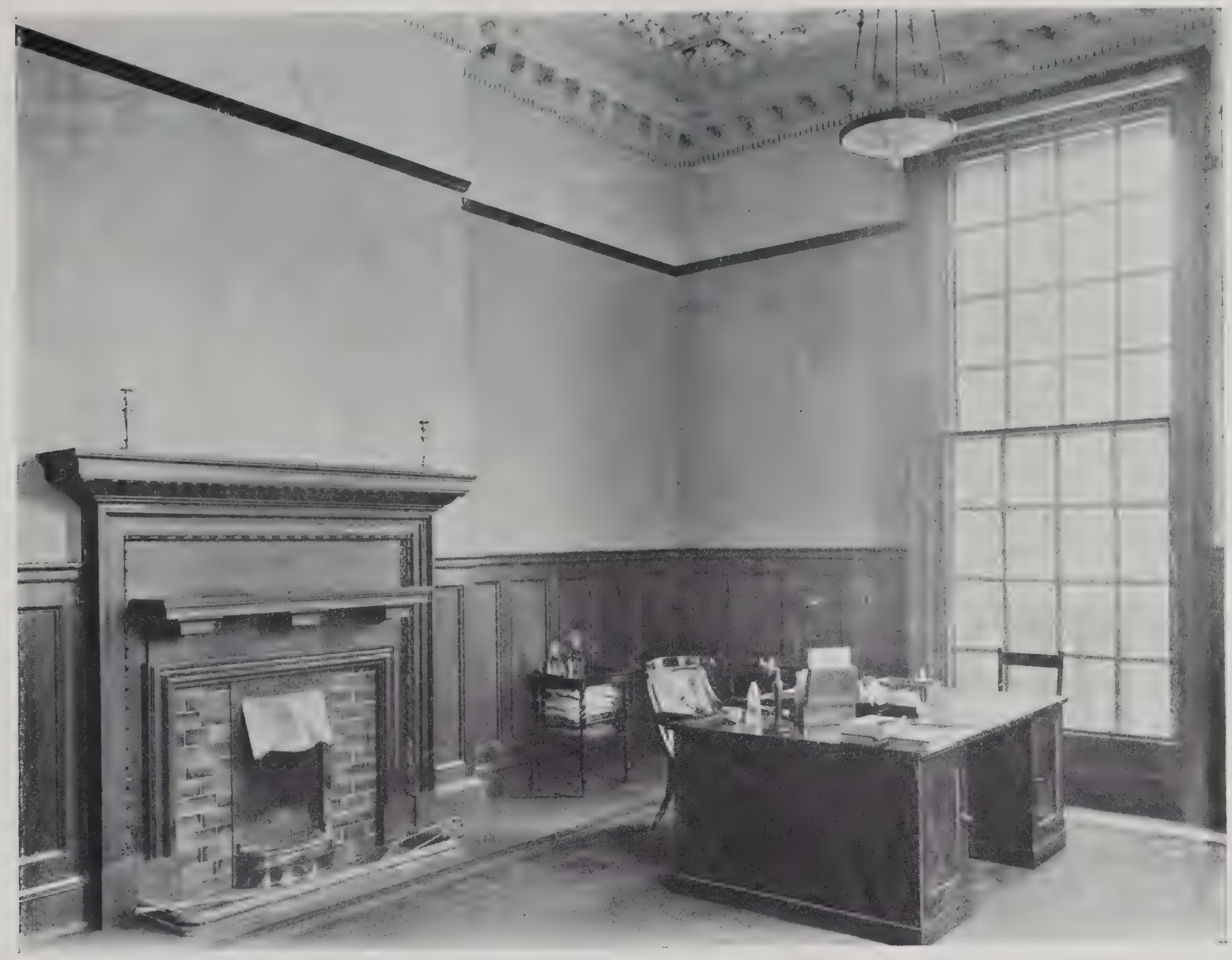
NEW BUILDING FOR H.M. OFFICE OF WOODS, FORESTS, AND LAND REVENUES, WHITEHALL, LONDON.
JOHN MURRAY, F.R.I.B.A., ARCHITECT.

H.M. OFFICE OF WOODS AND FORESTS.

Now that Regent Street can no longer claim to be an example of consistent architectural dignity, Whitehall seems likely to become the most imposing thoroughfare in London. It is occupied mainly by Government buildings, which naturally offer far more opportunity for architectural effect than do business premises. At the bottom, on the west side, is the large block housing the Local Government Board, which was designed by the late Mr. J. M. Brydon. An archway joins this building to Scott's great Home Office block. To the north are Sir Charles Barry's Treasury building, the little building of the Scottish Office, Kent's Horse Guards, and Ripley's Admiralty building, and still further to the north, Sir Aston Webb's triumphal termination to the Mall. On the opposite side, from the southern end, are Gwydir House, Inigo Jones's Banqueting Hall, the new War Office, and the Office of Woods, Forests, and Land Revenues. This last-named building, designed by Mr. John Murray, F.R.I.B.A., is probably the best of the new Government buildings erected in Whitehall. It stands on a narrow site between Whitehall Place and Great Scotland Yard (which is being



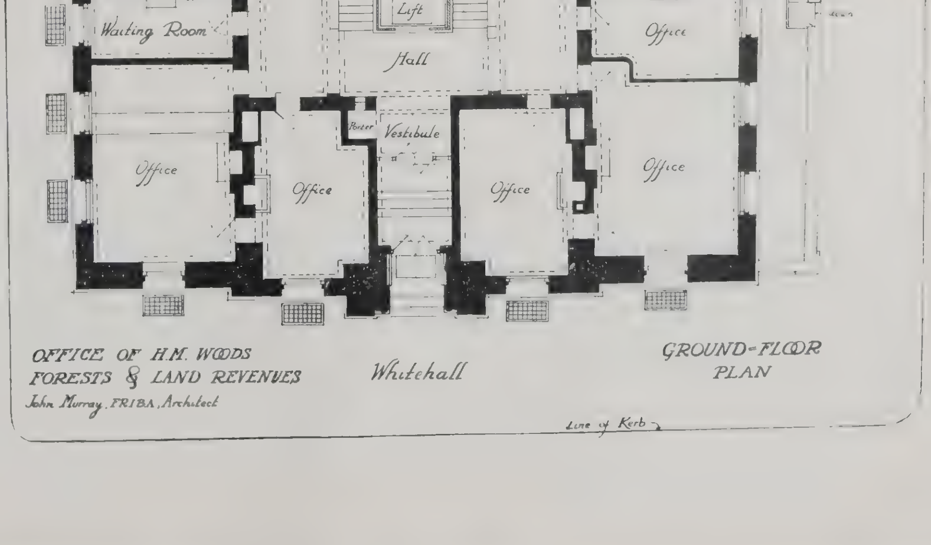
MAIN ENTRANCE TO H.M. OFFICE OF WOODS, FORESTS, AND LAND REVENUES.

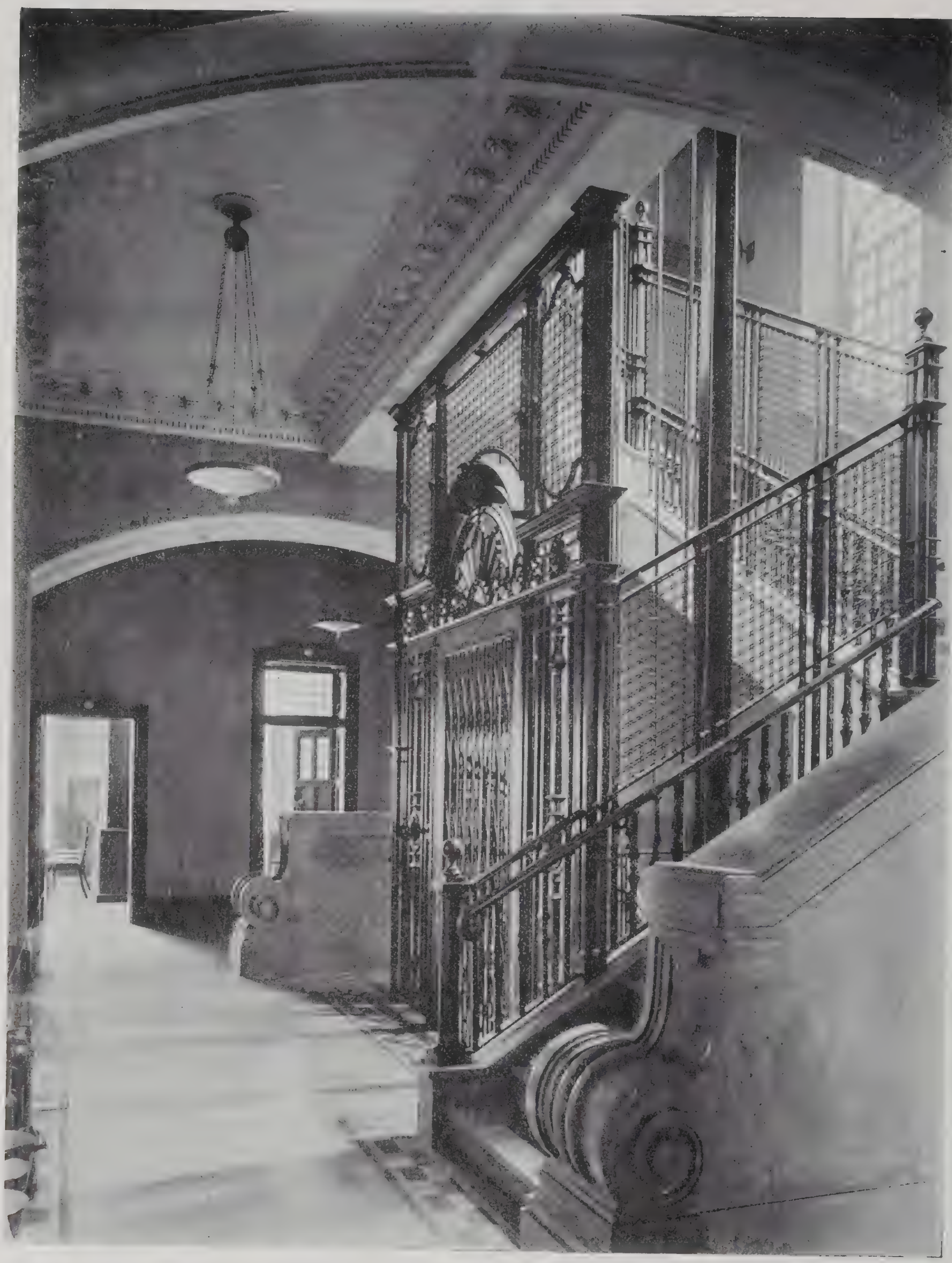


H.M. OFFICE OF WOODS, FORESTS, AND LAND REVENUES: ROOM ON FIRST FLOOR

carried through 40ft. wide into Whitehall) and the cornices and storeys are in alignment with those of the War Office adjoining. The site was formerly occupied by old buildings erected at the end of the eighteenth century, and the ground was once part of the garden of old Whitehall Palace. During the excavations numerous larch and fir piles which supported the old building were uncovered, and some, it is interesting to note, were found to be as sound as new timber.

From the accompanying plan it will be seen that a hall is arranged in the centre of the building, in which the lift is placed, with staircase on three sides, and around which are grouped the offices. Throughout the interior the strictest economy is observable, the offices, with the exception of two or three on the principal floor—the first floor—being no different from those usually found in ordinary business premises; the building, indeed, devoid of any attempt at interior elaboration, is no other than a business building. The exterior, however, as part of an important thoroughfare, has called for greater architectural consideration. But there is nothing florid about it, the enrichment being confined well within limits, and made to embellish the architectural lines instead of overrunning them. The fenestration is good, and the use of the Ionic Order effective. In the original design vases were shown on the piers of the balustrade that crowns the building; these, in fact, were actually executed and placed in position, but were subsequently taken down in deference to the opinion of those in authority.





H.M. OFFICE OF WOODS, FORESTS, AND LAND REVENUES: VIEW ON FIRST FLOOR, LOOKING TOWARDS STAIRCASE.

The façades are faced with Portland stone from the ◇ Wakeham quarries.

The building is supported by a raft of concrete and the basements are enclosed with concrete retaining walls. The principal staircase is constructed of reinforced concrete covered with "Silex" stone.

The general contractors were Messrs. John Mowlem and Co., Ltd.; and among the sub-contractors were the following: Heating and hot water, Messrs. Rosser and Russell, Ltd.; lifts, Messrs. R. Waygood and Co., Ltd.; lift enclosures, Messrs. the Bromsgrove Guild; sanitary fittings, Messrs. Doulton and Co., Ltd.; chimneypieces, Mr. John P. White; grates, Messrs. J. and R. Corker; tile surrounds and kerbs, Messrs. Sherwin and Cotton; Hopton Wood Stone for staircase, Messrs. Hopton Wood Stone Firms, Ltd.; prism lights, Messrs. The British Luxfer Prism Syndicate, Ltd.; plastering, Messrs. James Annan, Ltd.; entrance door furniture, Messsrs. Charles Smith, Sons, and Co., Ltd., Birmingham; paint, Messrs. Sissons Bros. and Co.; bronze vestibule lamp, Messrs. J. W. Singer and Sons, Ltd.

In the erection of the building, electric and steam derrick cranes by Messrs. Butters Bros. and Co., of Glasgow, were used.

THE ALBEMARLE CLUB, LONDON.

The Albemarle Club was founded in 1874, and is one of the earliest of its kind—being both for men and women. New premises being desired, the club acquired, a year or two ago, No. 37, Dover Street, London, W., built in 1765-1774, from designs by Sir Robert Taylor, and formerly the Bishop of Ely's house. The shape of the site necessitated a long corridor to the chief rooms on the ground floor, and, in order to obtain this, unobstructed, the old stone staircase from the ground to the first floor was removed and re-fixed above. Owing to adjoining lights, it was not possible to connect the front and back portions of the building above the first floor, so the main staircase, which is placed half-way along the corridor, is only carried up one floor, and east and west staircases are continued above. The billiard-room, which has been placed in the roof of the Dover Street portion, in consequence of the front having been set back behind the parapet, is hardly visible from the street. The work is carried out with great skill, and is very carefully detailed. Messrs. Smith and Brewer, of Gray's Inn Square, were the architects.

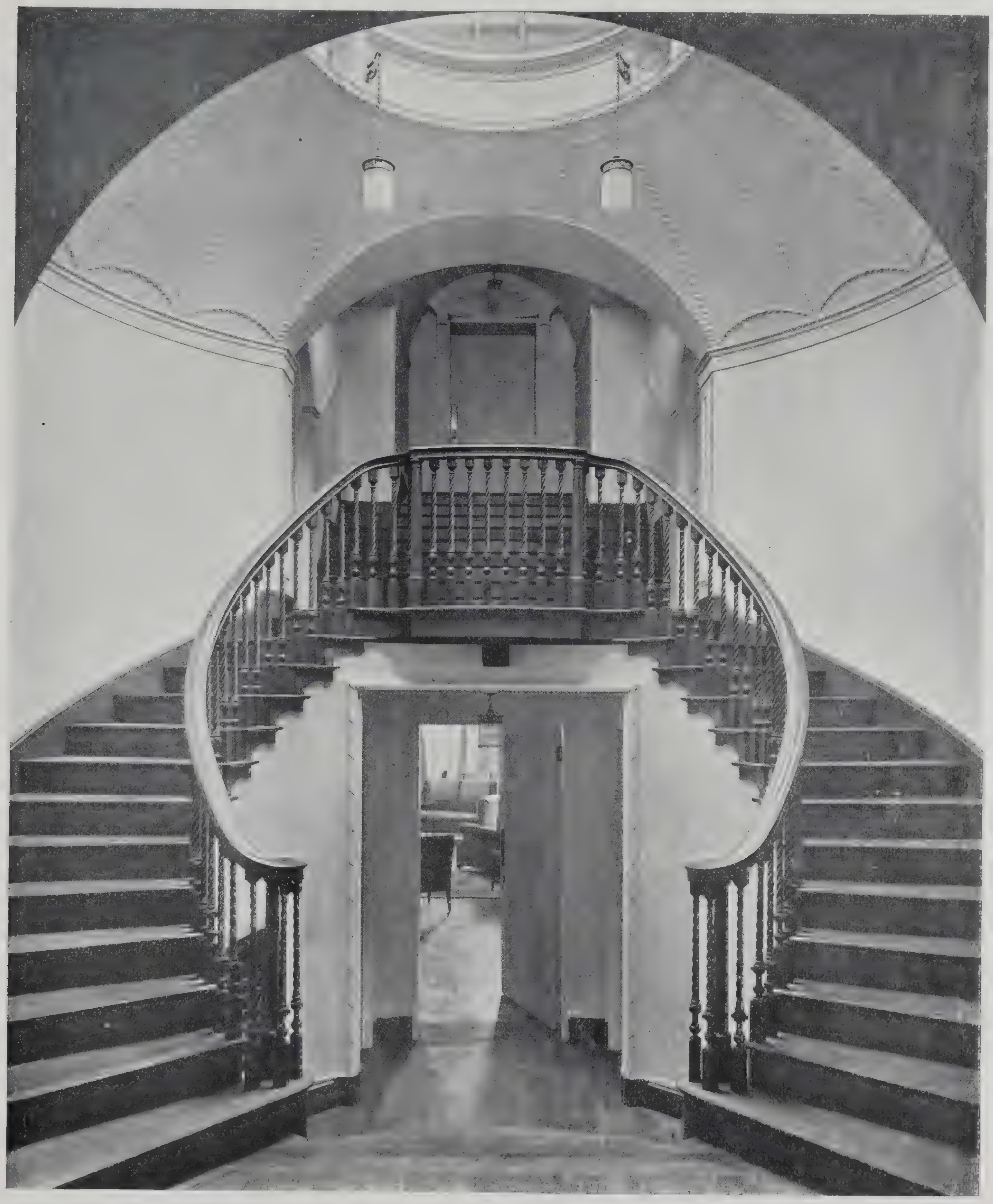
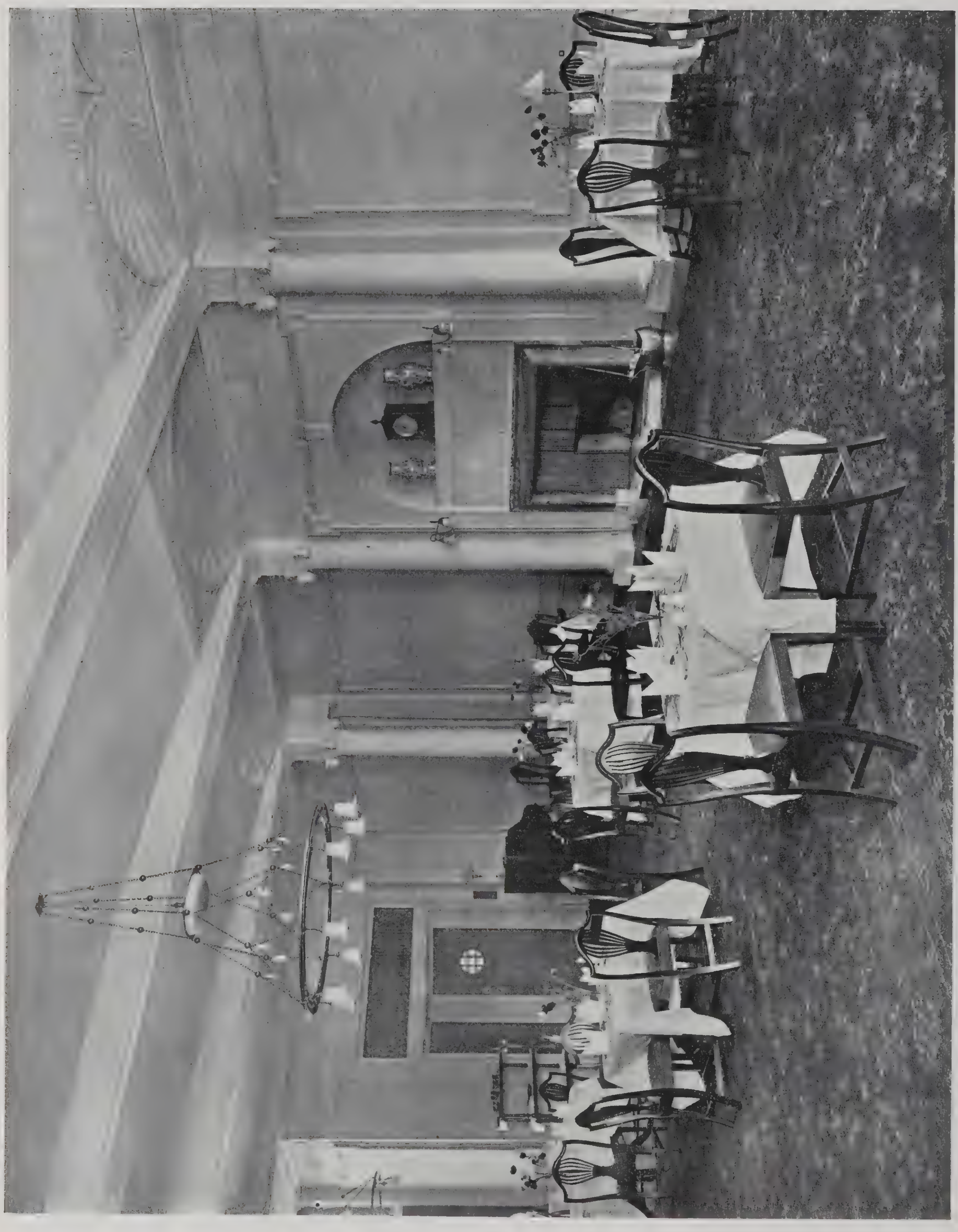


Photo: E. Dockree.

THE ALBEMARLE CLUB, DOVER STREET, LONDON: WEST STAIRCASE. SMITH AND BREWER, ARCHITECTS.



DINING-ROOM AT THE ALBEMARLE CLUB, DOVER STREET, LONDON. SMITH AND BREWER, ARCHITECTS.

The general contractors were Messrs. Patman and Fotheringham, Ltd.; fire resisting floors throughout by Messrs. the Kleine Patent Fire-resisting Flooring Syndicate, Ltd.; wood-block floors by Messrs. Bassant Bros., Ltd.; plaster work by Mr. G. P. Bankart, Messrs. G. Jackson and Sons, Ltd., and Messrs. G. and A. Brown, Ltd.; plumbing and sanitary work by Messrs. J. Bolding and Sons, Ltd.; heating, Messrs. Richard Crittall and Co.; ceiling lights and fire-resisting glazing, Messrs. the British Luxfer Prism Syndicate, Ltd.; door furniture and locks by Messrs. Hart, Son, Peard and Co., Ltd., and Mr. James Gibbons; stoves, grates, etc., by Messrs. Thomas Elsley, Ltd., Messrs. the Carron Co., and Messrs. Ames and Hunter; lift cage, Mr. John P. White; Hopton-Wood stone chimneypieces and hearths, Messrs. the Hopton-Wood Stone Firms, Ltd.; cement, Messrs. the Portland Cement Manufacturers, Ltd.

BUSINESS PREMISES, MORTIMER STREET, LONDON.

Among the new buildings completed this year in the West End of London is the fine block of business premises with its main frontage to Mortimer Street and side elevation to Great Portland Street, the architects of which were Messrs. William and Edward Hunt.

The building occupies the site of the old German Athenæum Club, and has been designed with the accommodation of two halls, the principal one being on the ground floor, with entrance from Mortimer Street through a corridor, on each side of which are showrooms and offices. The remainder of the building is planned for showrooms, offices, etc.

The elevations are of Portland stone from the Western quarry, that to Mortimer Street having a shield charged with the Howard de Walden arms and other ornaments in bronze. The roofs are laid with U-section red tiles and green Westmorland slates. The windows have wrought-iron casements, the circular roof-lights being also of iron. The whole of the construction is fire-resisting.

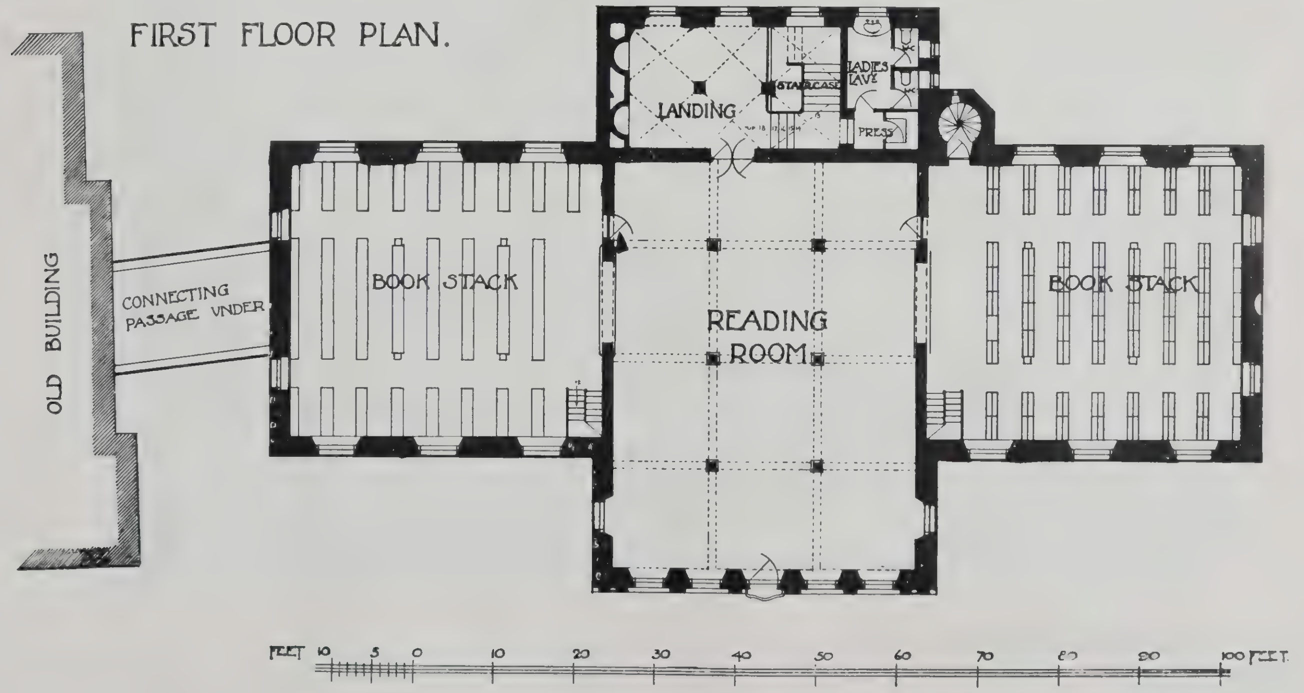
Messrs. H. and E. Lea were the general contractors. The sub-contractors were as follows:—Stone masonry, marble paving, and staircase: A. Lee and Bros., Ltd.; steelwork, heating, and ventilation, casements and roof-lights, Howard and Co.; bronze ornaments, wrought steel and bronze work, William Hatton; stone carving, John Lineham; wood carving, H. H. Martyn and Co.; decorative plasterwork, The Birmingham Guild and H. and E. Lea; wood-block flooring, The Art Pavements and Decorations, Ltd., and Burke and Co.; mantelpieces, The Bell Range and Foundry Co., Ltd.; glazed bricks and roofing tiles, Ames and Hunter; pavement lights, The Improved Pavement Light Co.; electric lift, The Easton Lift Co.

NEW LIBRARY BUILDING, ST. ANDREWS UNIVERSITY.

Mr. Lorimer has already to his credit a long list of delightful buildings, almost exclusively domestic, and to the number must now be added the new library building which has been carried out from his designs at the University of St. Andrews. This building forms an addition to the accommodation of the existing library building, and is joined to it by the neck shown on the plan. It was built with funds supplied by Mr. Andrew Carnegie during the time he was Lord Rector of the University.

The basement floor is from end to end a book stack. The central portion of the first floor contains a students' reading-room, at each side of which there is a counter for passing out books. The whole space on each side of the reading-room, from top to bottom, is a book stack. These book stacks are made entirely of steel, and the floors are of glass, all the work in connection with this contract having been carried out by the Art Metal Construction Company of America.

The floors (other than those of glass already referred to), the roofs and the columns of the buildings are of reinforced concrete executed by Stuart's Granolithic Stone Co., on Wells's system. The roof is covered with Limmer asphalt.



NEW LIBRARY BUILDING, ST. ANDREWS UNIVERSITY R. S. LORIMER, A.R.S.A., F.R.I.B.A., ARCHITECT

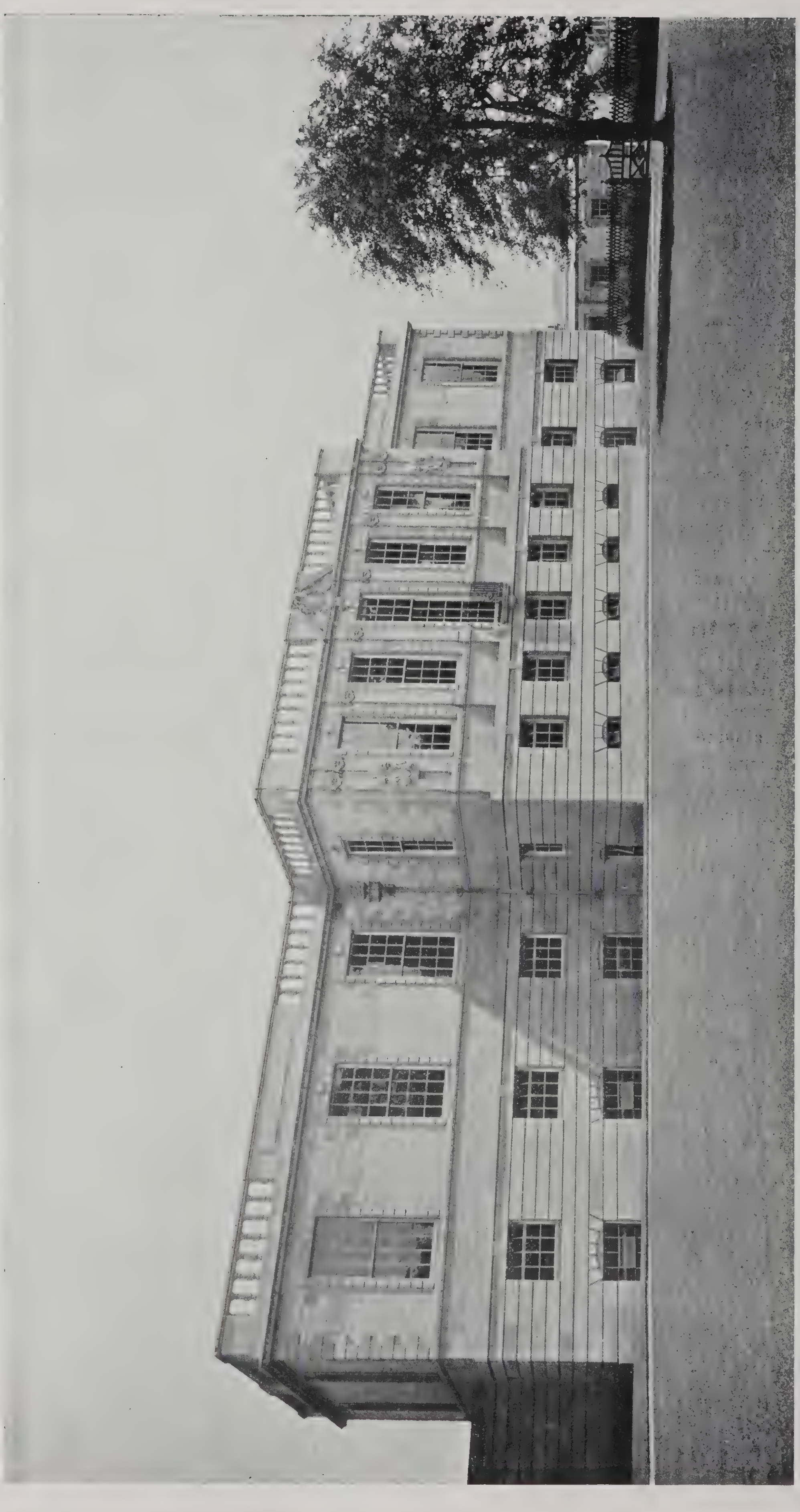
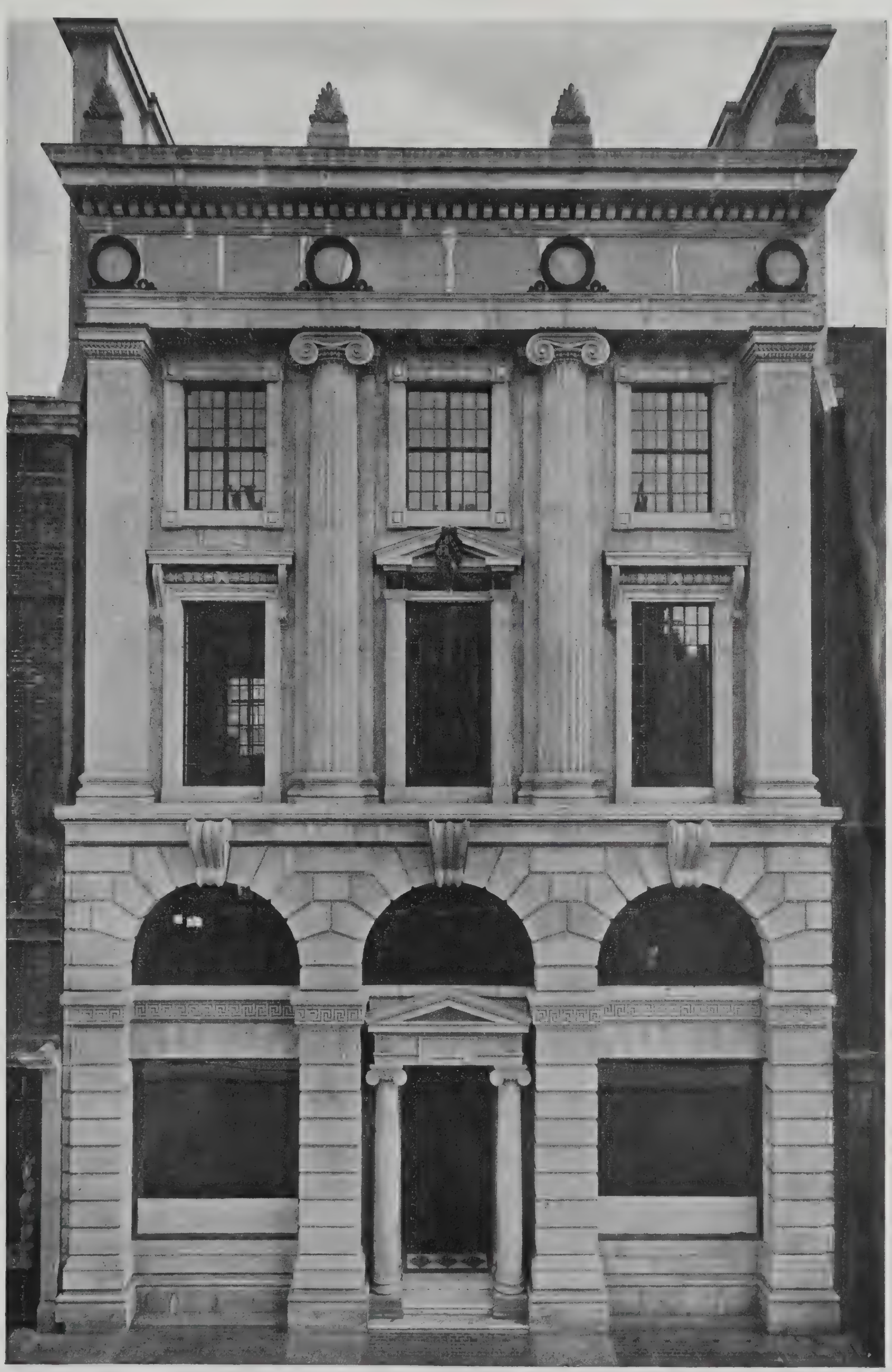
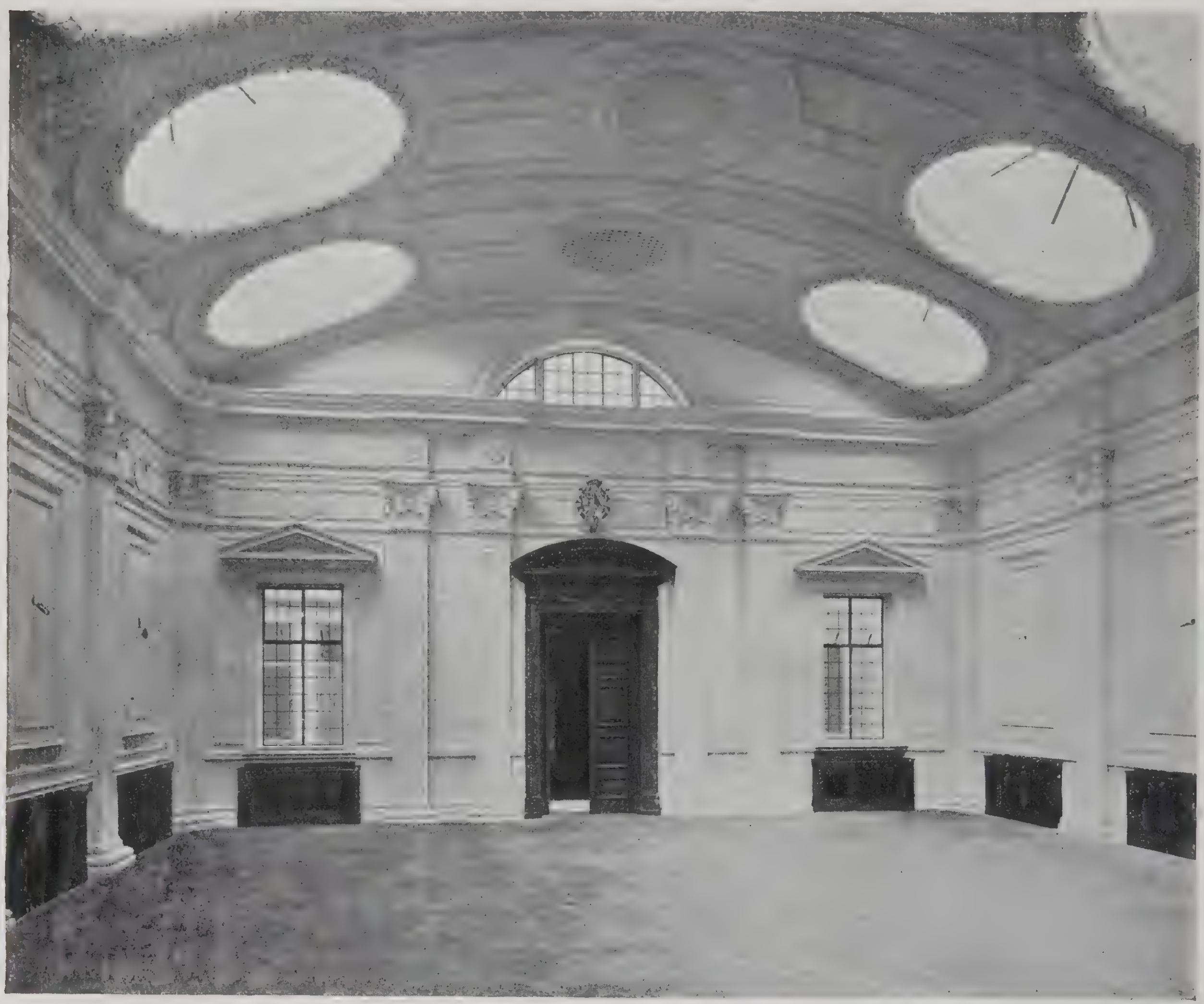


Photo: Thomas Lewis.

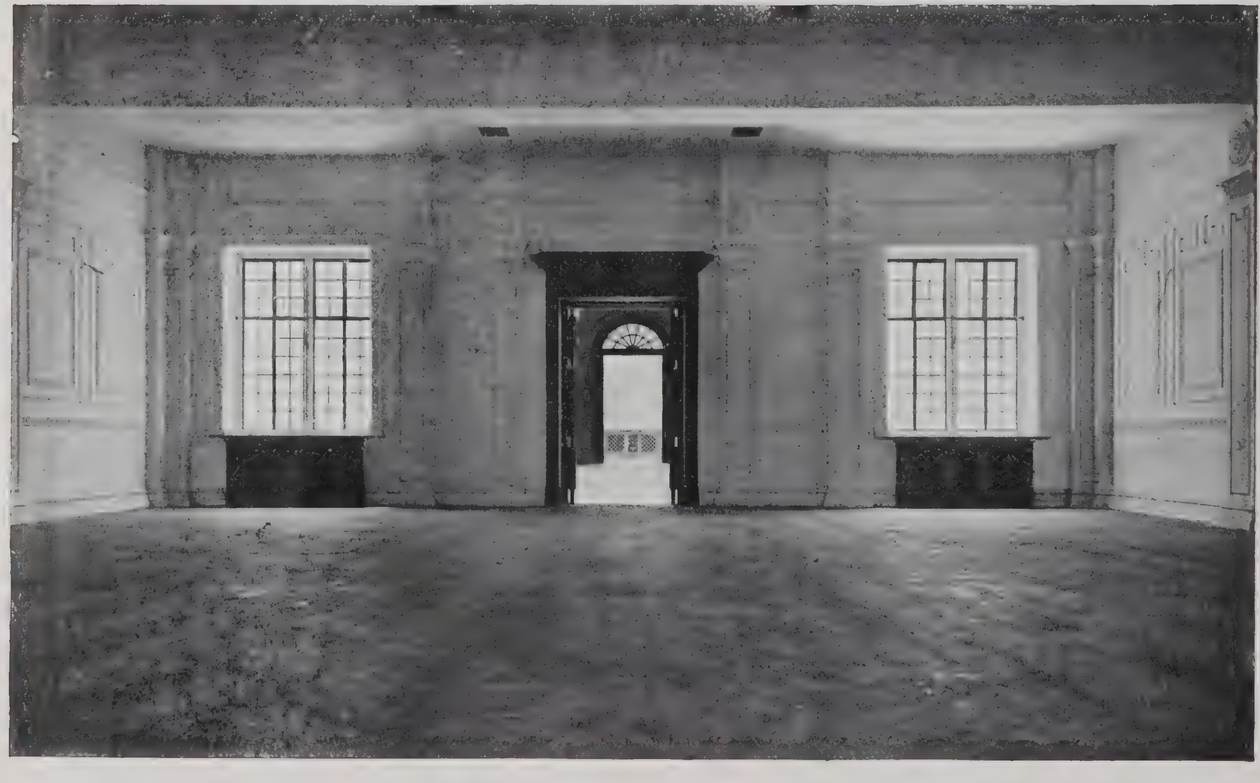
NEW LIBRARY BUILDING, ST. ANDREWS UNIVERSITY. R. S. LORIMER, A.R.S.A., F.R.I.B.A., ARCHITECT.



BUSINESS PREMISES, No. 93, MORTIMER STREET, LONDON, W. WILLIAM AND EDWARD HUNT, ARCHITECTS.



Ground-floor Hall



Basement Hall.

BUSINESS PREMISES, No. 93, MORTIMER STREET, LONDON. WILLIAM AND EDWARD HUNT, ARCHITECTS

THE FREEMASONS' HALL, LEICESTER.

The new buildings of the Freemasons' Hall at Leicester occupy a site at the rear of an old house, the front main portion of which was retained and altered internally to suit the new circumstances. The house is connected with the new portion by a corridor 7ft. 6in. wide, and about 65ft. long.

Two of the reception rooms on the ground floor of the house are adapted as robing and cloak rooms, and the other rooms on this floor are devoted to caretaker's apartments.

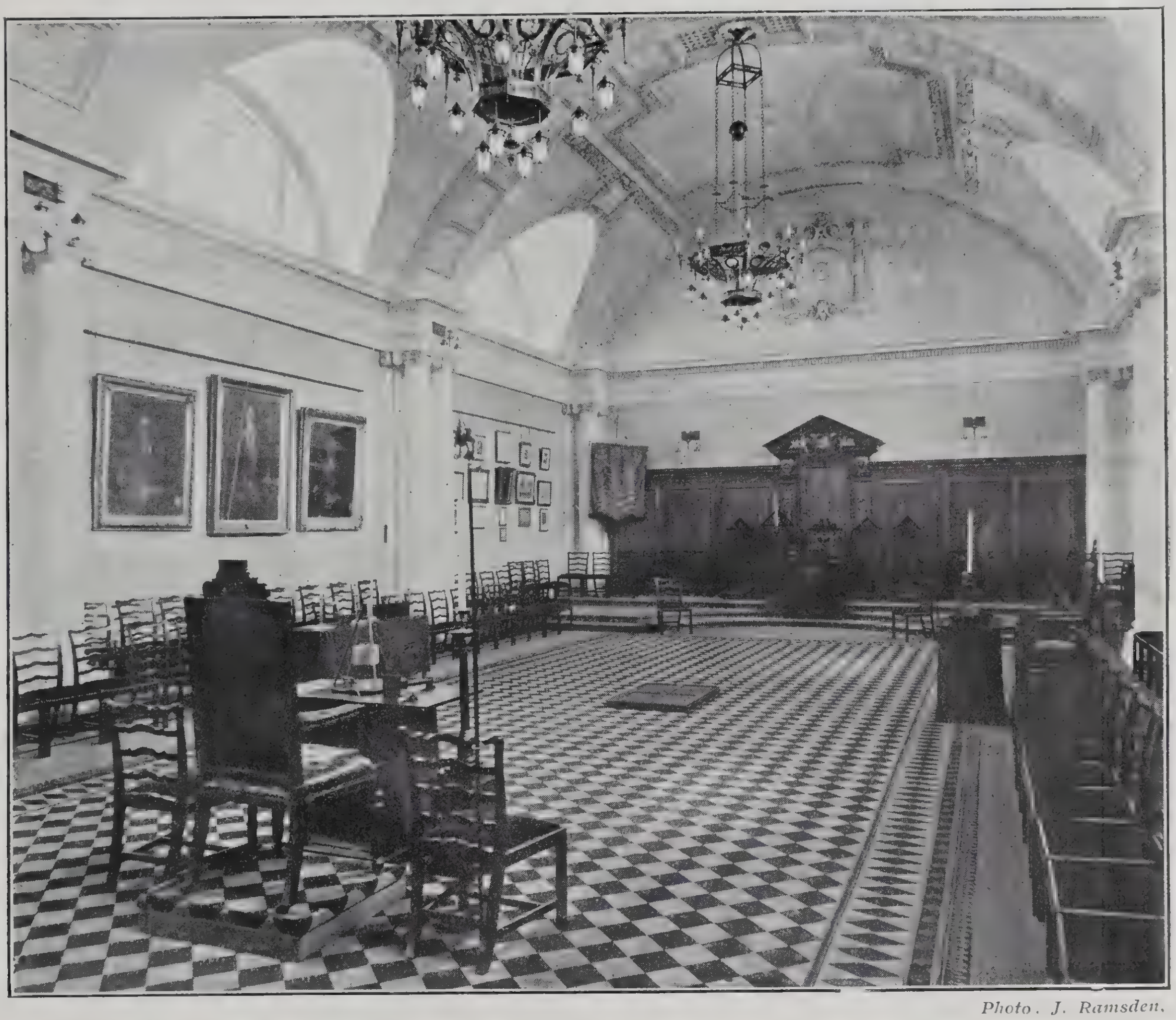


Photo. J. Ramsden.

NEW MASONIC HALL, LEICESTER: THE LODGE ROOM. H. H. THOMSON, F.R.I.B.A., ARCHITECT.

The main corridor leads to the ante-room and dining-room on the ground floor. The latter is 55ft. by 35ft., and 16ft. 6in. high, accommodating about 160 guests. The ante-room and dining-room are separated by three pairs of French windows, by which means the two rooms can be used together when occasion requires, affording a total seating accommodation for more than 200.

Leading off the dining-room, but without doors into the corridor, are the scullery and kitchens, these being top-lighted and ventilated, and fitted with every modern cooking convenience.

The grand staircase leads off from the centre of the long corridor and is the approach to the Lodge room on the first floor, with two ante-rooms. The Lodge room is 66ft. long and 35ft. wide, divided into three bays with coupled Ionic columns and pilasters. It is lighted by six dormer semicircular windows above the main cornice cutting into the curve of the segmental ceiling. At the daïs end of the hall the wall is panelled to a height of 9ft. in Kauri pine, polished, and in the centre pediment is a coat-of-arms executed in plaster coloured and gilt. This coat-of-arms is the work of Mr. J. Crossland McClure, sculptor, of London. The electroliers and brackets are in oxydised brass.

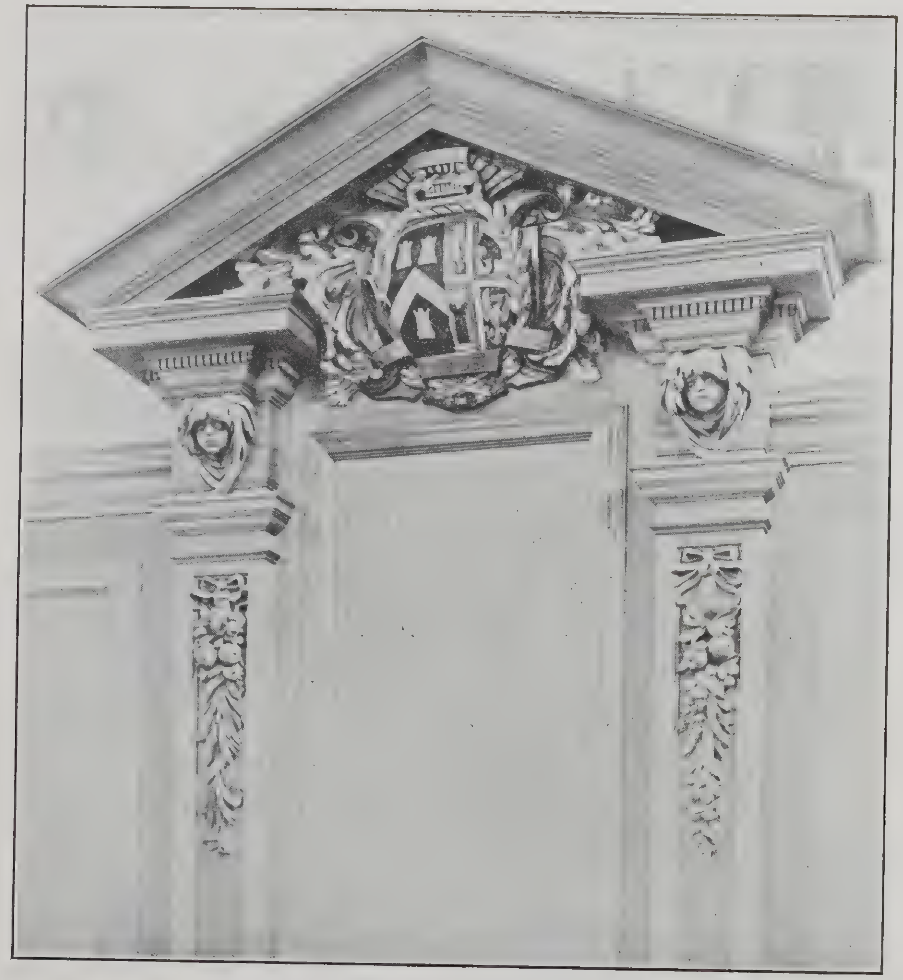
The organ gallery is over the ante-room. A portion of it projects into the hall, and is supported on Doric columns.

The Lodge room and dining-room are heated and ventilated on the plenum system, the remainder of the building being heated by low-pressure steam radiators.

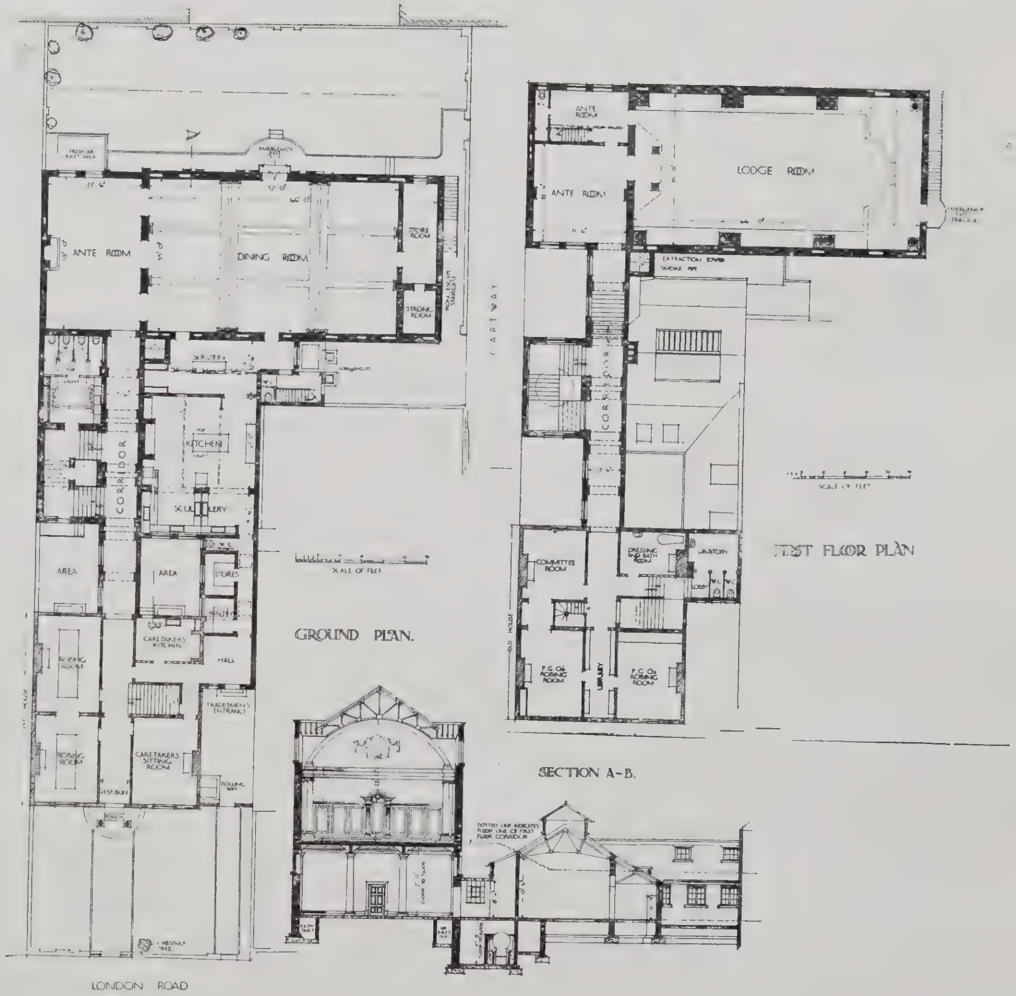
The buildings were formally opened by Lord Ampthill on April 25th last.

Mr. Howard H. Thomson, F.R.I.B.A., of Leicester, was the architect of the building.

The following were the principal craftsmen and contractors engaged on the work:—Chief contractors, A. and W. Chambers, Leicester; reinforced concrete, The Empire Stone Co., Ltd., London; heating and ventilating and cooking apparatus, Ashwell and Nesbit, London and Leicester; corridor flooring, British Doloment Flooring Co., London; fibrous plaster, G. P. Bankart, London; electric light fittings, Collins and Co., Leicester; iron roof construction, W. Richards and Son, Leicester; iron windows, Henry Hope and Sons, Birmingham; wood carving, Antony Smith, Leicester; models for wood carving, J. Crossland McClure, London; sanitary fittings, George Jennings, Ltd., London; plumbing, Wm. Freer, Leicester; door furniture and locks, Collins and Co., Leicester; concrete steps, Patent Victoria Stone Co., London; electric light installation, Gent and Hurley, Leicester. Wall painting in the dining-room by Roland Barker, of Leicester.



Detail of Centre of Panelling at Dais End of Lodge Room.



Ground- and First-floor Plans.

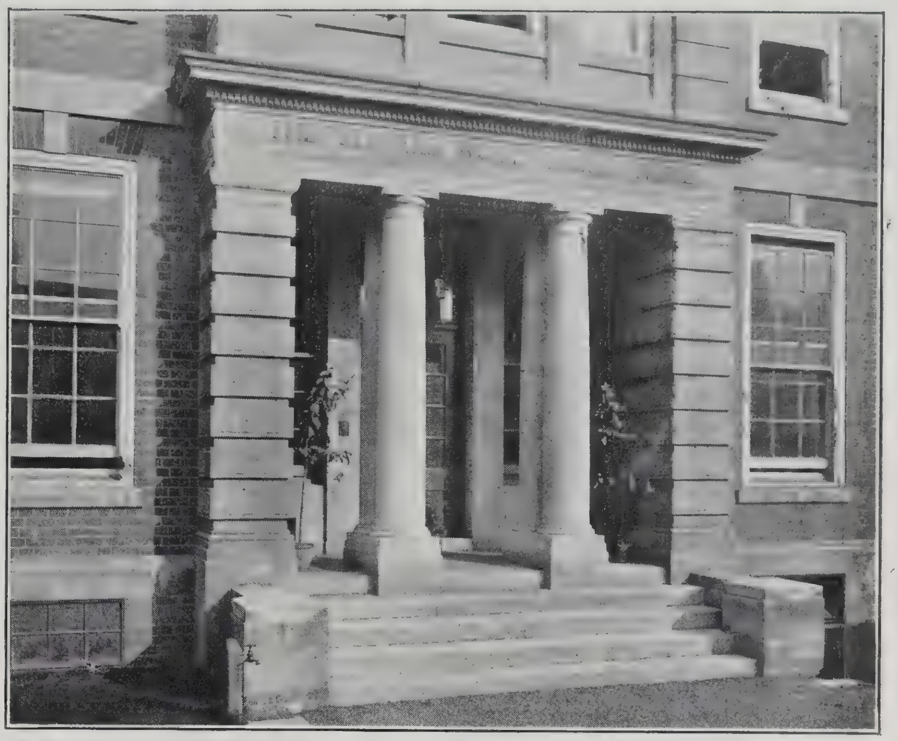
NEW MASONIC HALL, LEICESTER. H. H. THOMPSON, F.R.I.B.A., ARCHITECT.

NURSES' HOME, LEICESTER INFIRMARY.

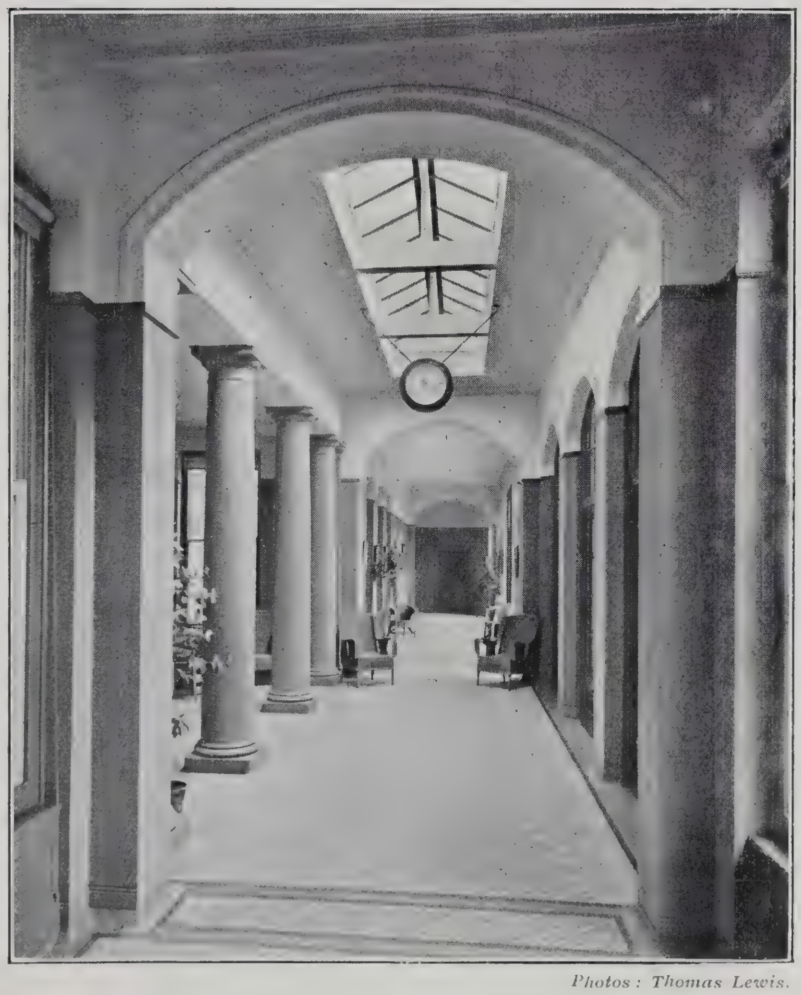
The new nurses' home at the Leicester Infirmary is a detached block, the principal front facing south, and the arms at each end fronting to the east and west respectively. Every bedroom therefore receives direct sunlight during some portion of the day.

The building is fire-resisting throughout. It provides 98 separate bedrooms on the first, second, and third floors. The ground floor is given up to the necessary sitting and other rooms. A lift is provided from the bottom to the top of the building. Ample space for bicycles and stores is provided in the basement. The total cost of the building was about £20,000.

Messrs. Everard, Son, and Pick, of Leicester, were the architects.



ENTRANCE TO NEW NURSES' HOME AT LEICESTER INFIRMARY.
EVERARD, SON AND PICK, ARCHITECTS.



Photos: Thomas Lewis.

NEW NURSES' HOME, LEICESTER: GROUND-FLOOR CORRIDOR.

The following firms (of Leicester, where not otherwise stated) carried out the various works:—General contractors, Henry Herbert and Sons; stonemasons, Pearson and Shipley; slaters, Ellis, Partridge and Co., Ltd.; plasterers, Rimmington Brothers; founders, Cort, Paul and Cornick; structural steelwork, Gimson and Co., Ltd.; plumber, J. G. Carver; painters, T. C. King and Co.; heating, Ashwell and Nesbit, Ltd.; electric lighting, T. H. Wathes and Co., Ltd.; lifts, Gimson and Co., Ltd.; glazed wall tiling, Pilkington's Tile and Pottery Co., Ltd., near Manchester; terrazzo paving, Turpin's Co., Ltd., London; composition flooring, Stonwod Fireproof Flooring Co., Ltd., London; sanitary fittings, Doulton and Co., Ltd., London; ironmongery and electric light fittings, Collins and Co.; grates, Cort, Paul and Cornick; clocks, Curtis and Horspool.

ST. PHILIP'S HALL, THE ORATORY, BIRMINGHAM.

This building has recently been erected by the Fathers of the Oratory, Birmingham, for the purposes of a parish hall.

The exterior is faced with thin Black Country bricks in white mortar, with Hollington stone dressings; the roof being covered with green slates.

The large hall has some enriched plaster-work by Messrs. Turner and Hann, of King's Heath, Birmingham.

The stone carving is by Messrs. Chidley, of Walsall, and the ornamental ironwork by Messrs. Hardman, Powell and Co., of Birmingham.

The general contractors were Messrs. J. Barnsley and Sons, and the architects Messrs. Cossins, Peacock and Bewlay, of Birmingham.

The design, though simple in general character, has been worked out with great care, and the building is very pleasing. The fenestration is particularly good, while such parts as the small oval window over the doorway, and the embellishment of the latter, are evidences of refinement.

NEW POLICE STATION AND COURTS, BURTON-ON-TRENT.

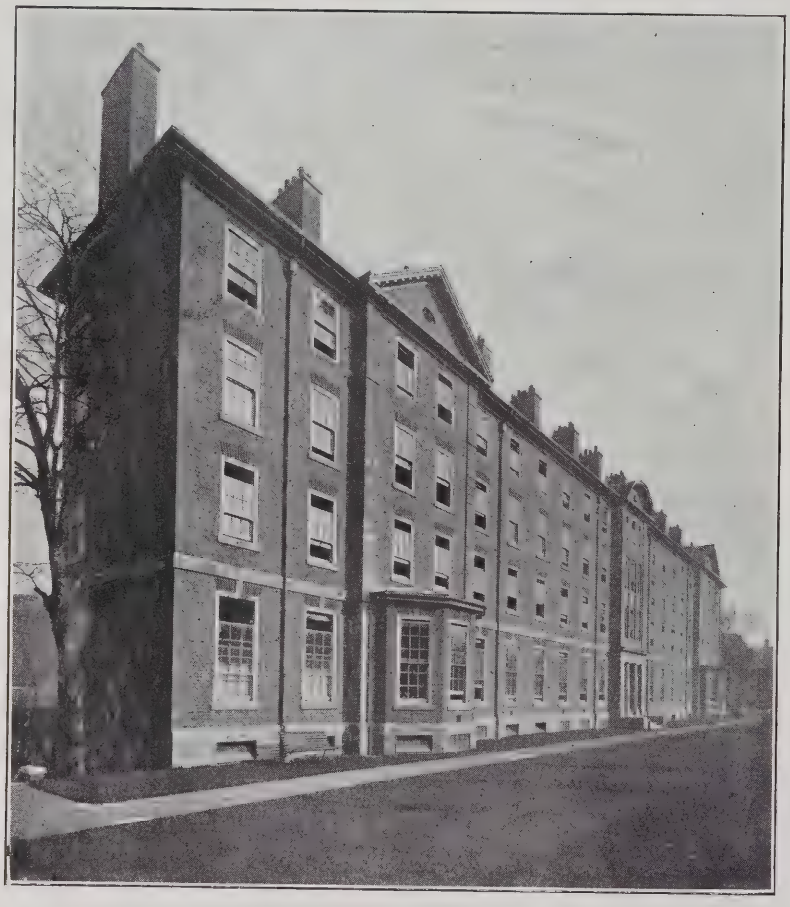
These buildings, just completed, have been erected on a long narrow site in Horninglow Street, and comprise police courts, police station, and a detached house for the superintendent of police. The courts and station have been kept distinct and separate from each other as much as possible.

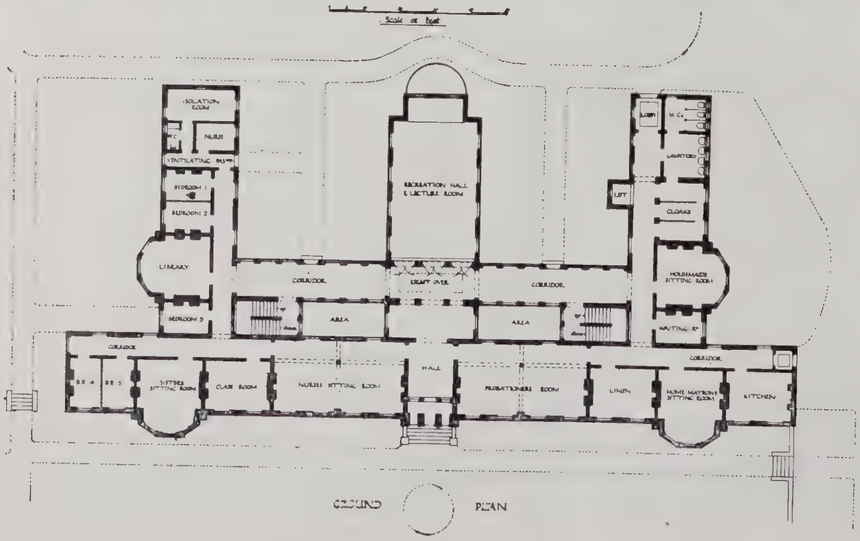
The courts block comprises a large court (40ft. by 31ft. 6in.), small occasional court (also used for children's cases and for coroner's inquests), hall (45ft. by 17ft. 6in.), rooms for witnesses, magistrates' clerk, and retiring rooms for the magistrates.

The police station has the usual charge room, with offices for inspector and superintendent adjoining. There are six cells, communicating directly with the docks in each court through a corridor in the basement. Accommodation is provided for fourteen constables, with living rooms and kitchens on the ground floor, the sleeping cubicles, bathrooms, and cleaning and brushing and drying rooms being placed on the first floor, where an isolated sick bay is also provided. At the rear of the station is an adequate drill yard, and beyond this the detached house for superintendent of police. A mortuary, with retiring room, and the dog-houses are in a small detached building in the yard.

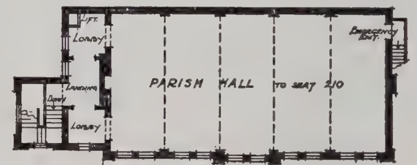
The main fronts have been carried out in Portland stone, with a base of Cornish granite, the dome being of lead, with cast enrichments. The elevations to the side road and the superintendent's house are of brick, of a quiet Georgian treatment, with a modillion cornice of wood, and roofs of green slates.

The internal treatment of the courts block has had special attention, the large hall being the most noticeable feature. It is faced with Bath stone. The columns are of finely selected Hopton Wood stone, dull polished, and the floor also is of Hopton Wood. There is considerable modelled plasterwork on the ceiling, which is arched, and the ceiling light is carried out in varied tones of white glass

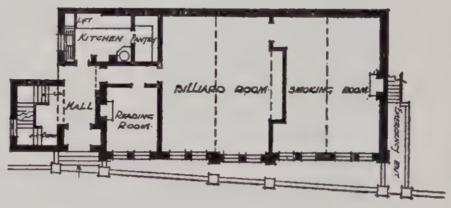




NEW NURSES' HOME, LEICESTER INFIRMARY. EVERARD, SON AND PICK, ARCHITECTS.



FIRST FLOOR PLAN

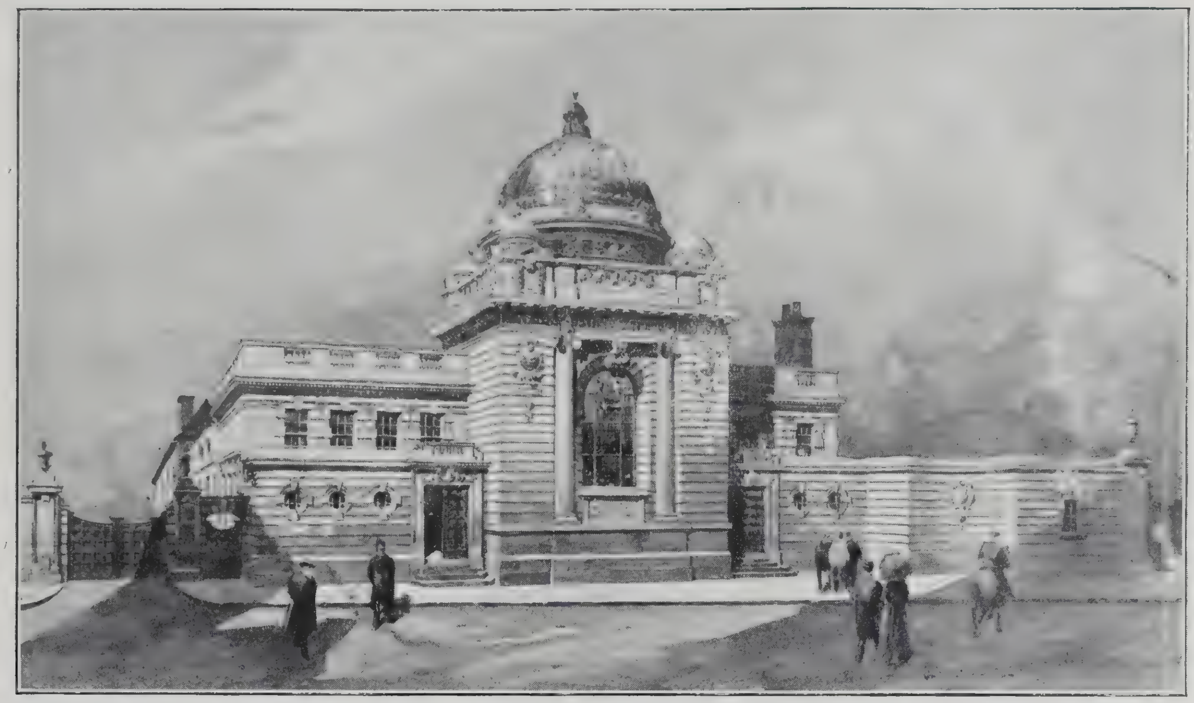


GROUND FLOOR PLAN

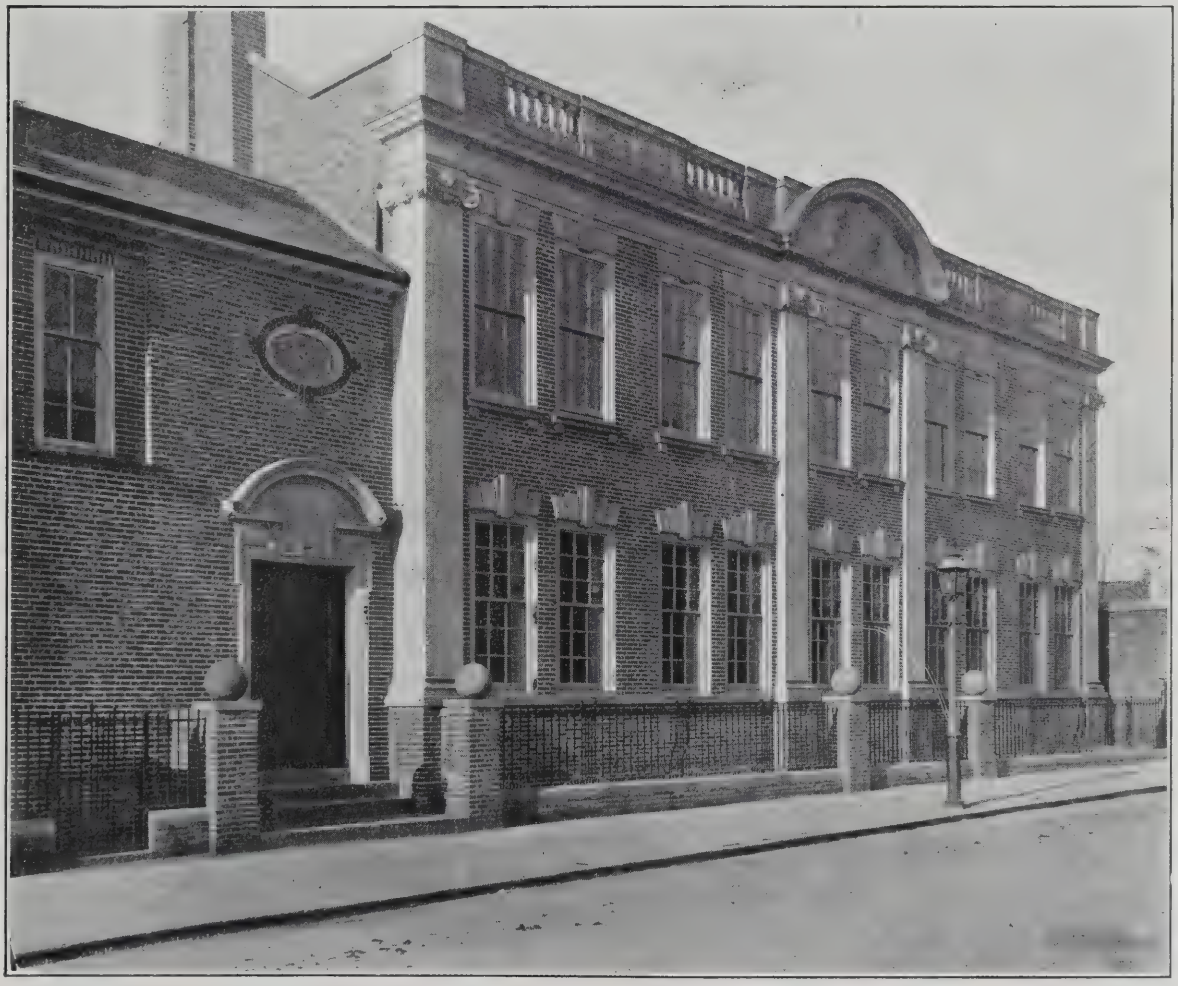
Cossins Peacock & Bewlay Architects · Birmingham ·

FEET

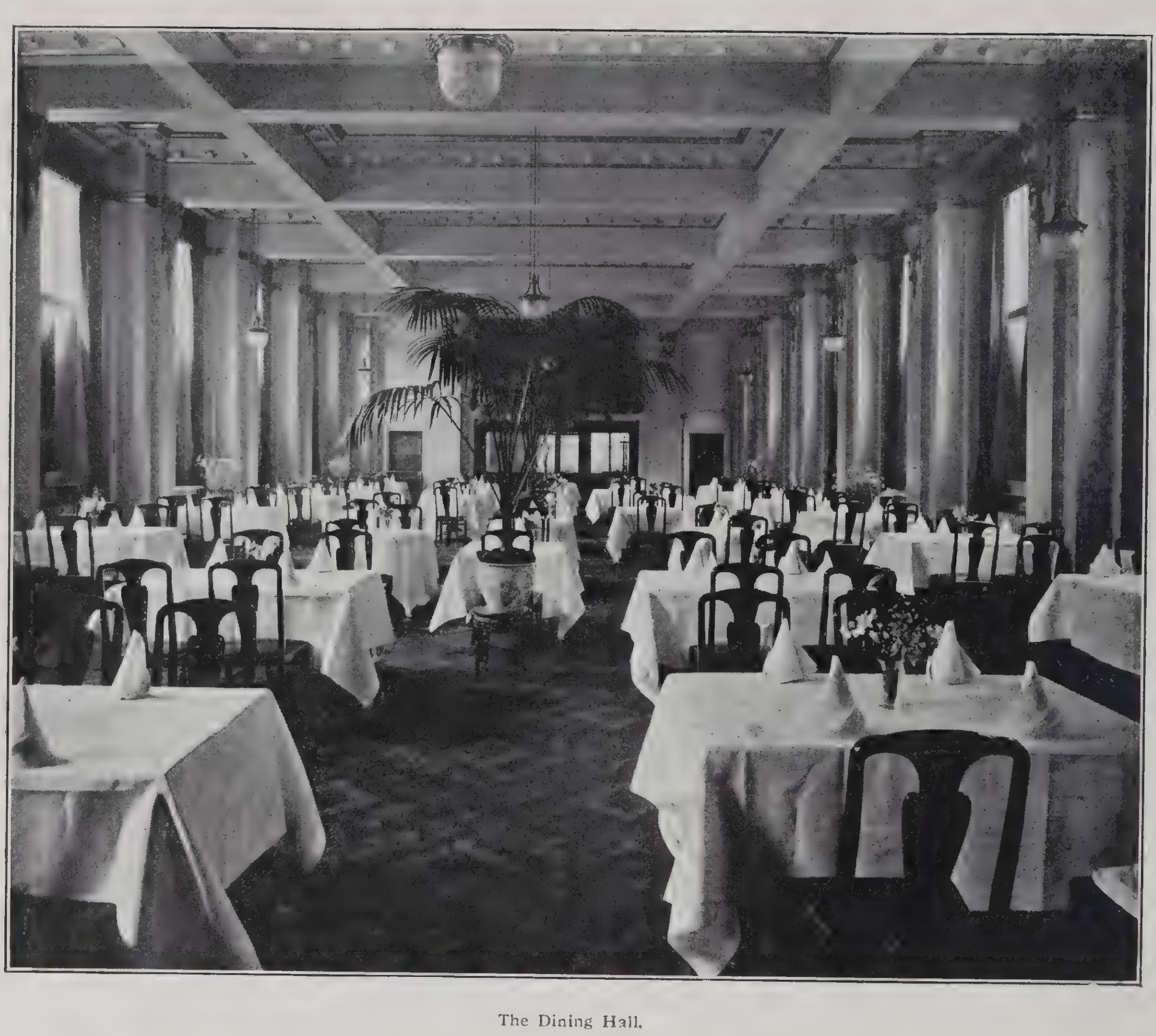
ST. PHILIP'S HALL, THE ORATORY, BIRMINGHAM.



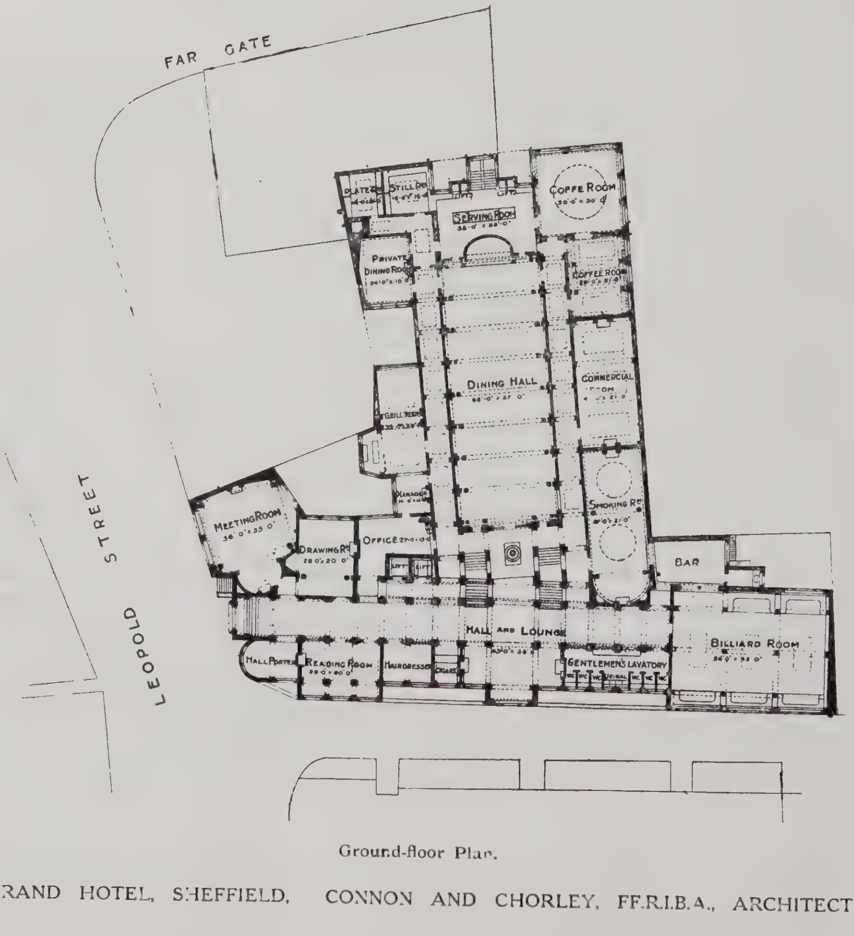
NEW POLICE COURTS, BURTON-ON-TRENT. HENRY BECK, ARCHITECT.



ST. PHILIP'S HALL, THE ORATORY, BIRMINGHAM. COSSINS, PEACOCK AND BEWLAY, ARCHITECTS.



The Dining Hall.



Ground-floor Plan.

GRAND HOTEL, SHEFFIELD. CONNON AND CHORLEY, FF.R.I.B.A., ARCHITECTS.

in lead. The two courts and the magistrates' room are all panelled in wainscot oak, and all the court fittings are of the same material.

The general contractors for the work are Messrs. R. Kershaw and Sons, of Burton-on-Trent. The oak panellings and court fittings and the stone carving have been carried out by Messrs. R. Bridgeman and Son, of Lichfield. Messrs. Martyn and Co., Ltd., of Cheltenham, are responsible for the modelled plasterwork, and Messrs. Henry Hope and Sons, of Birmingham, for the iron casements and the heating. The electric lighting is by Mr. John Richards, of Burton-on-Trent. Glazed bricks for cells and corridors were supplied by Messrs. James Woodward, Ltd., of Swadlincote.

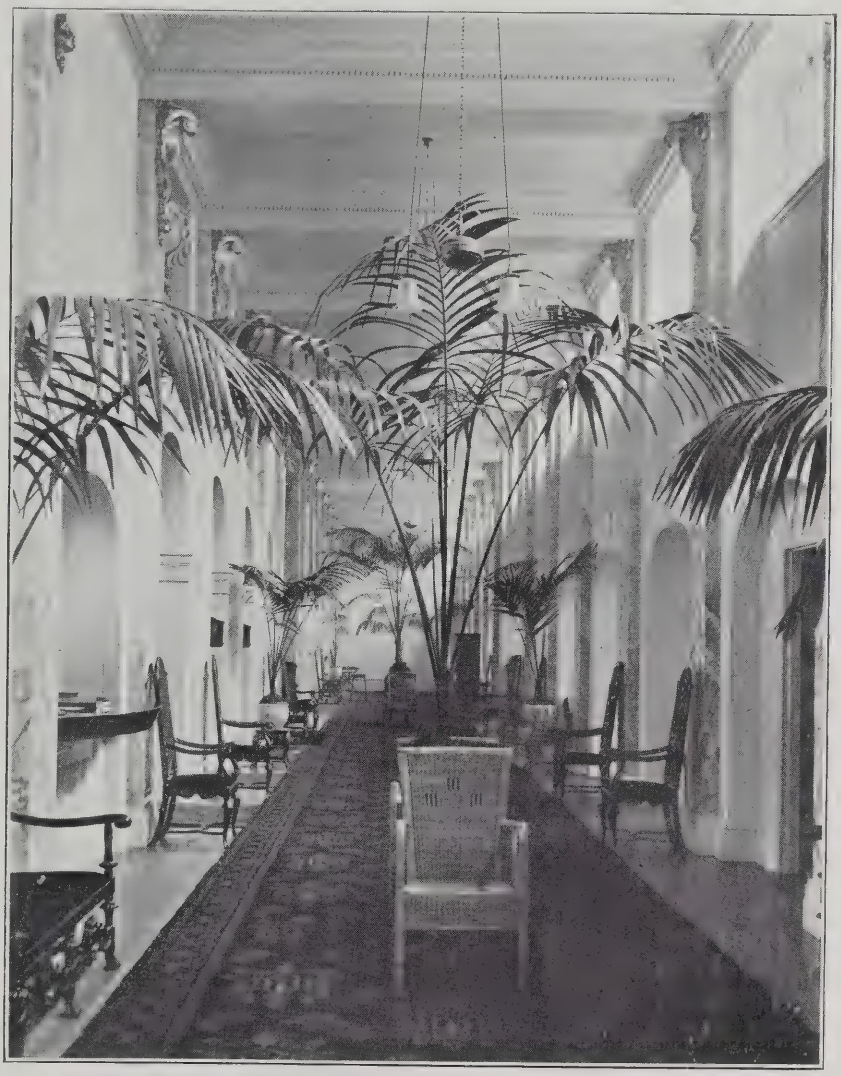
The architect is Mr. Henry Beck, of Burton-on-Trent, whose design was selected in a limited competition. The accompanying illustration is a reproduction of the architect's drawing, hung at this year's Academy.

GRAND HOTEL, SHEFFIELD

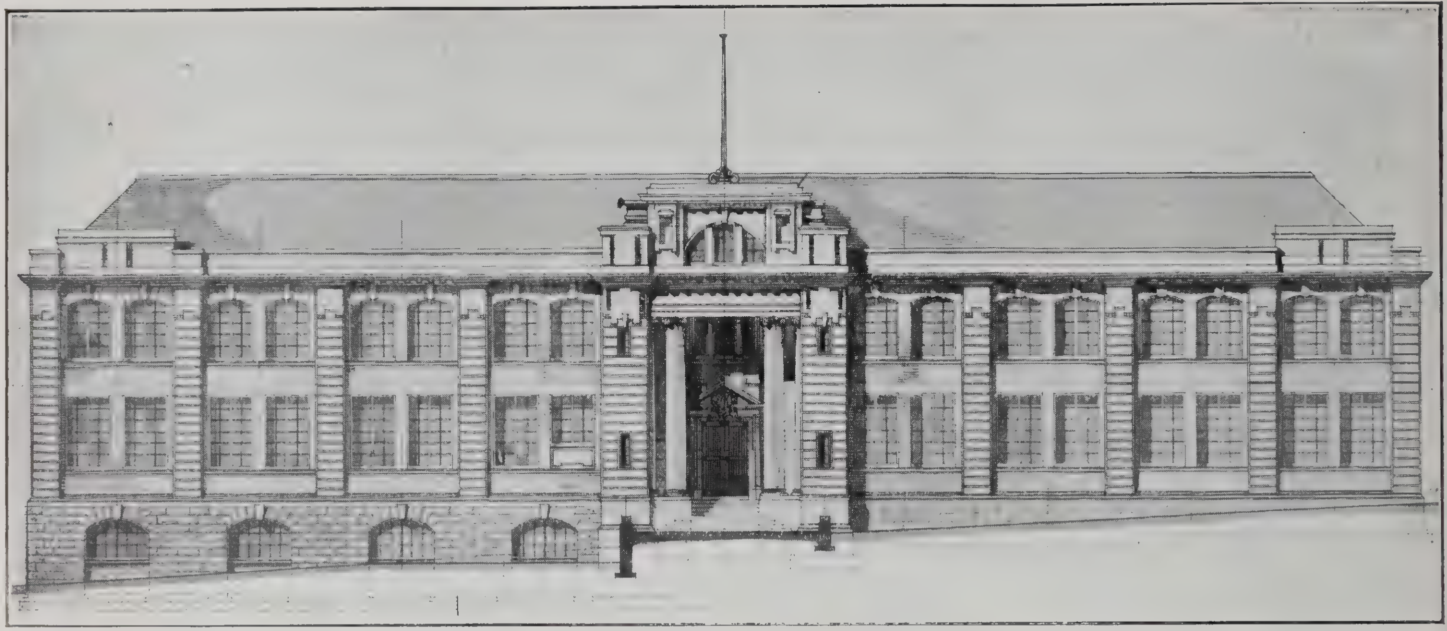
This building was opened early in 1910, having been erected from the designs of Messrs. Connon and Chorley, of Leeds. It is an hotel of about 180 bedrooms, with a proportionally much larger ground-floor area, the hotel being fitted for an extensive outside restaurant business. The floor area of the ground level is about 3,000 yds. super. The frontage to the main street is restricted, the chief area of the building being away from the principal thoroughfare.

The ground floor plan gives a good idea of the excellent arrangement of the various rooms, offices, etc., which are rendered indispensable by reason of modern methods of hotel life. Around the dining hall, which, it will be seen, occupies almost the whole of the rear portion of the building, are conveniently arranged two coffee rooms, a commercial room, a smoking room, and a serving room (giving immediate access to the dining hall), a private dining room, and a grill room. The combined hall and lounge, which run parallel with the street frontage, have at one end the main entrance from the street, and at the other a billiard room of large dimensions. Two lift wells are ingeniously arranged; and a large meeting room is lighted by three windows—two facing the street and one facing a light well.

The contractors for the building were Messrs. J. Fidler, of Sheffield. The principal sub-contractors were as follows: Plumbing, Messrs. Mellowes and Co., of Sheffield and London; plastering, Messrs. Hodkins and Jones, of Sheffield; painting, Messrs. Eyre and Sons, of Chesterfield; electric lighting, Messrs. S. Dixon and Son, of Leeds; leaded lights, Mr. W. Pape, of Leeds; marble work, The Leeds Marble Co.; lifts, Messrs. Waygood and Co., of London; furnishing and a large portion of the decorations, by Messrs. Maple and Co., of London.



GRAND HOTEL, SHEFFIELD: ENTRANCE LOUNGE.
CONNON AND CHORLEY, FF.R.I.B.A., ARCHITECTS.



NEW TEXTILE SCHOOL, CARLTON STREET, BRADFORD. REGINALD G. KIRKBY, A.R.I.B.A., ARCHITECT.

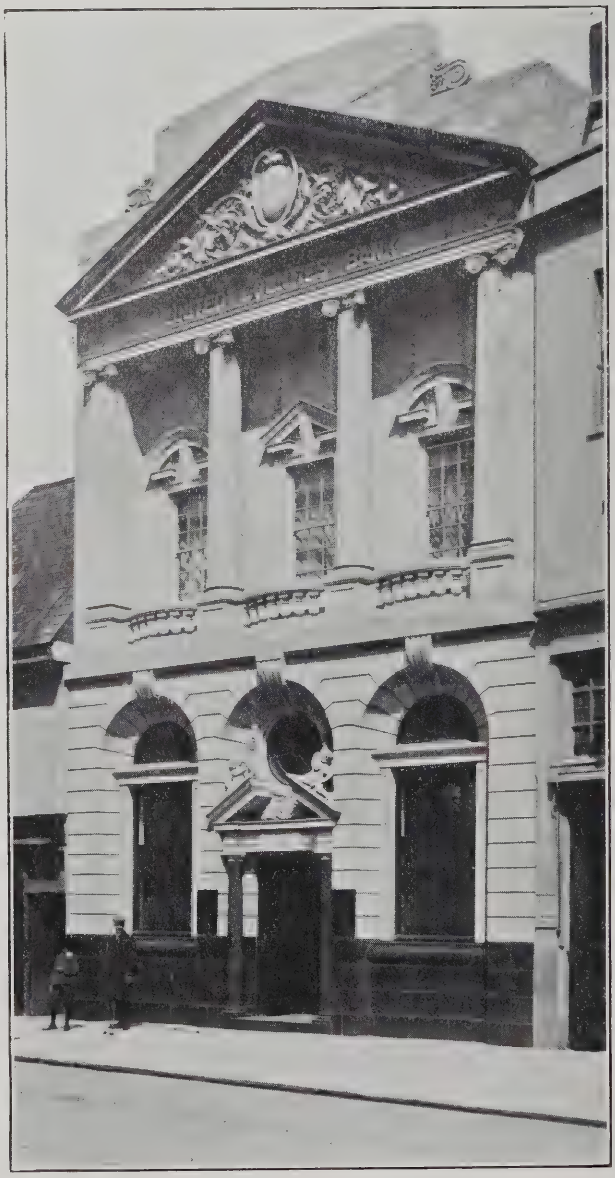
NEW TEXTILE SCHOOL, BRADFORD.

This building, now in course of erection for the housing of the Textile Industries Department of the Technical College, is from the design of Mr. Reginald G. Kirkby, F.S.I., A.R.I.B.A. The frontage to Carlton Street is devoted to classrooms, together with a large entrance hall and staircase. The building is faced with local stone with ashlar dressings. The floors and staircases throughout are of reinforced concrete. To the rear of this building, which is only a portion of a large scheme, are combing, spinning, warping, and weaving sheds, which occupy an area of 16,000 ft. super. The reinforced concrete work was executed by the United Kingdom Fireproofing Co., and the patent roof glazing by the British Luxfer Prism Syndicate, Ltd.; sanitary fittings by Messrs. Doulton and Co.

UNITED COUNTIES BANK, CHELTENHAM.

These premises have recently been erected in High Street, Cheltenham, at a total cost of about £3,000. The whole of the ground floor is occupied by the banking hall, manager's room, strong-room, lavatories, etc., and the upper floor provides accommodation for a resident caretaker.

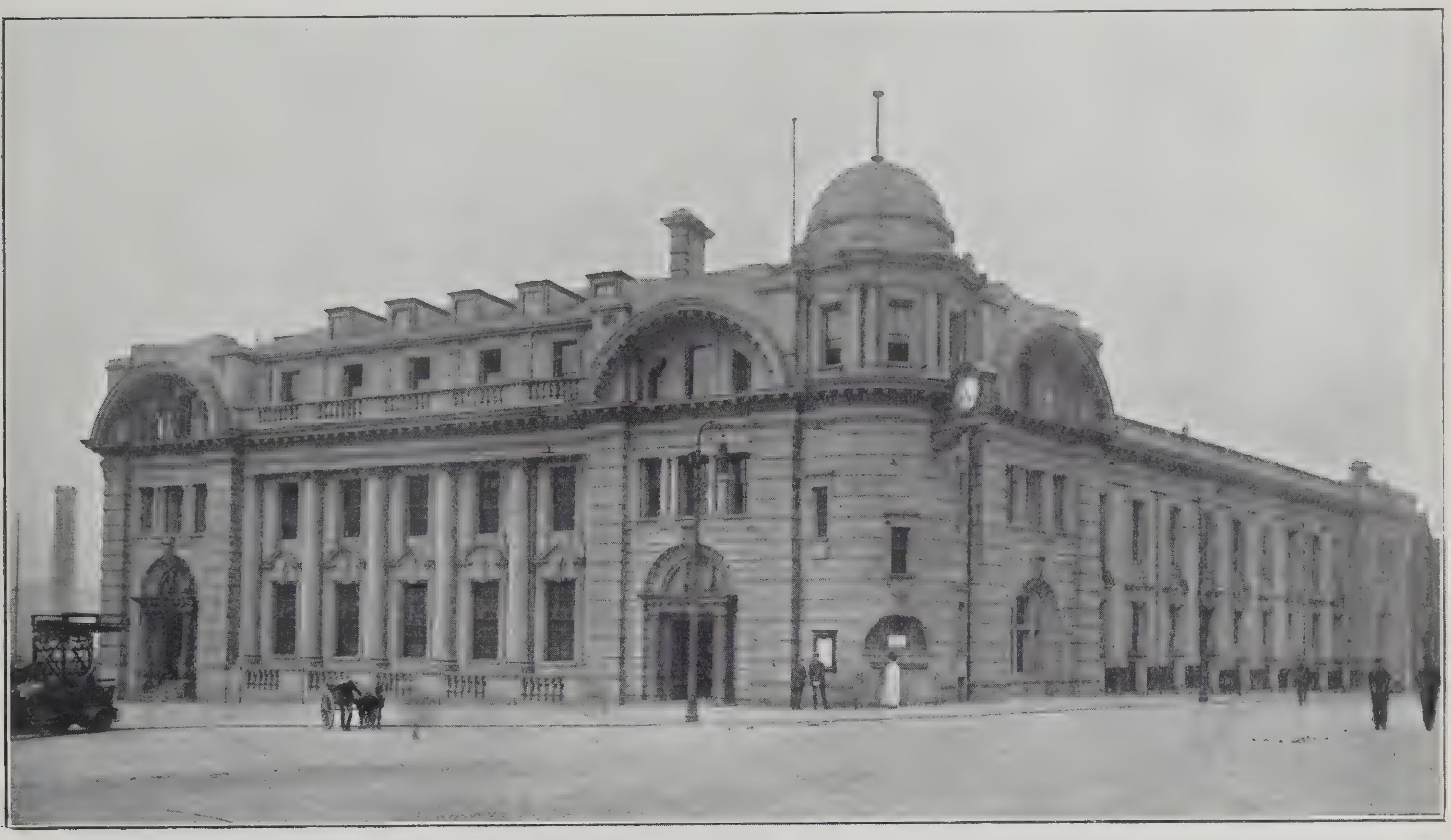
The architects were Messrs. Cossins, Peacock, and Bewlay, of Birmingham, and the general contractors were Messrs. J. Dallow and Sons, of Blackheath, near Birmingham.

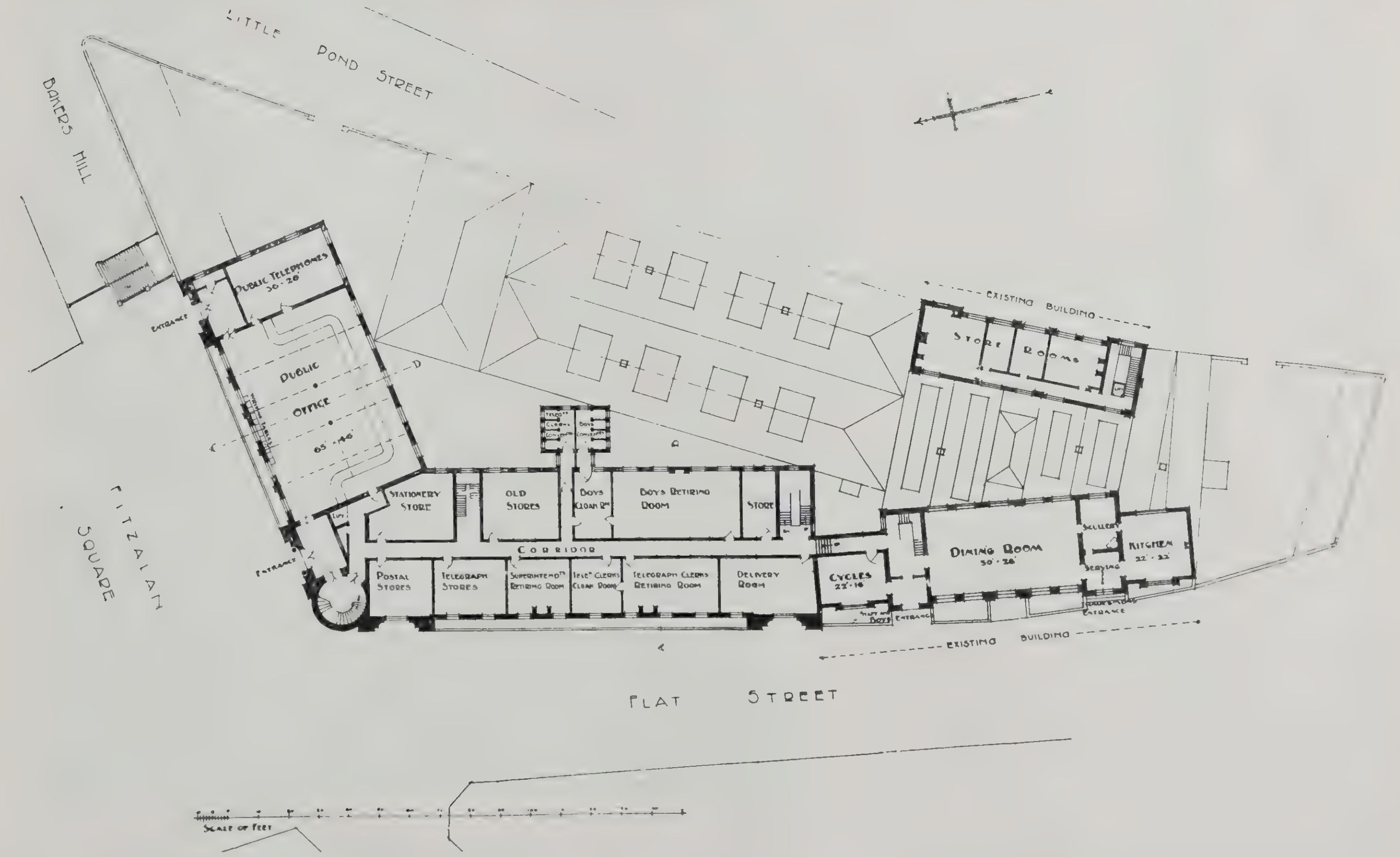


[UNITED COUNTIES BANK, CHELTENHAM. COSSINS, PEACOCK AND BEWLAY, ARCHITECTS.

NEW GENERAL POST-OFFICE, SHEFFIELD.

This building was opened in July last. The principal front is to Fitzalan Square and the centre portion of this is divided into five bays by Ionic columns, carried to the full height of the two lower storeys. Above the cornice is an open balustrade with attic storey. The main cornice is continued round the building and it is intended to erect an additional storey to the Flat Street front at some future time. With the exception of the doorways, which are of Peterhead granite, with Doric columns and entablature, the façades are of Darley Dale stone from the Stancliffe quarries.





NEW GENERAL POST-OFFICE, SHEFFIELD. WALTER POTT, A.R.I.B.A. (H.M. OFFICE OF WORKS), ARCHITECT.

The public office, 64ft. by 45ft., is lighted from both sides. It is paved with terrazzo and the ceiling is panelled in large square bays. The walls are panelled to a height of 8ft. with light and dark Derbyshire marble, supplied by the Hopton-Wood Stone Firms, Ltd. The joinery is of teak, except the counter top, which is of Cuba mahogany. A public telephone room with silence cabinets immediately adjoins the public office, and is treated similarly.

The whole of the Flat Street wing on the ground floor is utilised for clerks, boy messengers, and store rooms.

The lower ground floor under the public office is occupied by the battery room, retiring rooms for postmen and sorting clerks, and store rooms. The sorting office is 234ft. long and 60ft. wide in one part, and 95ft. in another. It is well lighted by windows on both sides, and by top lights.

The first floor to Fitzalan Square contains the postmaster's room and offices for writing clerks, accountants and engineers. The telegraph instrument room occupies the whole of the Flat Street wing, and measures 148ft. by 45ft. The walls, similar to the sorting office, are of ivory white glazed bricks with green dado. The telephone room, 64ft. by 45ft., is on the second floor.

The architect of the building was Mr. Walter Pott, A.R.I.B.A., of H.M. Office of Works. The general contractors were Messrs. Waring and White (1906) Ltd., the clerk of works being Mr. W. T. Bowman. The structural work cost £49,000, the fittings £3,300, and the heating £2,300. The sub-contractors for steelwork were the Earl of Dudley's Round Oak Works, Staffordshire; for joinery, Messrs. Waring and Gillow, Lancaster; for plastering, Messrs. Henry Johnson and Sons, Liverpool; and for slating, Messrs. A. and W. Allard, Clapham, London, S.W. The heating work was carried out by the Brightside Engineering Co., Sheffield; the terrazzo floors by Messrs. Hodkin and Jones, Sheffield; and the wood block floors by Messrs. Burgess, Liverpool. The following contractors were also employed on the fittings: Messrs. H. Boot and Son, Sheffield; Messrs. J. Walsh, Ltd., Sheffield; Messrs. Ash, Son, and Biggin, Sheffield; Messrs. Fielding and Bottomley, Halifax; Messrs. C. Turnbull and Son, West Hartlepool; Messrs. W. Nicholson and Sons, Ltd., Leeds; and Messrs. The Educational Supply Association, London.

ALLIANCE ASSURANCE BUILDING, NEWCASTLE-ON-TYNE.

The new building which has been erected for the Alliance Assurance Co. in Mosley Street, Newcastle-on-Tyne, was completed in the remarkably short space of eleven months, from plans prepared by Messrs. Newcombe and Newcombe, F. and A.R.I.B.A., of Newcastle.

The design of the exterior is Georgian in character, and effect has been obtained by massive proportions, rather than by an elaboration of detail.

The offices of the company are entered through a portico having massive granite columns on either side, and comprise, besides the main office, secretary's room, waiting room, etc. The clerks' desks are arranged so that all face the counter. In the basement, which is well lighted by large windows, are further offices and strong-rooms.

The main office is panelled to a height of 14ft. in oak, with fluted pilasters, the wood being left from the plane in its natural colour. The wall space above the panelling to a height of 7ft. is lined with Istrian marble, with green Cipollino bands, and the main ceilings are finished in modelled plaster, by Mr. John P. White, of Bedford.

The private rooms are panelled in oak to a height of 7ft., above which is ornamental plasterwork. The fireplaces have carved oak mantels.

The electric fittings, specially designed, are of bronze and cut glass. They were executed by Messrs. Spital and Clark, of London. The space in front of the counter is laid with rubber tiling, the remainder of the flooring being of wood blocks.

The whole of the finishings, fittings, and furniture have been designed by the architects.

The remaining portions of the buildings are arranged to be let off as offices.

The general contractor for the work was Mr. Thomas Lumsden, of Jarrow. Messrs. Emley and Sons, Ltd., of Newcastle, carried out the wall tiling and terrazzo flooring, and supplied the principal fireplaces.

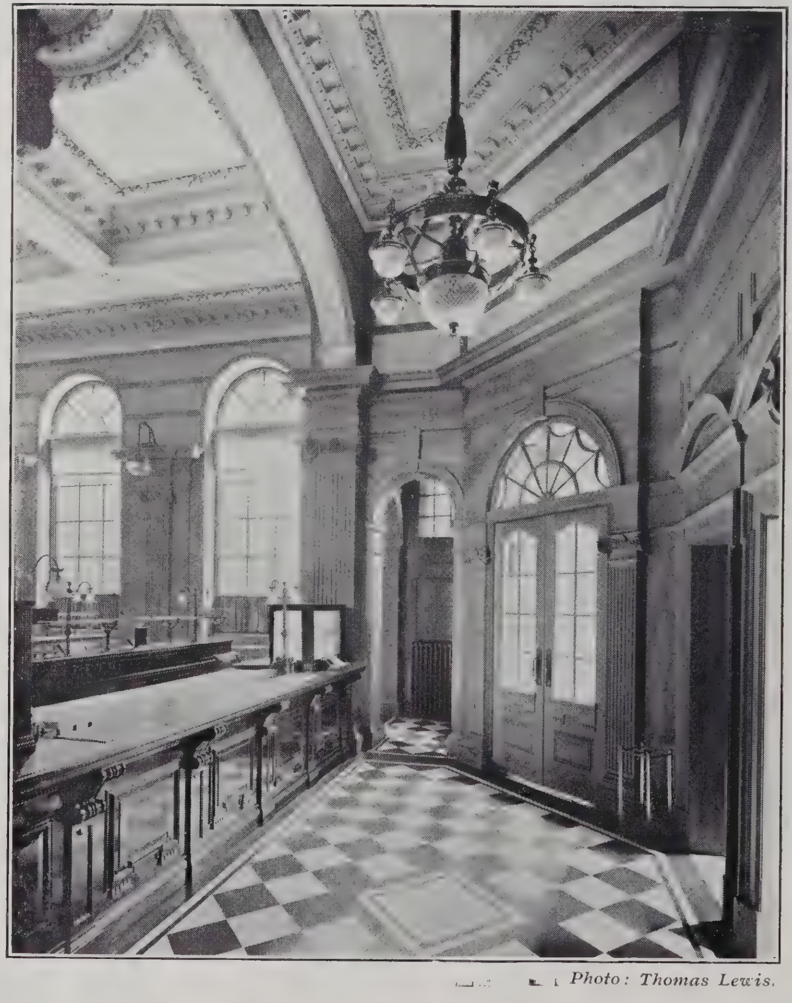
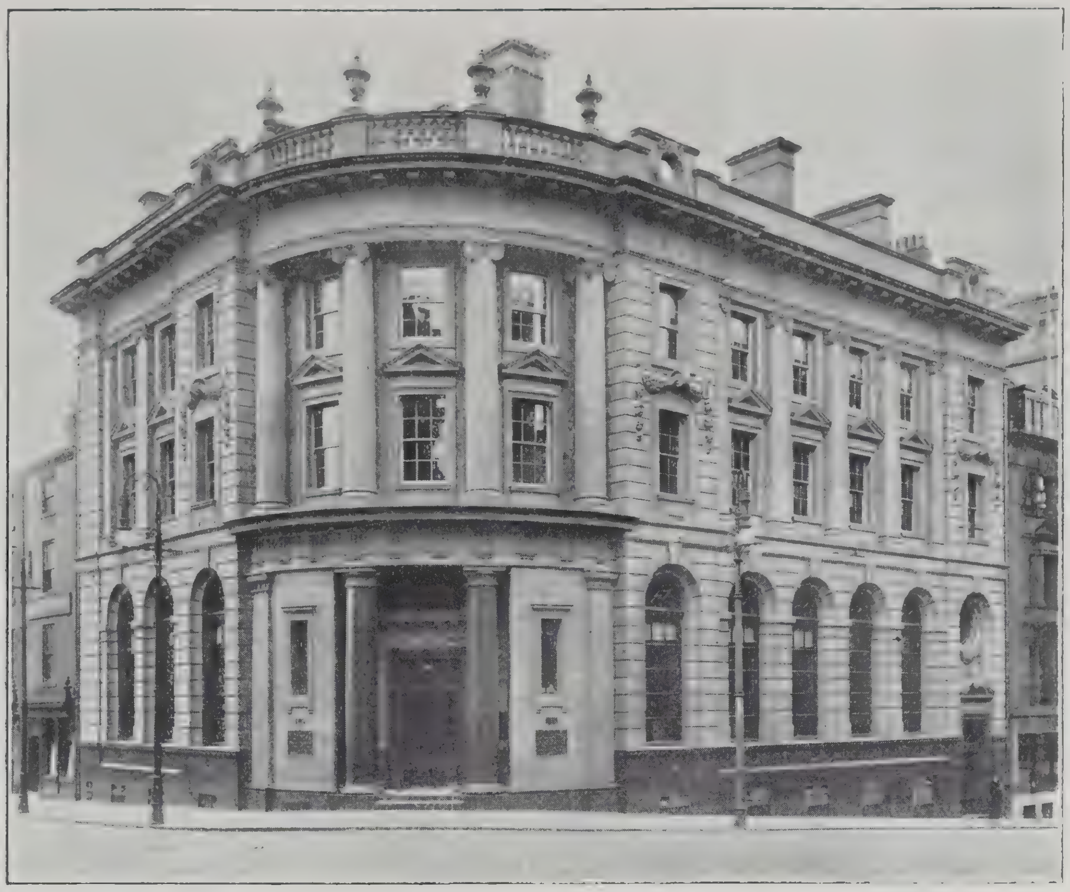
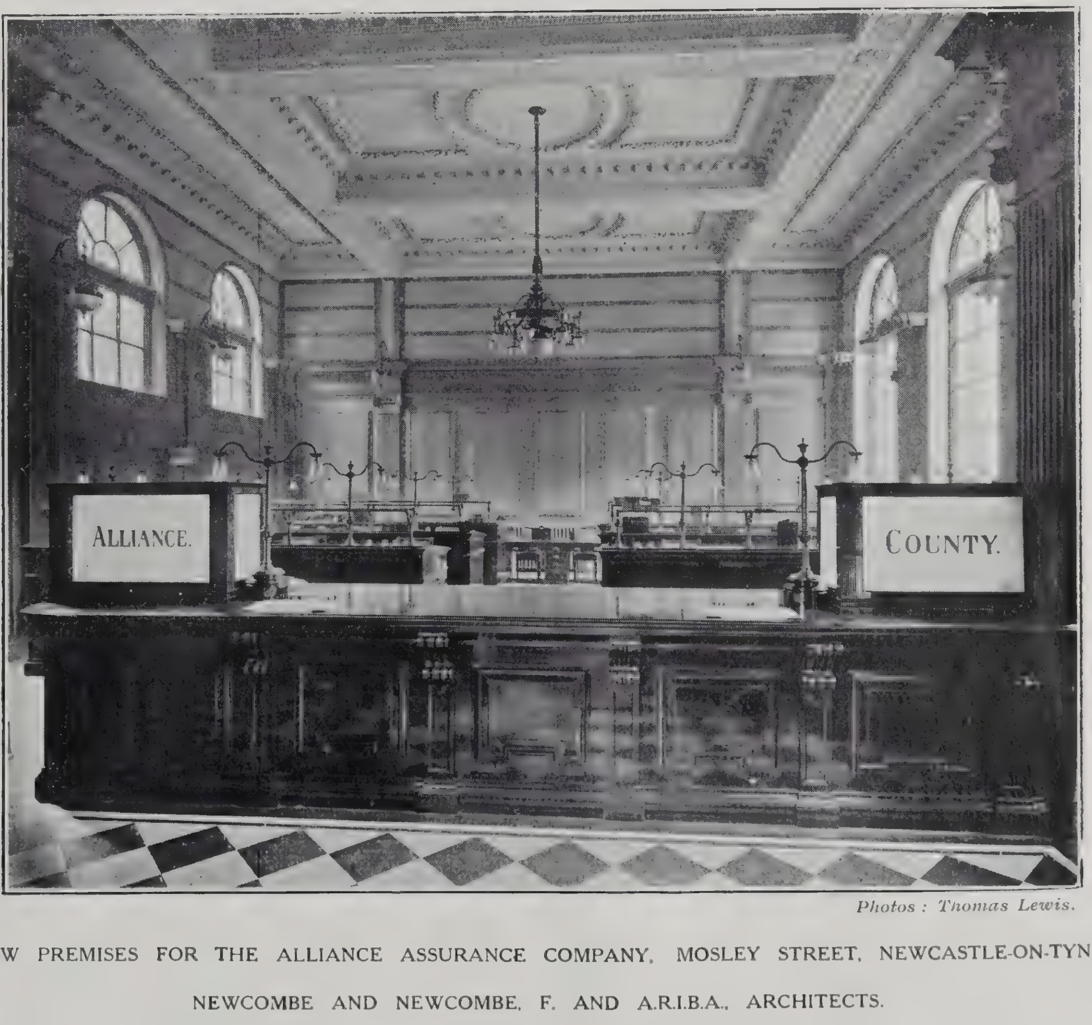


Photo: Thomas Lewis.

ALLIANCE ASSURANCE BUILDING, NEWCASTLE-ON-TYNE. NEWCOMBE AND NEWCOMBE, F. AND A.R.I.B.A., ARCHITECTS.





Photos: Thomas Lewis.

NEW PREMISES FOR THE ALLIANCE ASSURANCE COMPANY, MOSLEY STREET, NEWCASTLE-ON-TYNE.

NEWCOMBE AND NEWCOMBE, F. AND A.R.I.B.A., ARCHITECTS.

CHURCH OF ST. ALOYSIUS, GLASGOW.

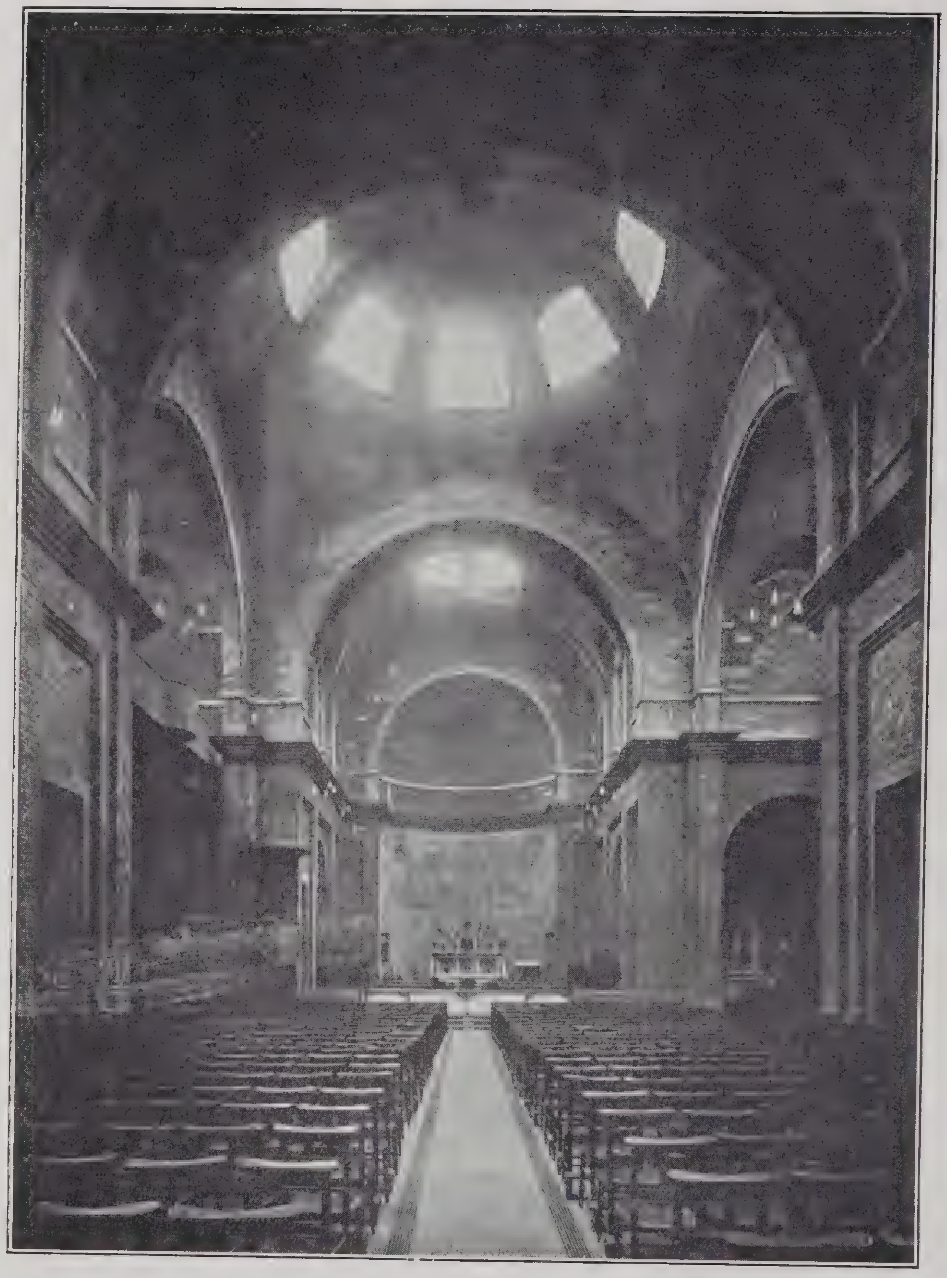
The special feature of this church is its concrete roof, a description of which appeared in the "Architects' and Builders' Journal" for March 30th last.

The total dimensions are 150ft. long by 100ft. across the transepts.

In the style of architecture adopted for the building the difficulty has been the lighting, the Renaissance of sunny Italy allowing only very small openings. The difficulty has been solved by the introduction of a series of domes, eight in number, each with good glass area, constructed in reinforced concrete, giving the interior a successful light with due allowance for the usual grey atmosphere of Glasgow.

The church, which is cruciform, consists of a nave 44ft. wide, aisles, raised three steps for processional purposes, and four chapels, with sacristies, etc. The architect, Mr. Charles J. Menart, I.A., of Glasgow, has concentrated all his attention on the interior, the exterior, exclusive of tower, being the natural outcome of the inside lines. When complete the vaulting will be decorated with modelled ornament and mosaic panels, and there will be fluted pilasters in Skyros marble, the flutes being inlaid with Verde Antico marble. The high altar, it is suggested, shall be an adaptation of the shrine of St. Aloysius, St. Ignatius, Rome.

The following is a list of the contractors for the building: Mason work, Messrs. G. Barlas and Co., Glasgow; joiner work, Messrs. Wallace and Bryce, Glasgow; reinforced concrete, Messrs. The Expanded Metal Co., London; plumber work, Messrs. C. Hegney and Son, Glasgow; slater work, Mr. A. Bryan, Glasgow; plasterwork, Messrs. Stuart's Granolithic Co., Glasgow; glazier work, Mr. J. P. McPhee, Glasgow; heating engineers, Messrs. Hunter, McWilliam, and Blair, Glasgow; electrical engineers, Messrs. Grindley, Ross, and Co., Glasgow; sculptor, Mr. W. Vickers, Glasgow; asphalt work, Messrs. La Brea Asphalte Co., Birmingham; seats, Messrs. The Bennet Furnishing Co., Glasgow; ironmongery, Messrs. C. Smith and Son, Birmingham; railings and gates, Mr. Chas. Henshaw, Edinburgh; steel window frames, casements and domes, Messrs. George Wragge, Ltd., of Manchester.

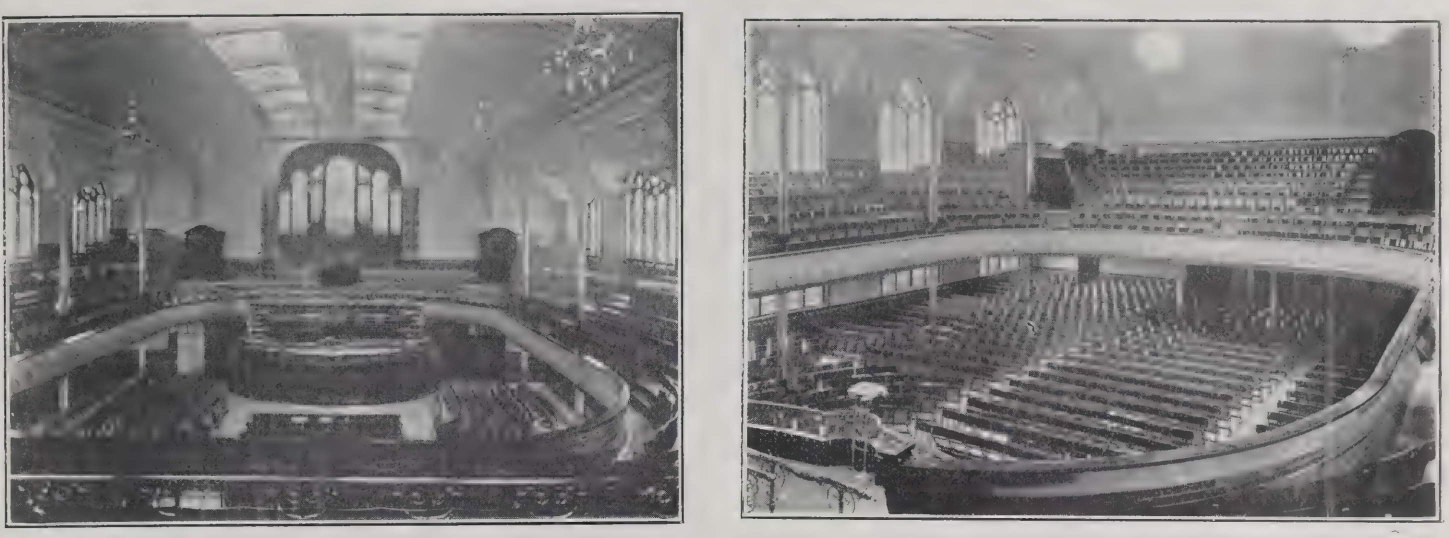


CHURCH OF ST. ALOYSIUS, GLASGOW. CHARLES J. MENART, ARCHITECT.

THE ALBERT HALL AND ASTON INSTITUTE, MANCHESTER.

This new building, in Peter Street, has been erected for the Manchester and Salford Wesleyan Mission. It was opened on September 15th.

The front of the building is of Burmantofts vitrified terra-cotta, on a polished red granite base. The lower floor is used for social work, and comprises two large club rooms for boys and for girls, with kitchens, scullery, and ample lavatory accommodation. On the next floor (at street level) are a lecture hall 51ft. 6in. by 44ft., oak panelled, and a large room used as a girls' recreation room or lounge, with a library adjoining, four large classrooms, a room for the staff and two ante-rooms. All these rooms have oak panelled dados and wood-block or Eubœolith floors. The corridors are of Roman mosaic, and the walls have a tiled dado. The two main entrances and crush spaces are lined with panelled and enriched faïence work up to the ceiling. The floors are of mosaic and marble, and the ceilings are in enriched fibrous plaster.


THE ALBERT HALL, PETER STREET, MANCHESTER. W. J. MORLEY F.R.I.B.A., AND SONS, ARCHITECTS.

On the first floor are three classrooms and the minister's vestry; also three similar classrooms on the second floor, and one on the third.

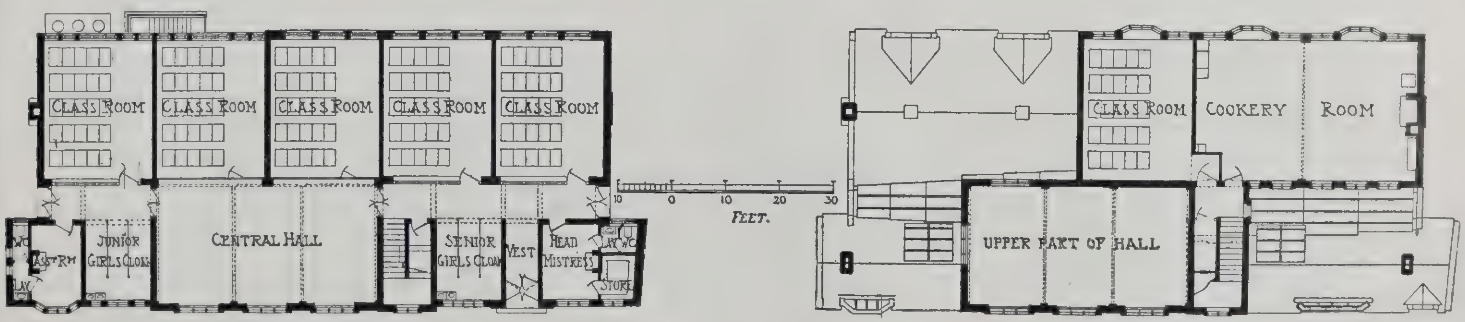
The main hall, 86ft. by 78ft. 6in., is on the first floor, and has seating accommodation for about 2,000 persons, including a curved gallery running round three sides. A tiled dado runs round the walls, and the windows are glazed with ornamental leaded lights; there is also a continuous row of similar lights in the ceiling, which is of enriched fibrous plaster.

The organ case at one end of the hall is of polished and carved mahogany, with silvered pipes, and is flanked by pilasters of Scagliola marble. The gallery front is of ornamental tiles.

The architects were Messrs. W. J. Morley, F.R.I.B.A., and Sons, of Bradford, whose design was selected in competition.

The general contractors were Messrs. Gerrard and Sons, of Swinton.

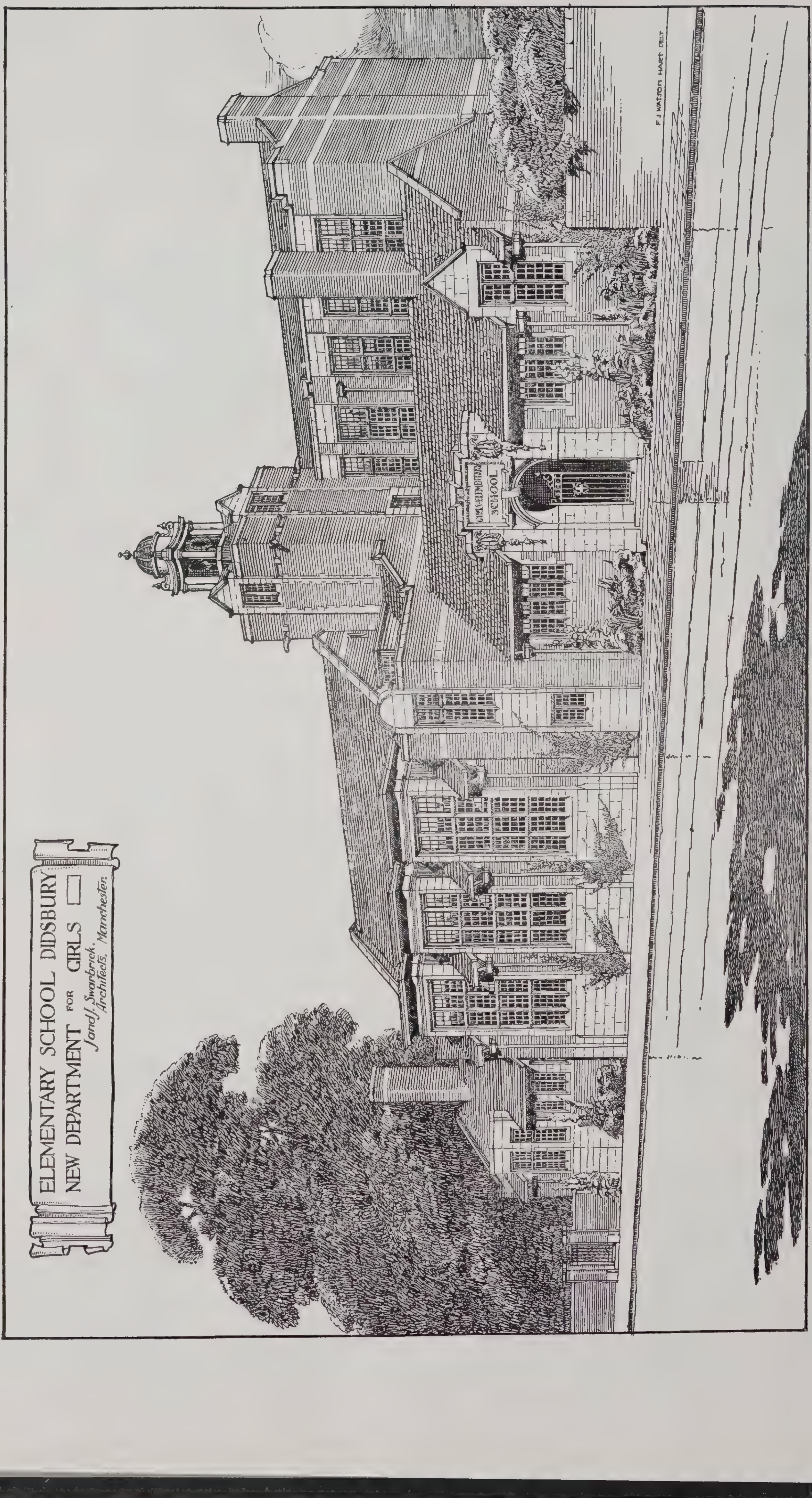
The tiling and faïence work was supplied by Mr. A. Whitehead, of Leeds, Mr. J. C. Edwards, of Ruabon, Messrs. Wade and Co., of Burslem, and Messrs. C. W. Williams and Co., of Manchester; and the terra-cotta by the Leeds Fireclay Co.; brass work and wrought iron work by Messrs. Jones and Willis, of London, and Messrs. Cunliffe and Dean, of Manchester; electric fittings are by Mr. H. Bisseker, of Birmingham; electric light installation by Messrs. Drake and Gorham, of Manchester; granite work by Messrs. Kirkpatrick Brothers, of Manchester; locks, door furniture and safes, Messrs. Chubb and Sons; mosaic floors and steps by Messrs. Diespeker and Co., of London; concrete steps by Messrs. Stuart's Granolithic Co., of London; lighting of the lower floor by the British Luxfer Prism Syndicate, Ltd., of London; steelwork by Messrs. E. Wood and Co., of Manchester; copper dome on tower is by Messrs. Ewart and Sons, Ltd., of London; steel casement windows by Messrs. Henry Hope and Sons, Ltd., of Birmingham; movable partitions in the club rooms by The North of England School Furnishing Co., of Darlington; ventilation (on plenum system), by Messrs. Stott and Co., of Oldham. In the entrance is a medallion with portrait of Mr. Edward Aston, and bearing a suitable inscription to his memory. The medallion is the work of Mr. Millard, art master at the Manchester School of Art. The total cost of the building will be about £32,000. Mr. Walter Scott has acted as clerk of works.



Ground-Floor Plan.

First-Floor Plan.

ELEMENTARY SCHOOL FOR GIRLS, DIDSBURY, MANCHESTER. J. AND J. SWARBRICK, F. AND A.R.I.B.A., ARCHITECTS.



ELEMENTARY SCHOOL DIDSBURY
NEW DEPARTMENT FOR GIRLS
J and J. Swarbrick, Architects, Manchester.

SCHOOL
F J WATSON HART DELT

ELEMENTARY SCHOOL FOR GIRLS, DIDSBURY.

This building (the accompanying illustration of which is reproduced from the drawing exhibited at the last Royal Academy exhibition) occupies a restricted site, which necessitated its being built quite close to the roadway. In order that the classrooms might be kept as quiet as possible, they were placed overlooking the girls' playground, on the opposite side of the site. Adjacent to the roadway are the central hall, cloakrooms, and teachers' rooms, etc. A large cookery room and an additional classroom have been arranged upon the upper floor. Light coloured red bricks, with stone dressings, form the external facing, with Broseley tiles on the roof. A lining of buff bricks, above a glazed brick dado, has been adopted in the main corridors, while a dado of light green Dutch tiles has been continued around the classrooms, cookery room, and the central hall.

The architects for this new department for girls, and for other alterations at the school, were Messrs. J. and J. Swarbrick, F. and A.R.I.B.A., of Manchester. The general contractors were Messrs. Peace and Norquoy, Ltd., of Manchester. The leaded lights and metal casements were executed by Messrs. Williams Brothers and Co., of Chester, and the heating and ventilating apparatus was installed by Messrs. Saunders and Taylor, of Manchester. The cookery room floor has a "Euboeolith" floor, laid by Mr. J. Percy Day, of London and Manchester. Mr. James Gibbons supplied locks, door furniture and cloak-room fittings.

NEW BUILDINGS AT BRISTOL UNIVERSITY.

These new buildings, which comprise chemical and physiological laboratories, were formally opened on November 15th. The ground floor level coincides with the ground floor of the northernmost wing of the old University College buildings, against the Botanical Garden, and the rapid fall of the land from this point towards the south has admitted of the provision of a well-lighted basement.

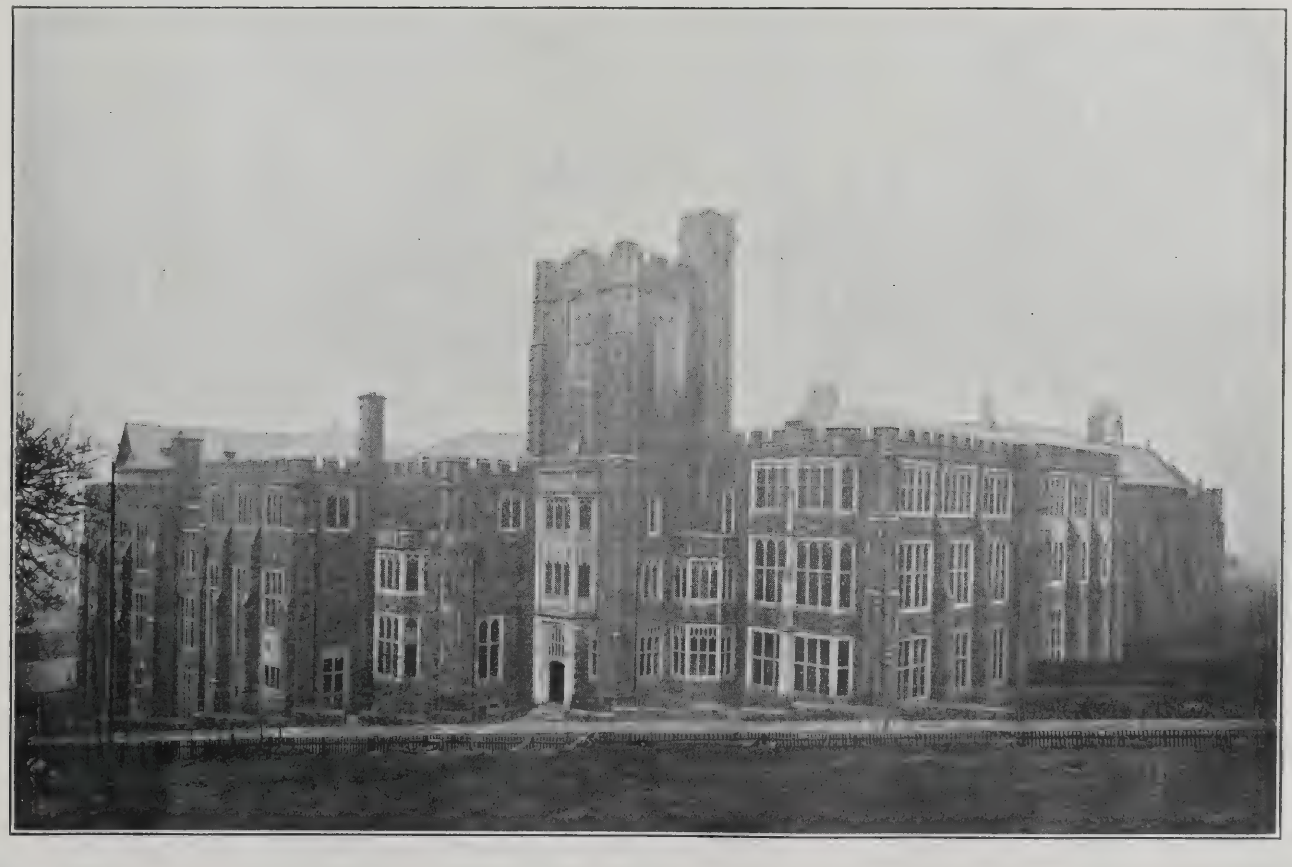
The main entrance to the new laboratories is from Woodland Road, in the base of the tower shown in the accompanying photograph. The physiological department is on the right hand and the chemical department on the left. The main staircase is at the back of the tower and serves both departments.

The external walls are built of red pennant stone, the bulk of which has been obtained from the Winterbourne district. The dressed stonework is of Box Ground stone. The floors are of steel and concrete, and are on the Dennett system. Reinforced concrete has been used in some instances.

The buildings are warmed by low-pressure hot water, with accelerated circulation, Haden's patent electrically driven "Turbo" accelerator having been adopted.

The works have been carried out in a remarkably short space of time by Messrs. W. Cowlin and Son, of Bristol. The contract for the foundations was signed on December 10th, 1909, and that for the superstructure on February 15th, 1910, and the buildings were in use by students within eight months.

The heating and ventilation apparatus was installed by Messrs. G. N. Haden and Sons, of Trowbridge; sanitary works by Mr. G. F. Tuckey; terrazzo floors by the Bristol Mosaic Co; asphalt roofs by Messrs. C. Bradshaw and Son; and the carving by Davey and Bushell—all of



NEW CHEMICAL AND PHYSIOLOGICAL LABORATORIES, BRISTOL UNIVERSITY. OATLEY AND LAWRENCE, ARCHITECTS.

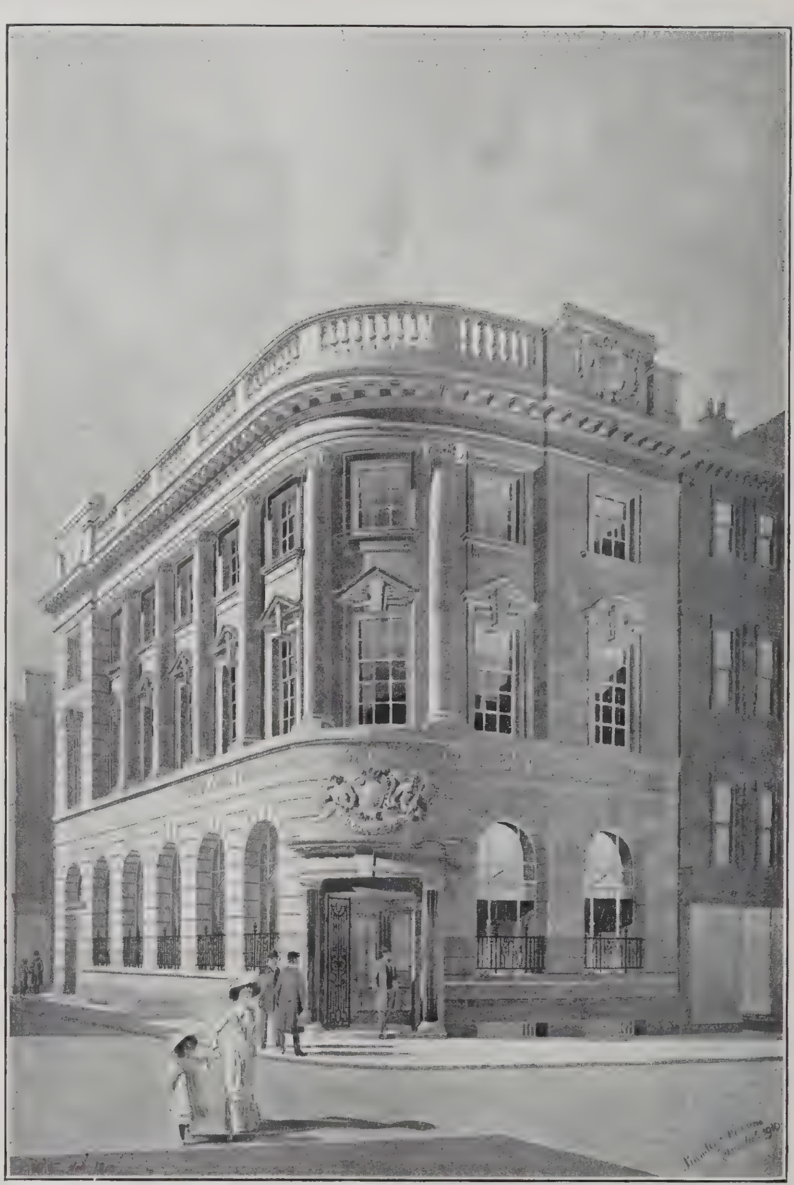
Bristol. The electric lighting has been carried out by Messrs. Reynolds and Bradwell, of Birmingham; and Messrs. Edwards and Armstrong, of Bristol, installed the experimental mains and wiring. All the electrical work has been done under the supervision of Mr. H. T. Sully, consulting engineer, of Bristol.

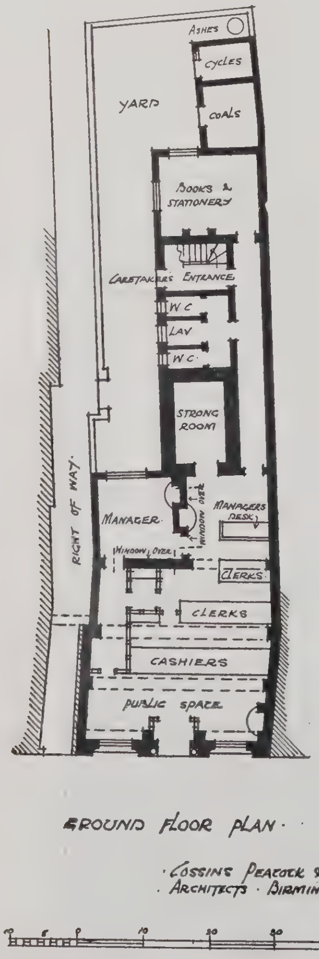
The contracts for the benches, fume cupboards, and fittings generally have been carried out by Messrs. Cowlin and Son in accordance with the requirements and under the direction of the Professors.

Messrs. Oatley and Lawrence, of Bristol, were the architects. Mr. W. H. Lewis acted as clerk of works.

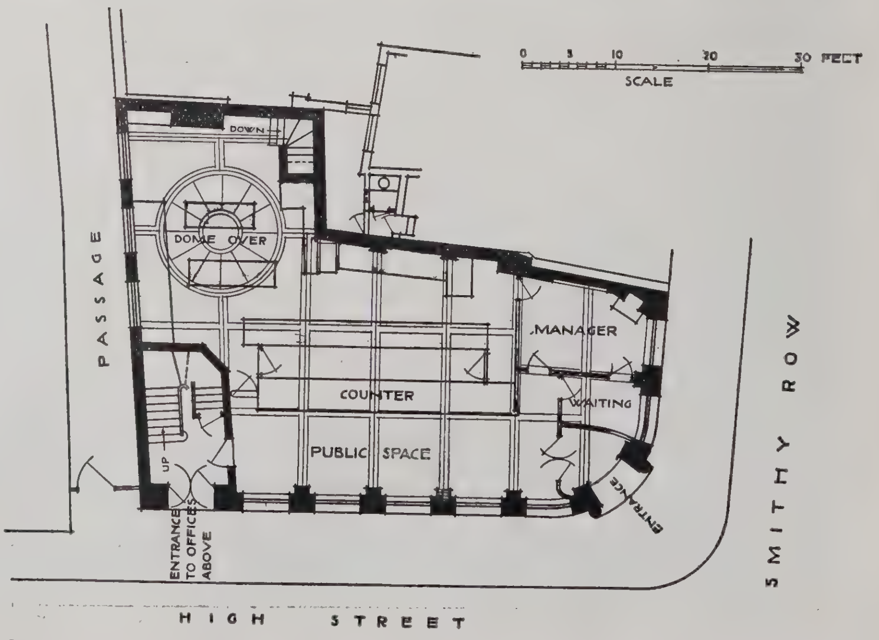
NATIONAL PROVINCIAL BANK, NOTTINGHAM.

This building is now in course of erection from the designs of Messrs. Bromley and Watkins, of Nottingham and London. It has a base of Aberdeen granite and will be faced with Portland stone. The internal walls will be lined with Arni Alto and Swedish green marble, the internal fittings being of dark mahogany. The upper portion of the building will be used as offices. Messrs. Dennett and Ingle are the general contractors, and Messrs. Woodsend and Son the contractors for foundations. The granite is supplied by Messrs. Kirkpatrick Bros., of Manchester. Pavings will be laid by Messrs. Stuart's Granolithic Co., Ltd., of London.





UNITED COUNTIES BANK, CHELTENHAM.



NATIONAL PROVINCIAL BANK, NOTTINGHAM. BROMLEY AND WATKINS, ARCHITECTS

NORWICH UNION BUILDING, PICCADILLY, LONDON.

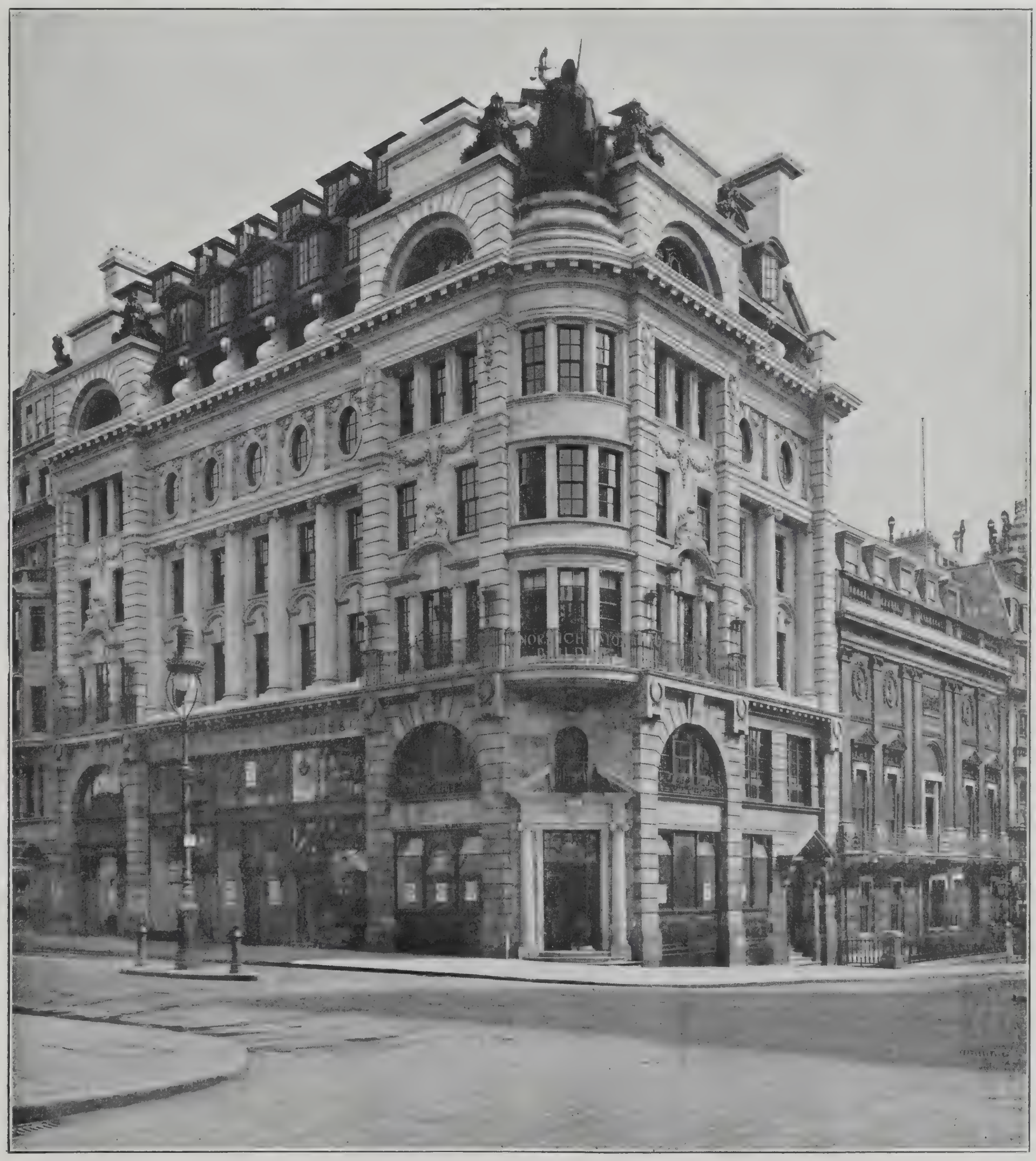
This building is situated at the eastern corner of St. James's Street and Piccadilly, and has been erected for the Norwich Union Life Assurance Society from designs by Messrs. Ernest Runtz and Ford, FF.R.I.B.A., architects, of London.

The western section of the ground floor and the return frontage to St. James's Street, are utilised by the company, and the Piccadilly frontage is divided into four shops. On the floors above are suites of offices.

The lower façades are executed in serpentine jasper, obtained from the quarries of the Jasper Company, a few miles from Pwllheli, North Wales. The upper portion has been carried out in white Pentelikon marble, obtained from the ancient quarries of Marmor, Ltd., at Athens; from which quarries the marble for the erection of the Parthenon was obtained 437 B.C.

Over the angle of the building is a group of bronze statuary designed by Mr. Herbert Binney (a former pupil of Sir George Frampton, R.A.). The figures represent "Justice," "Forethought," and "Thrift." The decoration of the vestibule in St. James's Street is carried out in marble, the floor being executed in squares of jasper and white Pentelikon, while the walls are panelled in green Cipollino with bronze panel mouldings. The staircase is in oak, with linings and panelling of a very effective design.

The principal contractors (all of London, except where otherwise stated) were

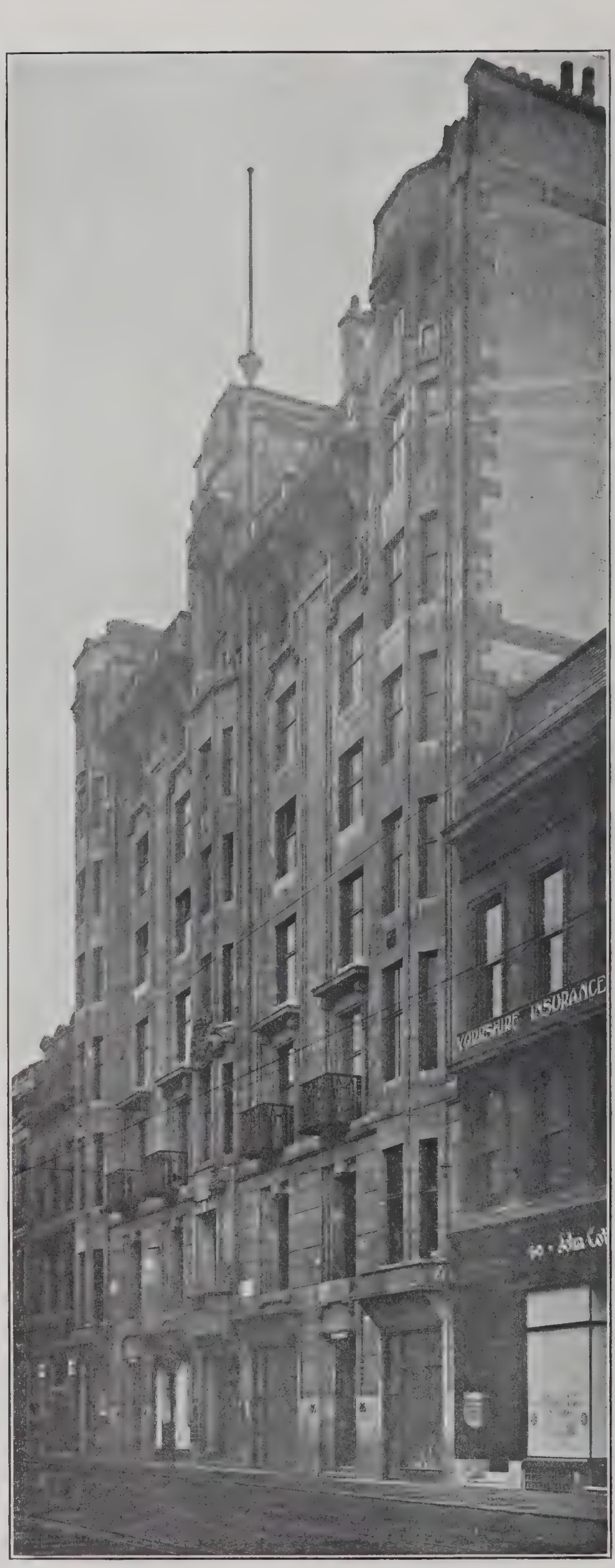


NEW PREMISES OF THE NORWICH UNION LIFE ASSURANCE SOCIETY, PICCADILLY AND ST. JAMES'S STREET, LONDON.
ERNEST RUNTZ AND FORD, FF.R.I.B.A., ARCHITECTS.

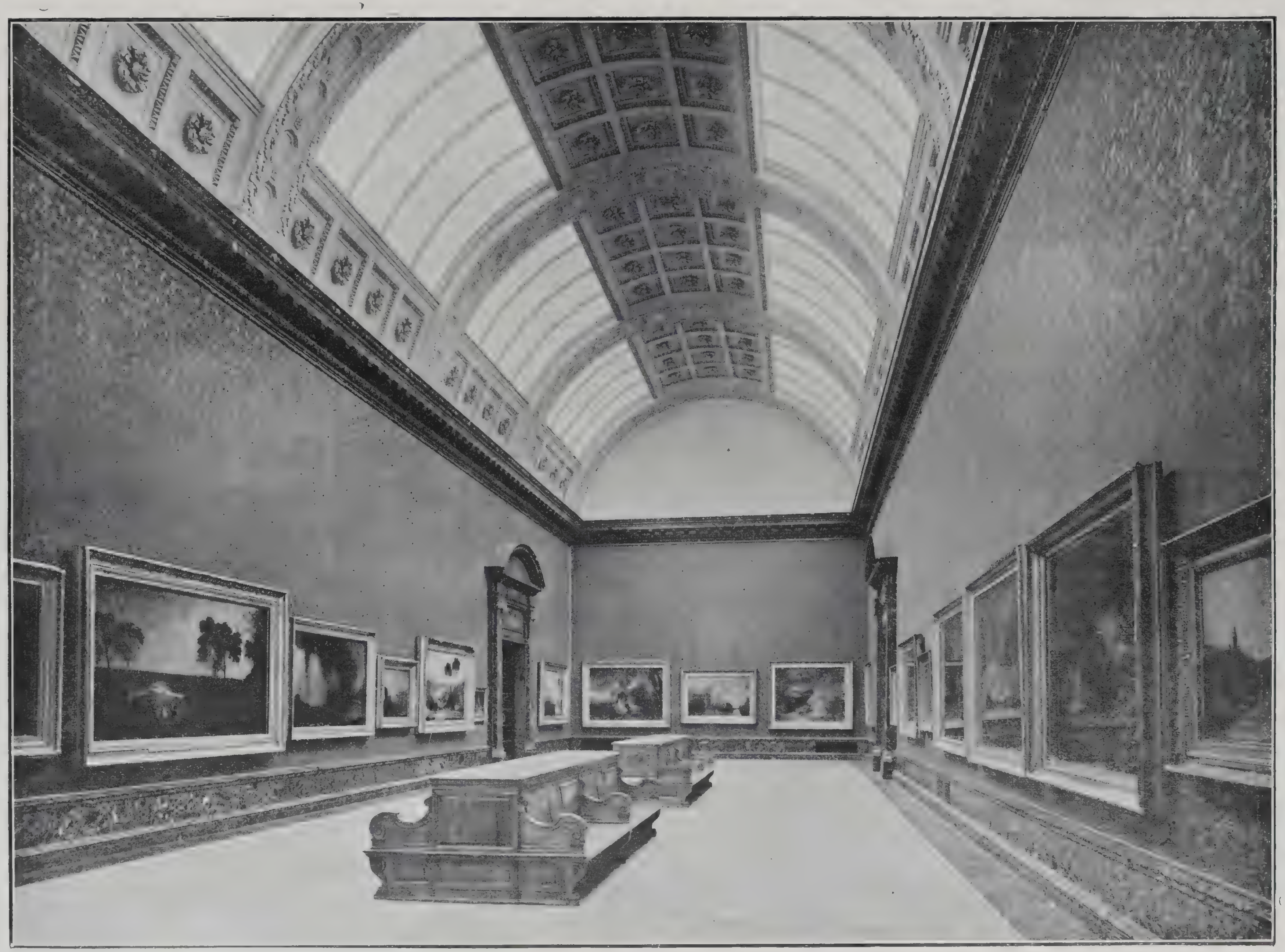
as follows: General contractors, Messrs. Patman and Fotheringham, Ltd., ; steelwork, Messrs. Matthew T. Shaw and Co., Ltd. ; fireproof floors, etc., Messrs. D. G. Somerville and Co. ; heating, hot water, and hydrants, Messrs. Strode and Co. ; electric lightings, Messrs. Matthew Hall and Co. ; electric passenger lift, Messrs. Smith, Major and Stevens, Ltd. ; sanitary fittings, Messrs. Matthew Hall and Co. ; architectural ironwork, lift enclosure, metal ornament and decoration in entrance hall, balconies, grilles, and lettering, Messrs. Jones and Willis ; glazed bricks, Messrs. The Leeds Fireclay Co., Ltd. ; wood-block flooring, Messrs. The Zeta Wood Flooring Co., Ltd. ; wall tiling, Messrs. Geo. Kent and Co. ; carving, Mr. Gilbert Seale ; pavement lights and fire-resisting glazing, Messrs. Hayward Bros. and Eckstein ; shop fronts, Messrs. Spreakley and Co. and Messrs. Stanley Jones and Co. ; bronze guttering, etc., Messrs. Swanser and Son ; lead shields, Messrs. Singer and Sons, Ltd., Frome ; bronze statuary, Messrs. Elkington and Co., Ltd. ; joinery and office fittings (Society's offices, first floor), Messrs. Goodalls, Manchester ; electric light fittings (Society's offices, first floor, staircases, and corridors), Messrs. J. J. Smith and Co. ; ironmongery, Messrs. Nettlefold and Sons, Ltd.

NORTHERN ASSURANCE BUILDING, GLASGOW.

During the past year a new building for the Northern Assurance Company has been completed in St. Vincent Street, Glasgow, from designs by Messrs. John A. Campbell and A. D. Hislop. As the accompanying photograph shows, it is an exceedingly tall structure, with the vertical lines emphasised. The company occupy the main accommodation on the lower floors, the remainder of the building being let out as offices. The building, faced with stone, is constructed of reinforced concrete by Messrs. The United Kingdom Fireproofing Co. The heating is by Messrs. James Cormack and Sons, Ltd., of Glasgow, who also installed the heating apparatus in the Imperial Union Club, which forms a part of the building. Marble lavatories were supplied by Messrs. Doulton and Co.



NORTHERN ASSURANCE BUILDING, ST. VINCENT STREET, GLASGOW.
JOHN A. CAMPBELL AND A. D. HISLOP, ARCHITECTS.



THE LARGE GALLERY OF THE NEW TURNER WING AT THE NATIONAL GALLERY OF BRITISH ART, MILLBANK, LONDON.

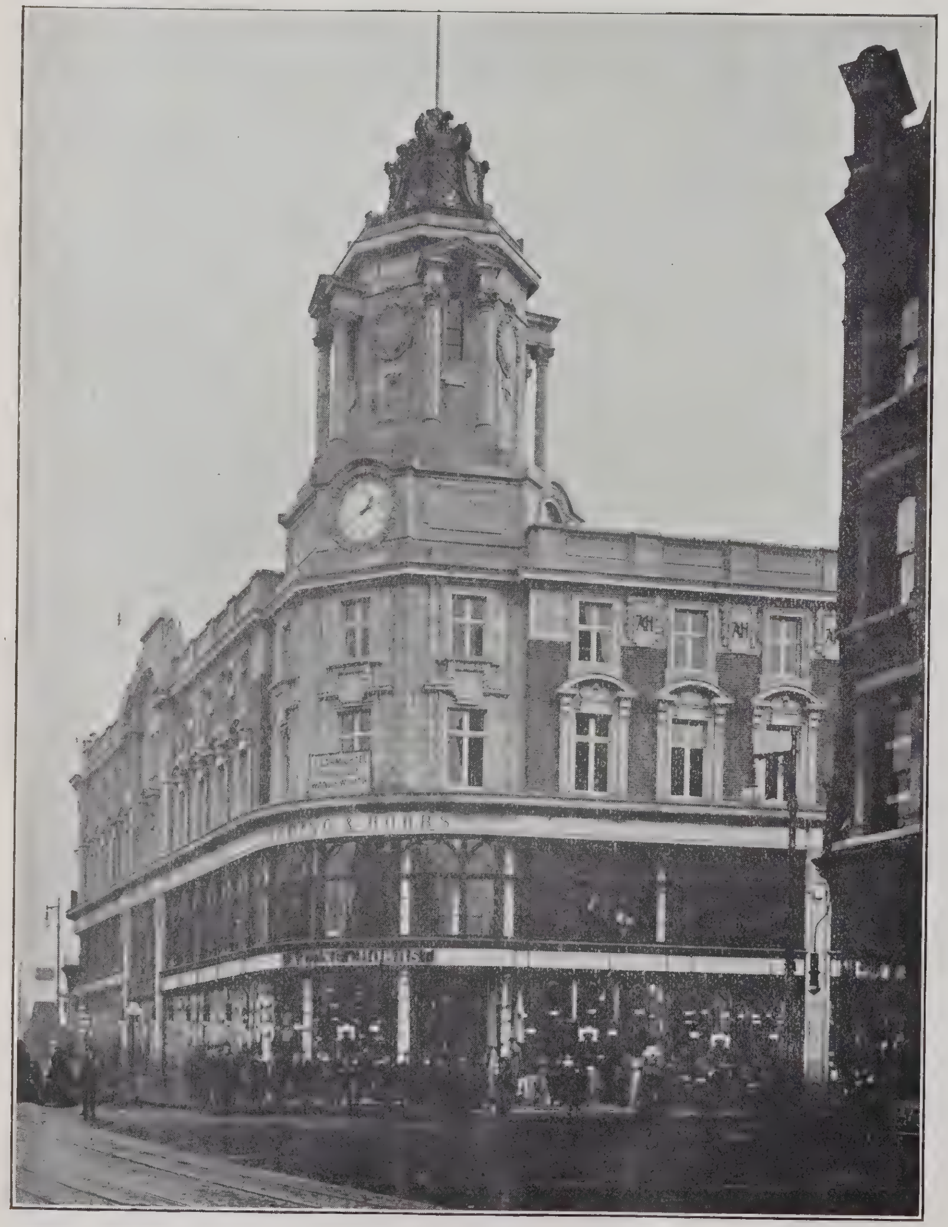
W. H. ROMAINE-WALKER, ARCHITECT.

TATE GALLERY EXTENSION.

This new wing, which houses the Turner Collection, has been erected from the design of Mr. W. H. Romaine-Walker. It contains five galleries on the main floor, and four on the ground floor. The architectural finishings of the galleries are executed effectively in Verde Antico marble. Messrs. Patman and Fotheringham, Ltd., were the general contractors. Fibrous plaster work, painting, and gilding, Messrs. Geo. Jackson and Sons, Ltd.; wall hangings, seats, and stands, Messrs. Litchfield and Co.; marble work, Messrs. H. T. Jenkins and Sons; parquet, wood-block, and terrazzo flooring, Messrs. Art Pavements and Decorations, Ltd.; glazing of skylights, Messrs. Helliwell and Co.; drainage, Messrs. Dent and Hellyer; glazed bricks, Messrs. The Leeds Fireclay Co., Ltd.

ARDING AND HOBBS'S PREMISES.

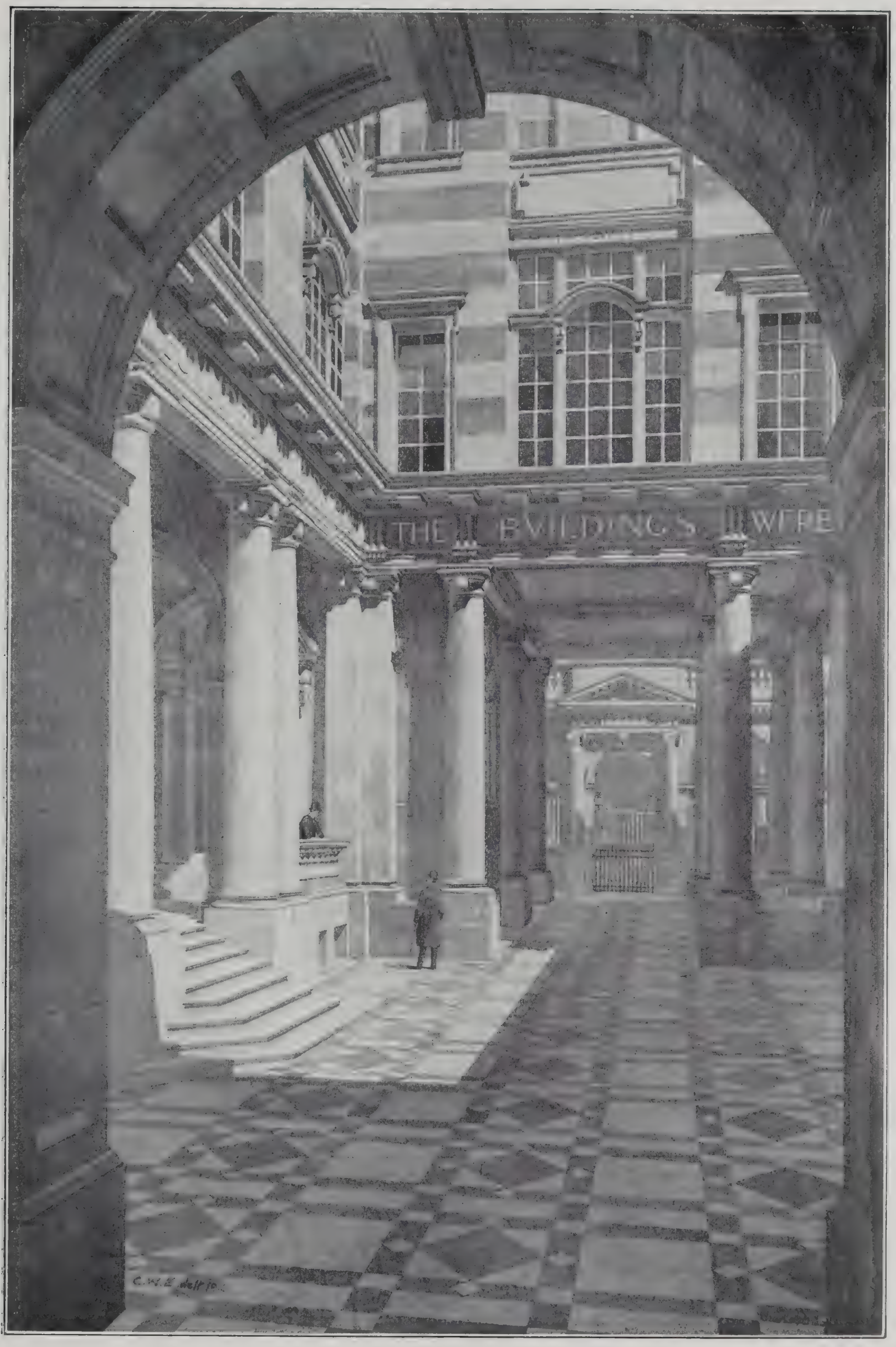
The new premises at Clapham Junction for Messrs. Arding and Hobbs occupy the site of the old premises which were destroyed by fire about a year ago. The building, opened in December, was erected with extreme rapidity from designs by Messrs. Gibson, Skipworth, and Gordon, of London, W. The ground and first-floor exteriors are characteristic of drapery stores, consisting mainly of plate glass windows. The two upper floors, however, are wholly architectural, and are rendered in brick with stone dressings and enrichments. Reinforced concrete construction on the Kahn system has been employed throughout. The showrooms on the ground floor have been decorated in the Adam manner. The second floor, which is reached by a central staircase, is almost entirely occupied by the furnishing department. The third floor is devoted to workrooms and staff dining-rooms. Water sprinklers to the number of 1,595 have been fitted in the ceilings throughout the building, and there are four fireproof staircases leading to emergency exits. Mr. James Carmichael, of Wandsworth, was the general contractor, and among the sub-contractors were the following:—Steel construction, Messrs. Drew Bear, Perks, and Co.; heating, Messrs. Rosser and Russell; lighting, Messrs. Belshaw and Co.; lifts, Messrs. Archibald Smith and Stevens; sprinklers, Messrs. Mather and Platt; roller shutters and blinds, and ornamental ironwork, Messrs. Steer and Thornborough; steel reinforcement, Messrs, Trussed Concrete Steel Co.; ironmongery, James Gibbons.



NEW PREMISES FOR ARDING AND HOBBS AT CLAPHAM JUNCTION, LONDON, S.W. GIBSON, SKIPWORTH AND GORDON, ARCHITECTS.

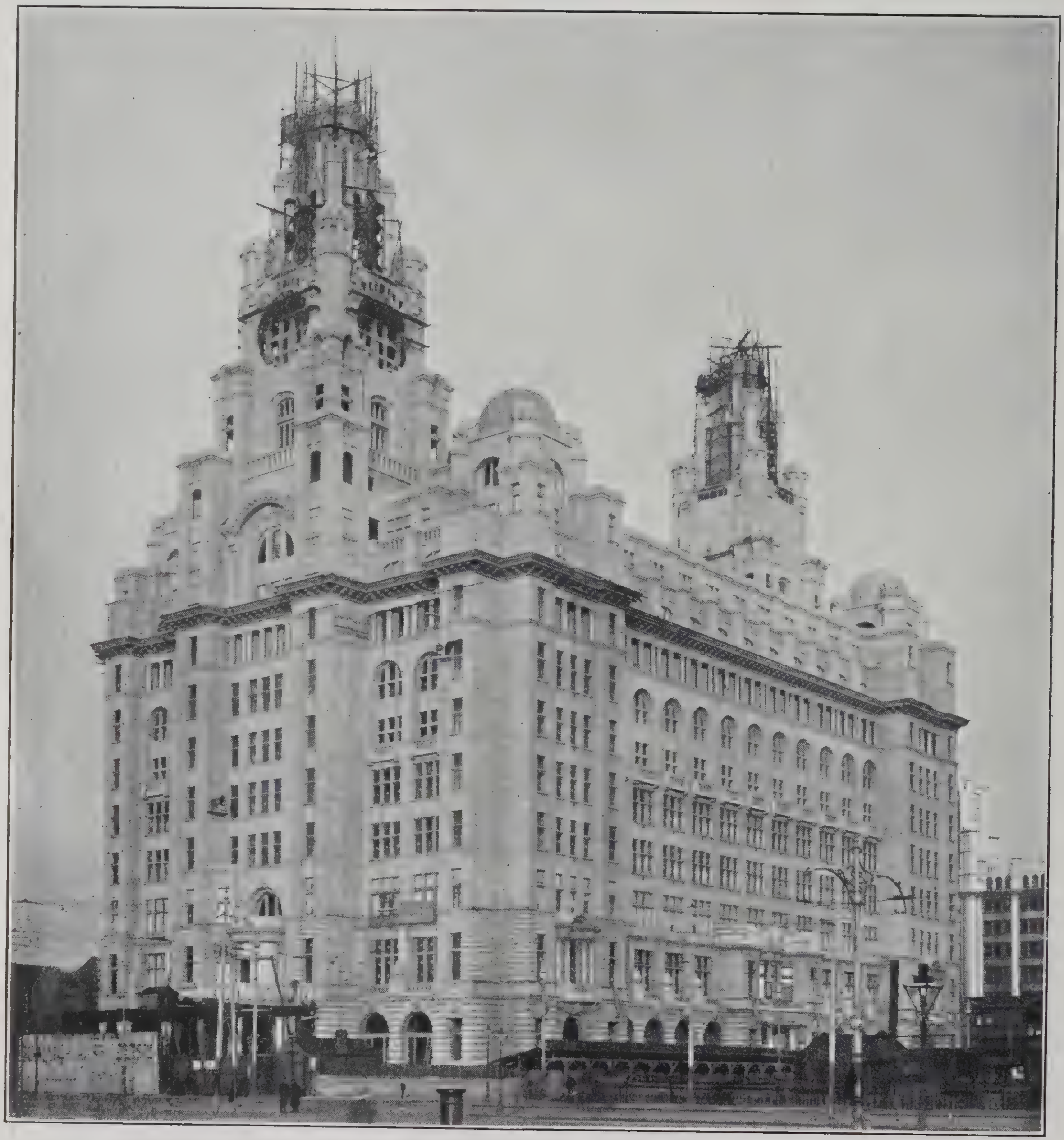
REFUGE ASSURANCE BUILDING, MANCHESTER.

This building, with its high tower, is practically completed. The accompanying illustration shows the internal courtyard, which is a portion of the large addition designed by Mr. Paul Waterhouse, the original building having been designed by his father, the late Mr. Alfred Waterhouse. R.A. The exterior of the original building is finished in red terra-cotta of a special hard glazed variety, and the extensions, with respect to the exterior elevation, have necessarily been carried out in the same material; but in order to relieve the large mass of uniform colour, Mr. Paul Waterhouse has executed the internal courtyard in two shades of buff, approaching in some cases almost to a white. The courtyard is entered by an archway at the base of the massive tower more than 200ft. in height which forms the central feature between the old block and the new. The present contractors are Messrs. Armitage and Hodgson, of Leek, in succession to Messrs. Normanton and Sons and Messrs. W. Brown and Sons, who carried out in turn earlier portions of the additions. The clerks of works have been Mr. W. Robson and Mr. E. Kemp. The terra-cotta of the outer elevations is by Messrs. Doulton and Co. and Mr. J. C. Edwards, of Ruabon. The interior courtyard and the top of the tower are by Mr. Alfred Whitehead. Pavings have been laid by Messrs. Stuart's Granolithic Co., Ltd. Ironmongery was supplied by Mr. James Gibbons. Hopton-Wood stone columns, pilasters and balustrade, Messrs. The Hopton-Wood Stone Firms, Ltd.



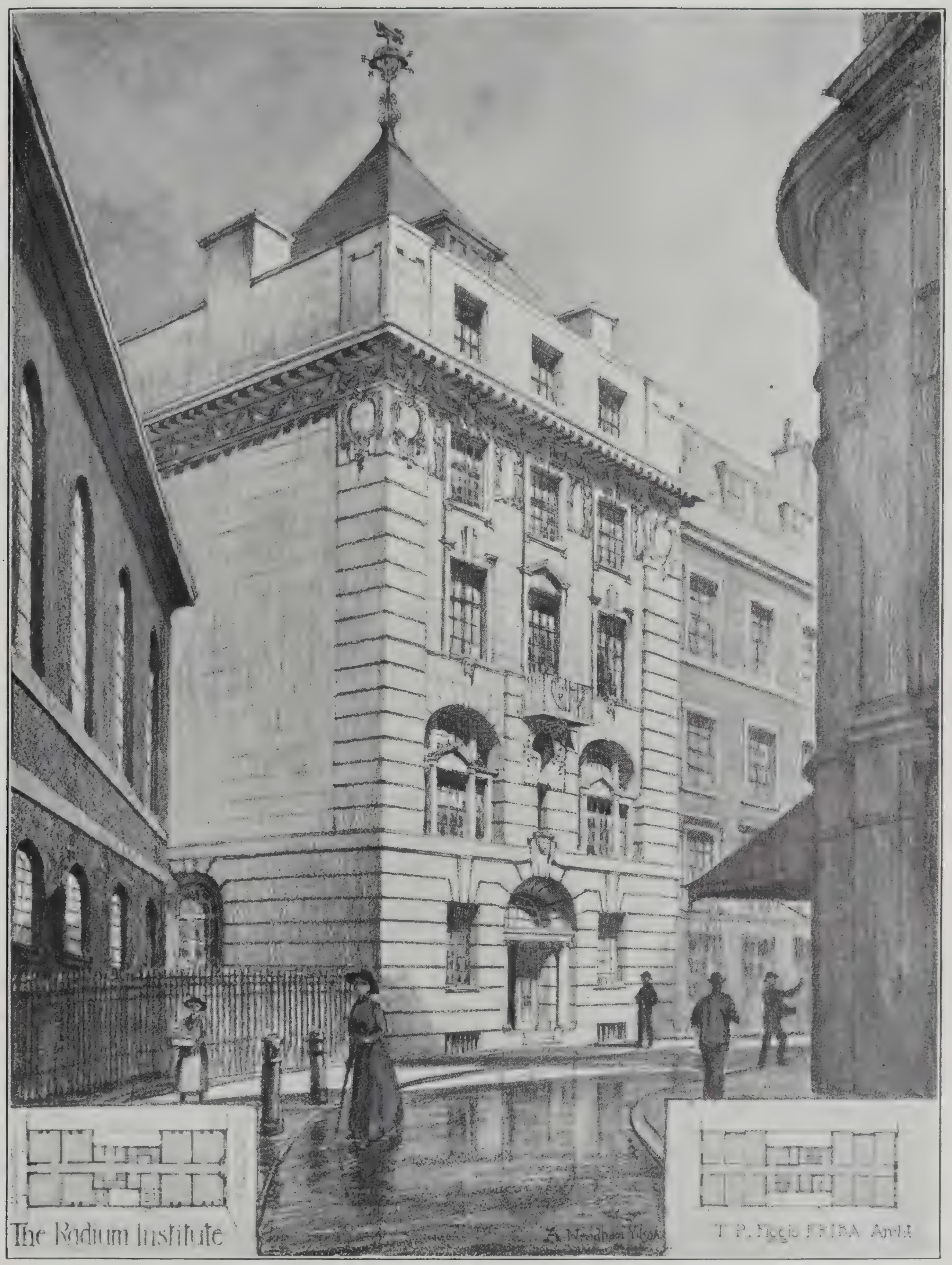
REFUGE ASSURANCE BUILDING, MANCHESTER: THE COURTYARD.
PAUL WATERHOUSE, M.A., F.R.I.B.A., ARCHITECT.

ROYAL LIVER BUILDING, LIVERPOOL.



NEW BUILDING FOR THE ROYAL LIVER FRIENDLY SOCIETY, PIERHEAD, LIVERPOOL.
W. AUBREY THOMAS, ARCHITECT.

This building is a monolithic reinforced concrete skeleton frame, the columns, beams, arches, and floors all being carried out in that material and bonded together. Light in the interior is secured by two spacious wells 58ft. square. Stairways are provided, and intercommunication between the floors is secured by an installation of 14 passenger lifts and two goods lifts. The structure has been designed as an office building by Mr. W. Aubrey Thomas, of Liverpool, and is owned by the Royal Liver Friendly Society. In plan, the building is 310ft. by 178ft., while the height to the main roof is 170ft. The domes of the two main towers are 290ft. above pavement level, the total height being 320ft. from the basement floor level to the top of the towers, and about 360ft. from the bottom of the foundations to the top of the Liver bird which is to adorn the towers. There are 11 storeys below the main roof, and 6 storeys in the towers, making a total of 17 storeys. The general contractors are Messrs. Edmund Nuttall and Co., of Trafford Park, Manchester, among the sub-contractors being the following: Granite, Messrs. A. and F. Manuelle and Messrs. Cooper, Wettern, and Co.; lifts, Messrs. R. Waygood and Co., Ltd.; metal casements, Messrs. Henry Hope and Sons, Ltd.; glazing, Messrs. Williams and Watson; plumbing, Messrs. Wm. Griffiths and Sons, Ltd.; joinery, Messrs. Wylie and Lochhead, Ltd.; plastering, Messrs. Ben Henry Johnson and Sons; electric lighting, Messrs. Dargue Griffiths and Co., Ltd.; heating (on patent system of hot-panelling and flooring), Messrs. Richard Crittall and Co.; clock, Messrs. Gent and Co., Ltd.; marble and terrazzo, Messrs. John Stubbs and Sons.

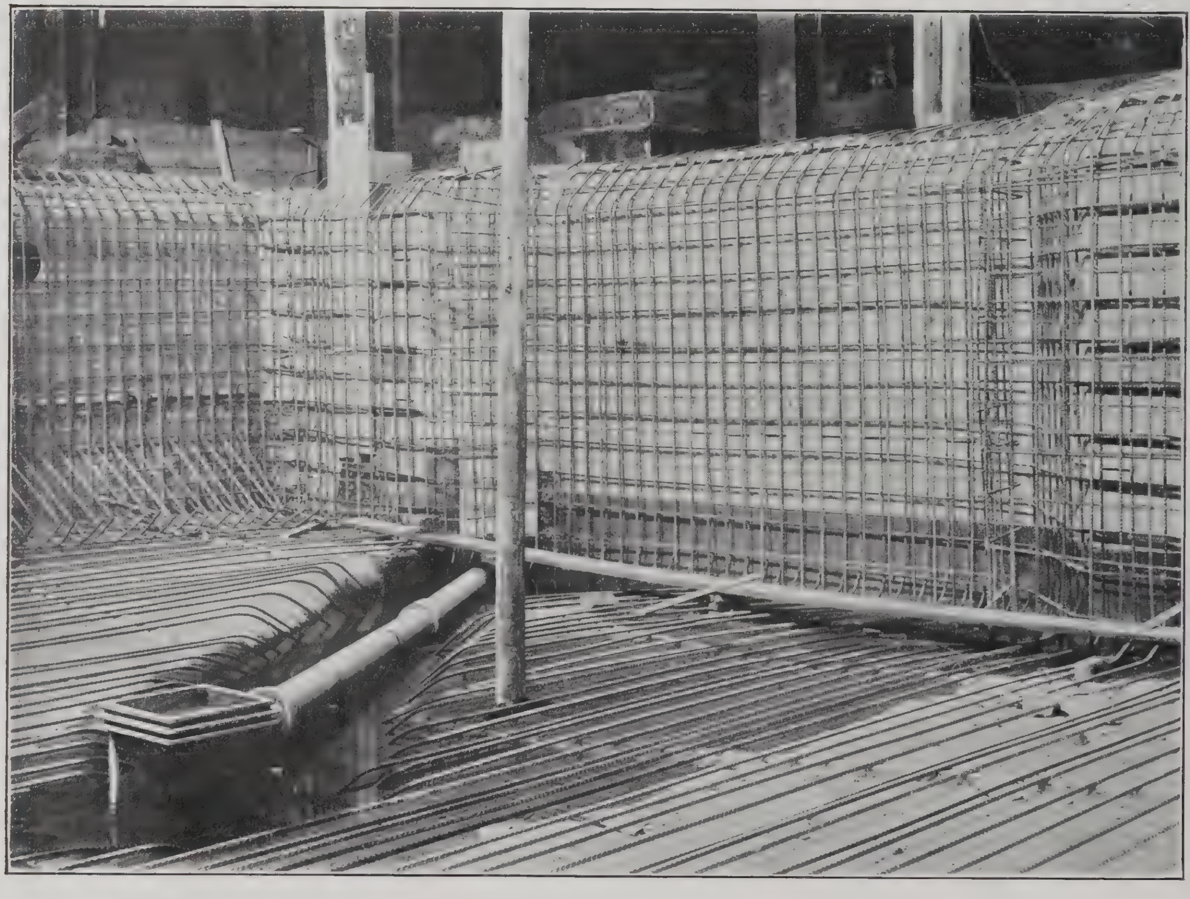


This building is the outcome of Sir Ernest Cassel's and Lord Iveagh's munificence. Accommodation is provided both for necessitous patients and for the well-to-do.

THE RADIUM INSTITUTE, RIDING HOUSE STREET, PORTLAND PLACE, LONDON, W.
T. PHILLIPS FIGGIS, F.R.I.B.A., ARCHITECT.

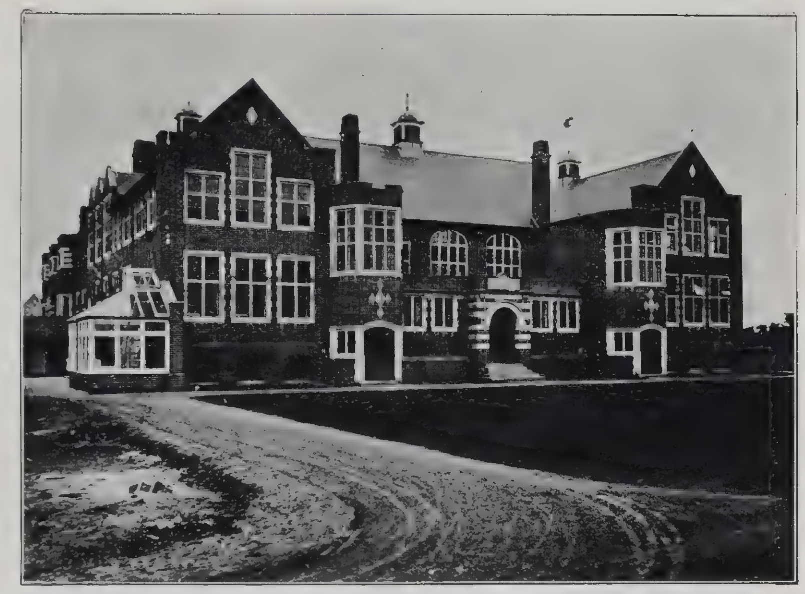
REINFORCED CONCRETE IN 1910.

Reinforced Concrete continues to meet with increasing favour among architects, builders, and engineers in this country, and every year sees an ever-growing list of works carried out on this system of construction. The adaptability of the material, its fire-resisting qualities, and the great saving in cost and in space which can be effected, all combine to give Reinforced Concrete the foremost place for important new buildings and other works. During the past year a large number of important structures have been completed in London and the provinces, an illustrated review of some of which is here presented.

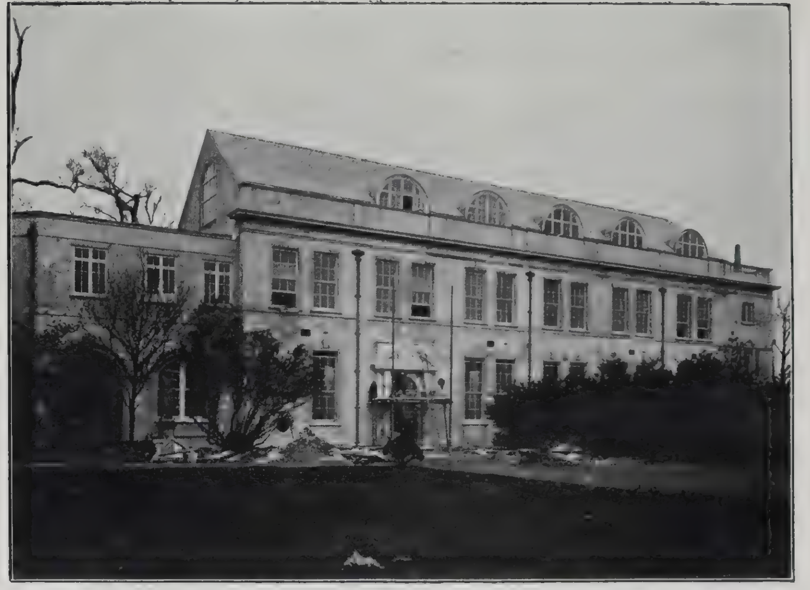


Swimming Bath at the Royal Automobile Club, Pall Mall, London. Mewes and Davis and E. Keynes Purchase, F.R.I.B.A., Architects.

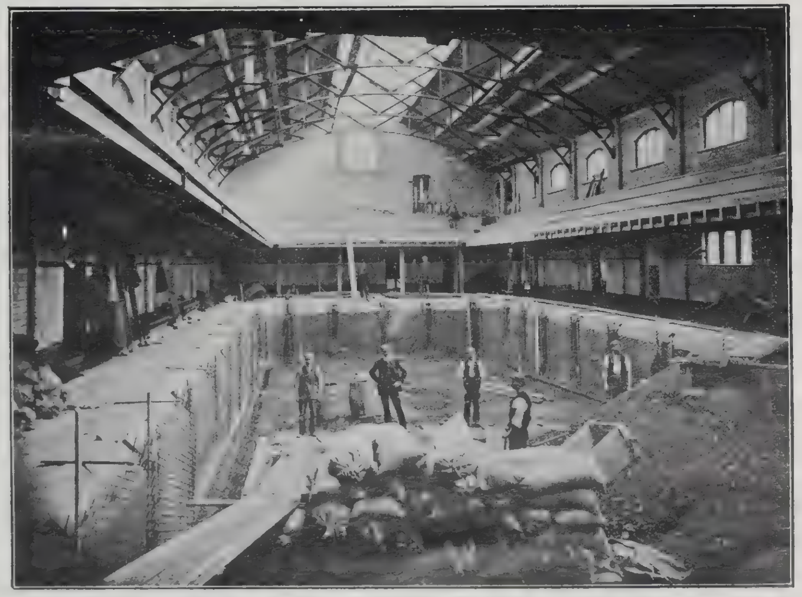
CONSTRUCTED ON THE INDENTED BAR SYSTEM (Patent Indented Steel Bar Co., Ltd., London.)



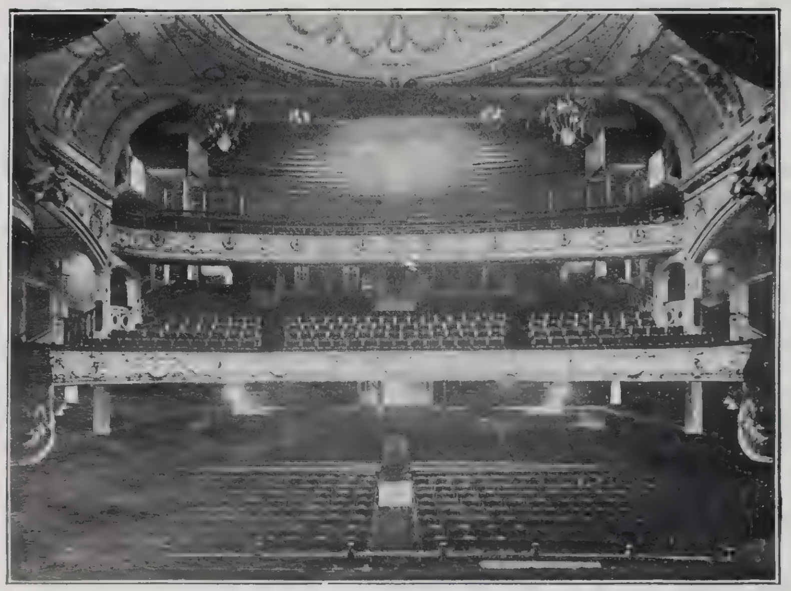
County Girls' School, Cambridge. H. H. Dunn, A.R.I.B.A., Architect.



Convent of the Sacred Heart, Roehampton. Percy A. Lamb, Architect.

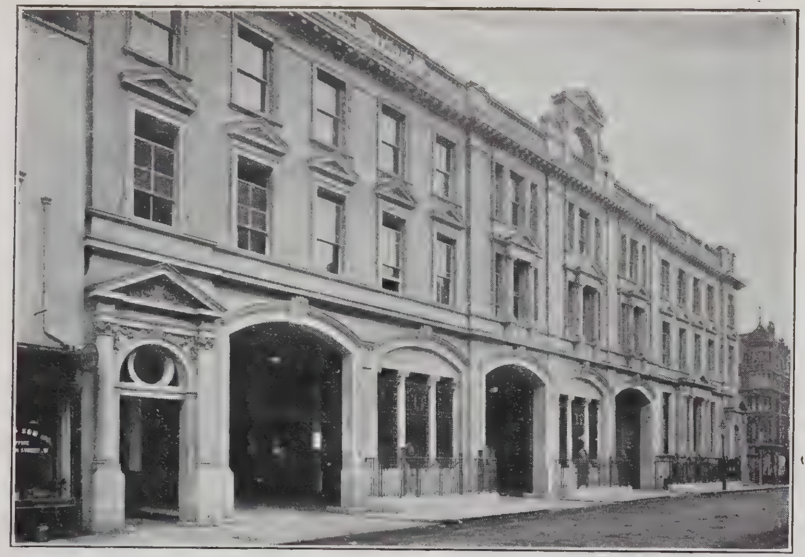


Public Baths for the Corporation, Salford. Magnall and Littlewoods, Architects.

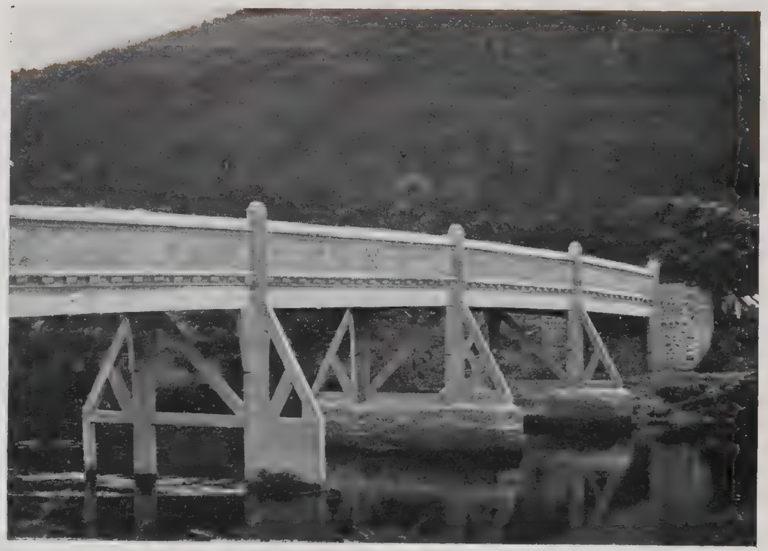


Empire Theatre, West Hartlepool. W. and T. R. Milburn, Architects.

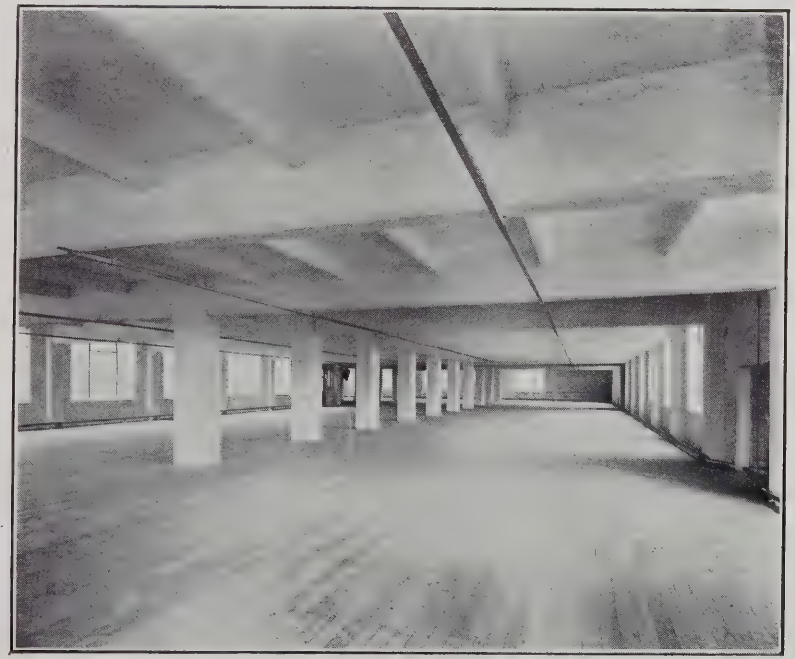
BUILDINGS CONSTRUCTED WITH EXPANDED METAL. (Expanded Metal Co., Ltd., London.)



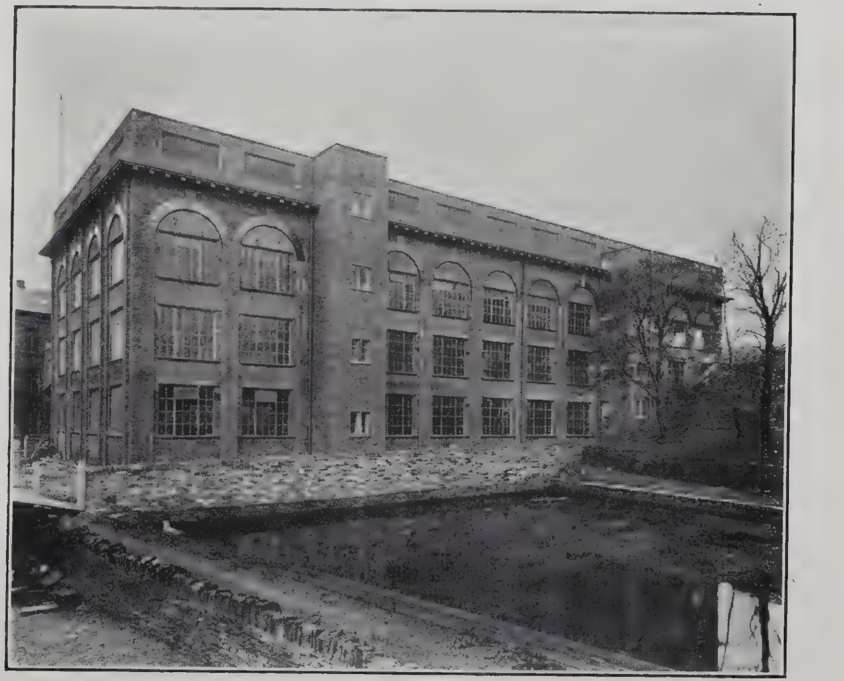
Western District Post-office, London. J. Rutherford, (H.M. Office of Works) Architect.



Bridge at Mauld, Inverness.



Warehouse at Bailiffe Bridge.



Warehouse at Bailiffe Bridge.

WORKS ERECTED ON THE COIGNET SYSTEM. (Edmond Coignet, Ltd.)

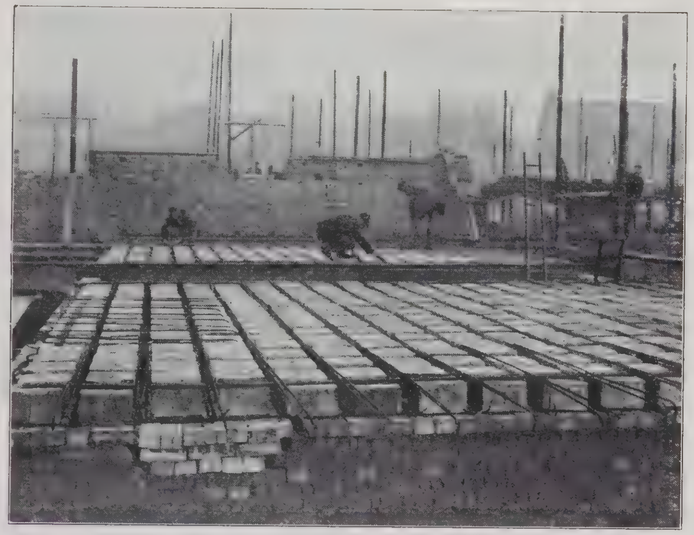
Ponteland Bridge, Watson and Scott, Architects.

Retaining Wall, Bury. A. W. Bradley, A.M.I.C.E., Engineer.

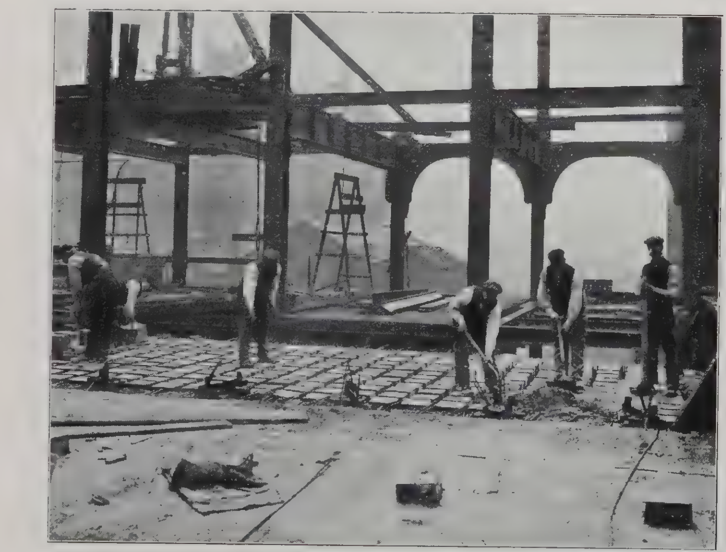
New Premises for the Young Men's Christian Association, Manchester. Woodhouse, Corbett and Dean, Architects.

Union of London and Smith's Bank, Leeds. Perkins and Bulmer, Architects.

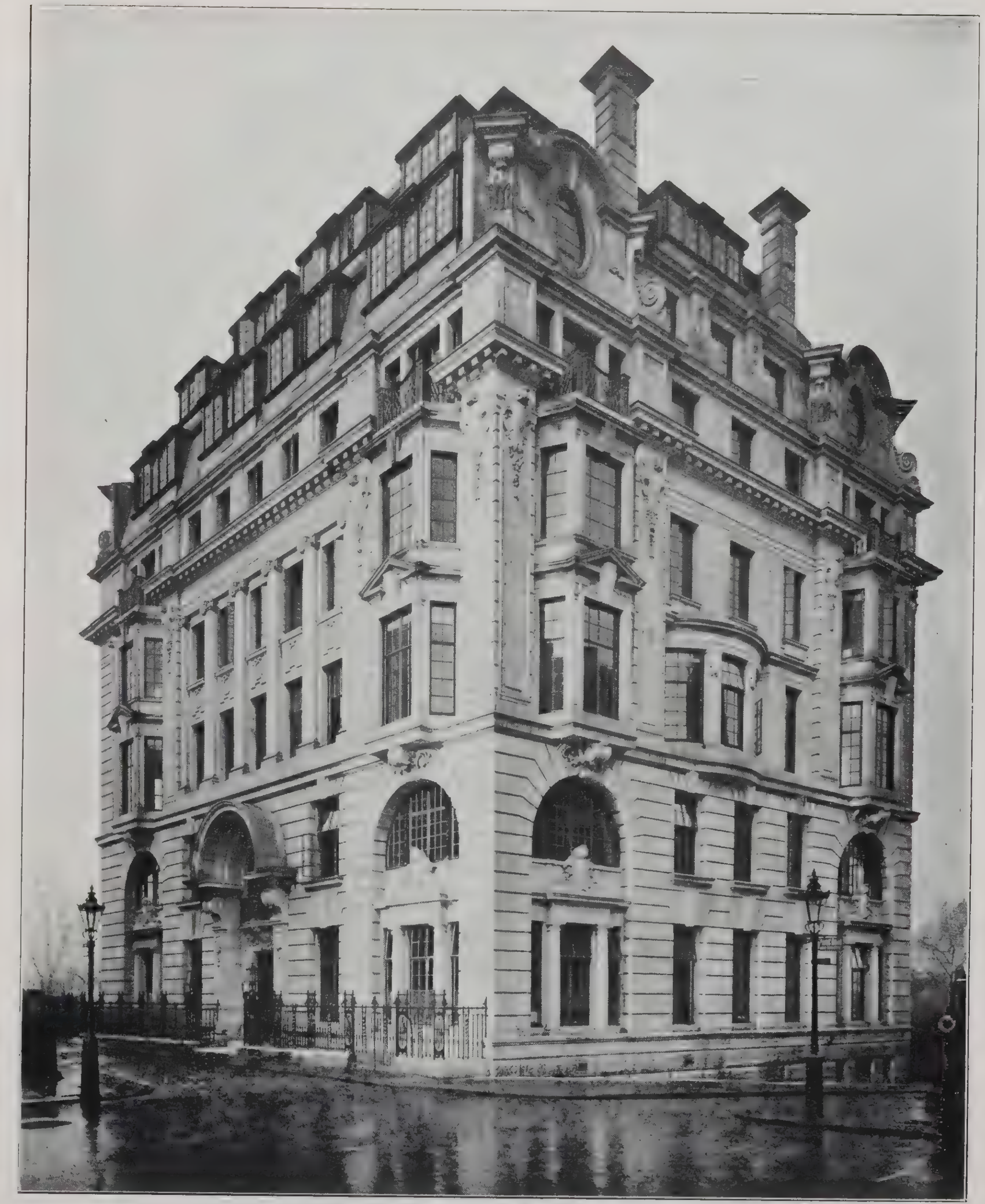
BUILDINGS, ETC., ERECTED ON THE KAHN SYSTEM. (The Trussed Concrete Steel Co. Ltd., London.)



County High School, Leytonstone. Newman and Jacques, Architects.
Kleine floor slabs reinforced both ways. Clear span 23 ft. by 22 ft.



New Offices and Warehouse for Calico Printers' Association, Manchester.
Charles Clegg and Sons and Penman, Architects,

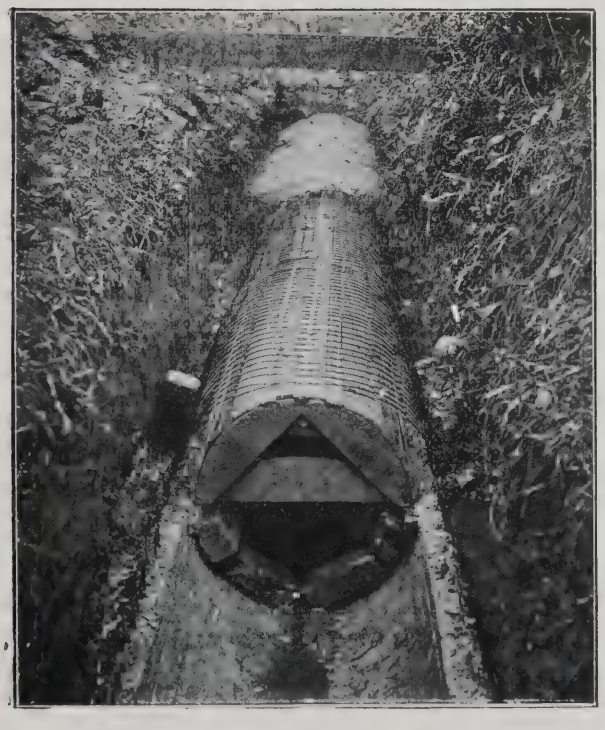


New Building for the Anglo-American Oil Company, Queen Anne's Gate, Westminster.
Gibson, Skipworth and Gordon, Architects.

BUILDINGS IN WHICH KLEINE FIREPROOF FLOORS HAVE BEEN USED. (The Kleine Patent Fire-Resisting Flooring Syndicate, Ltd., London.)

Leicester and Rutland Counties Asylum, Narborough. Everard, Son and Pick, Architects.

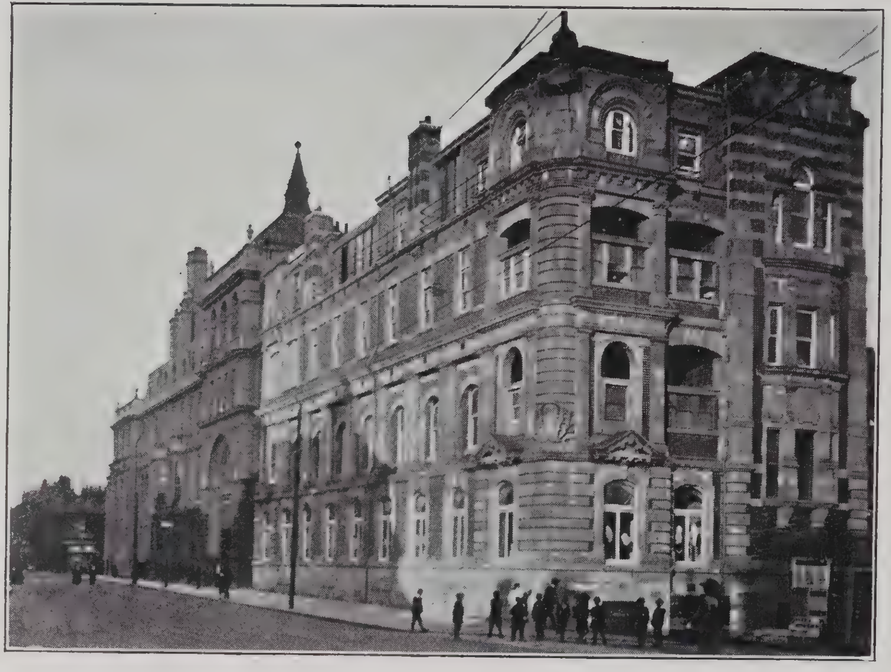
Victoria Station (L. and Y. Railway), Manchester. D. C. Rattray, M.I.C.E., Engineer-in-Chief.



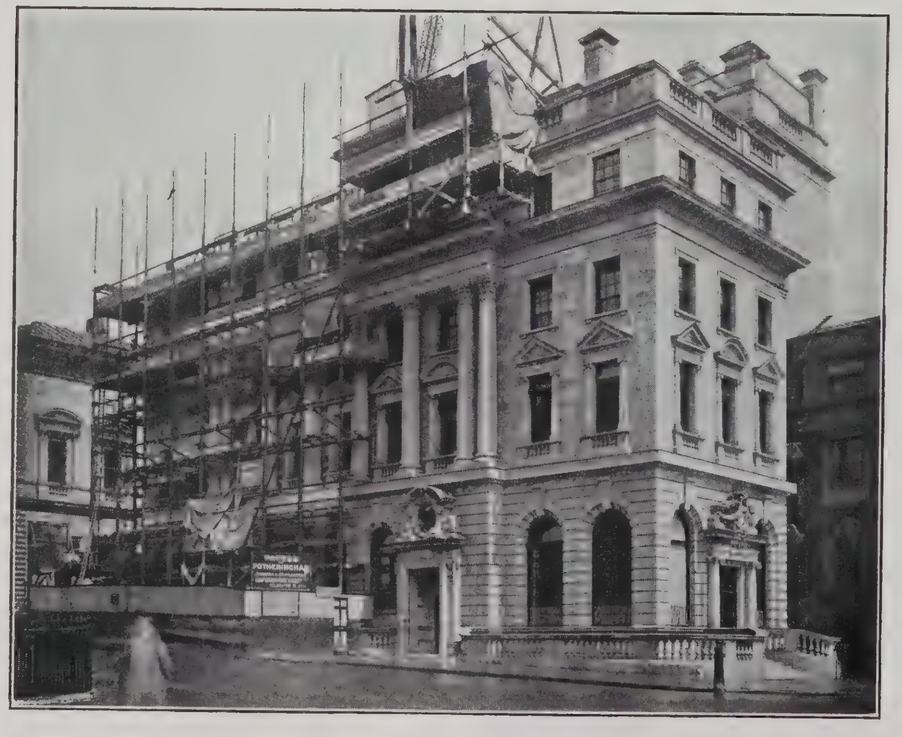
Expanded Steel-Concrete Sewer for the Hartlepool Corporation.
H. C. Crummack, A.M.I.C.E., Engineer.

Concrete Water Tower at Downpatrick, for the Down Asylum Water Supply.

WORKS CONSTRUCTED WITH EXPANDED METAL. (Expanded Metal Co., Ltd.)

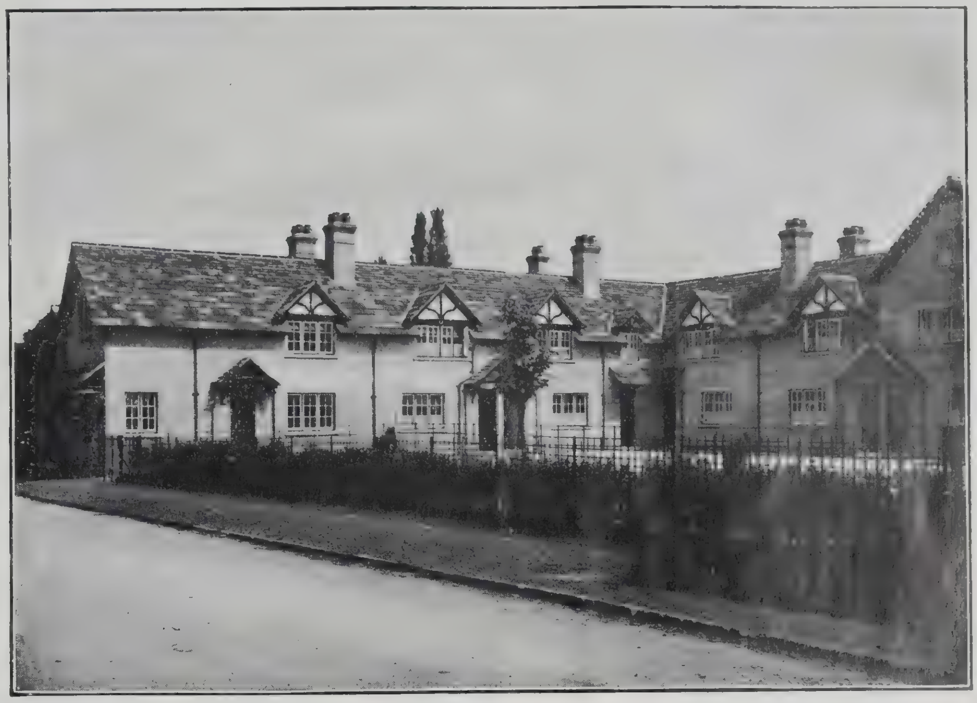


The Royal Hospital, Sheffield.

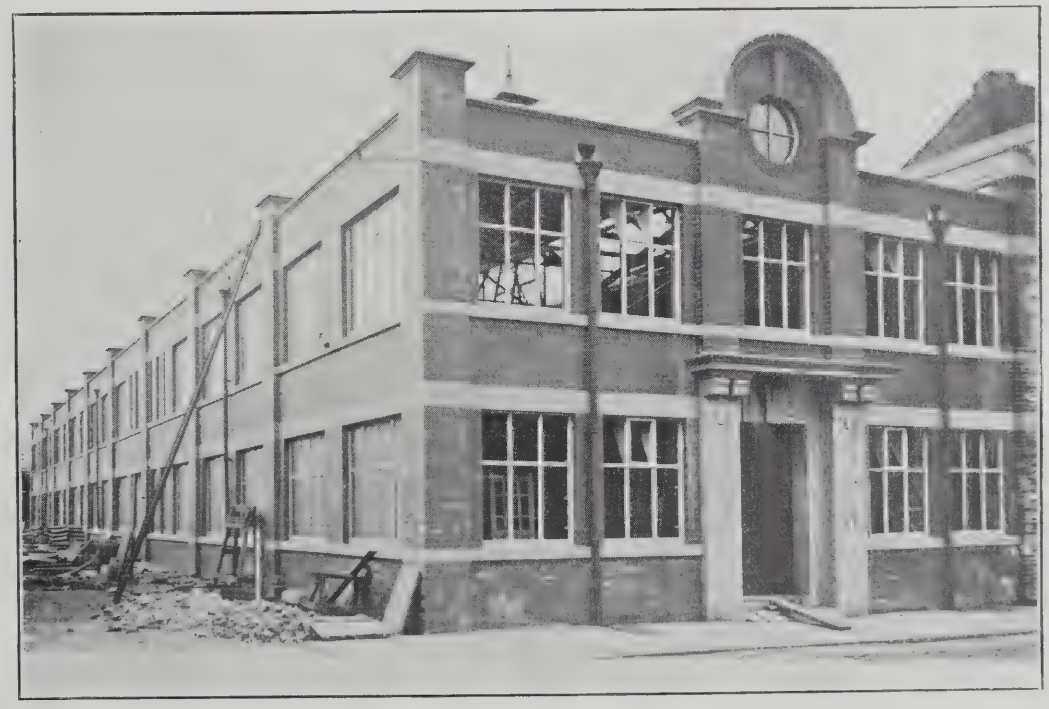


North British and Mercantile Insurance Company's Premises, Waterloo Place, London.

BUILDINGS ERECTED IN REINFORCED CONCRETE BY STUART'S GRANOLITHIC CO., LTD. (LONDON)

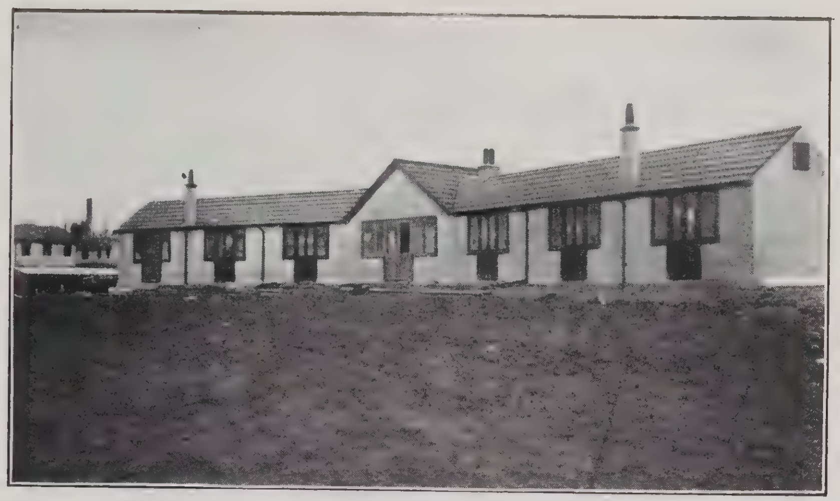


Cottages at Rostherne for Earl Egerton.

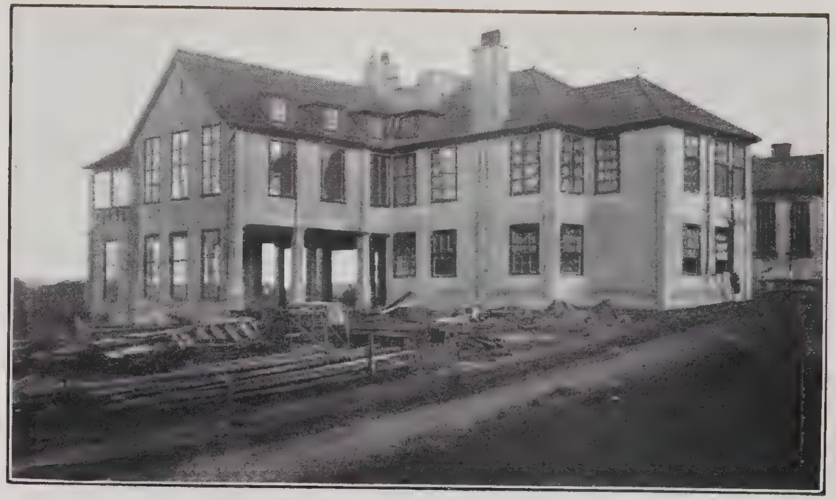


Extension to Offices and Works of David Bridge and Co., Ltd., Castleton. Smith and Cross, Architects.

BUILDINGS ERECTED ON THE STEEL WIRE LATTICE SYSTEM. (Richard Johnson, Clapham, and Morris, Ltd., Manchester).

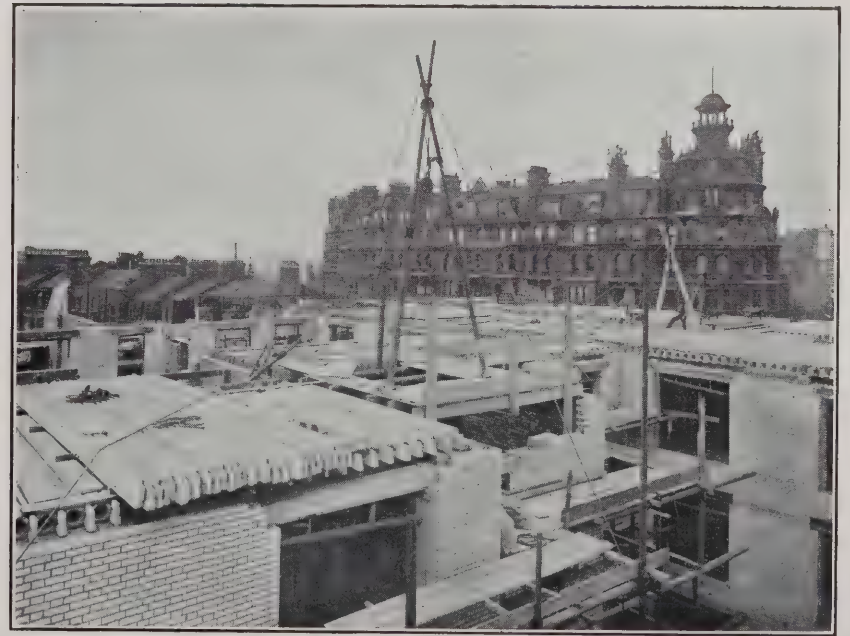


Pavilion at National Sanatorium, Benenden.

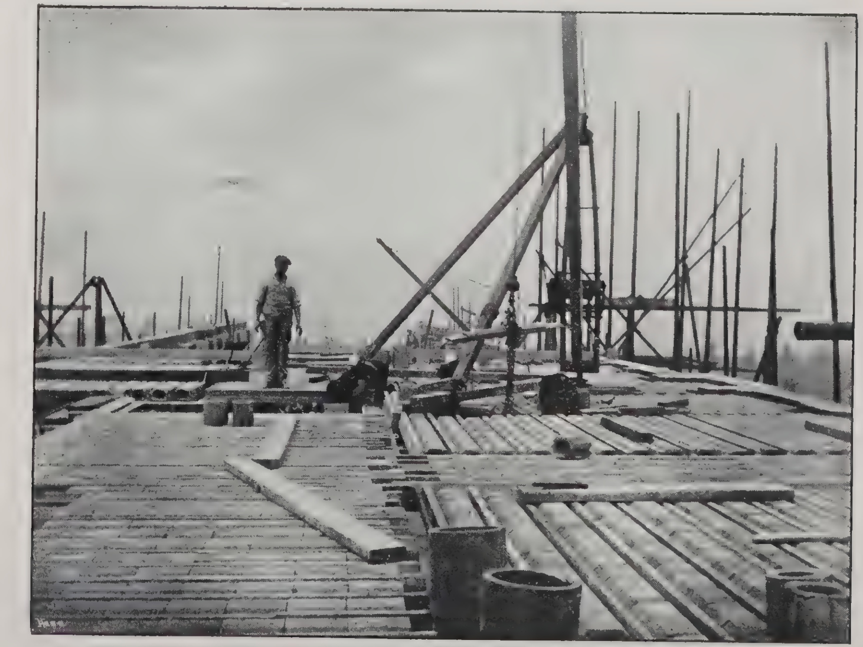


Lanfine House, Kirkintilloch, N.B.

BUILDINGS ERECTED ON THE FRAZZI SYSTEM. (**Frazzi** Fireproof Construction, Ltd., London.)

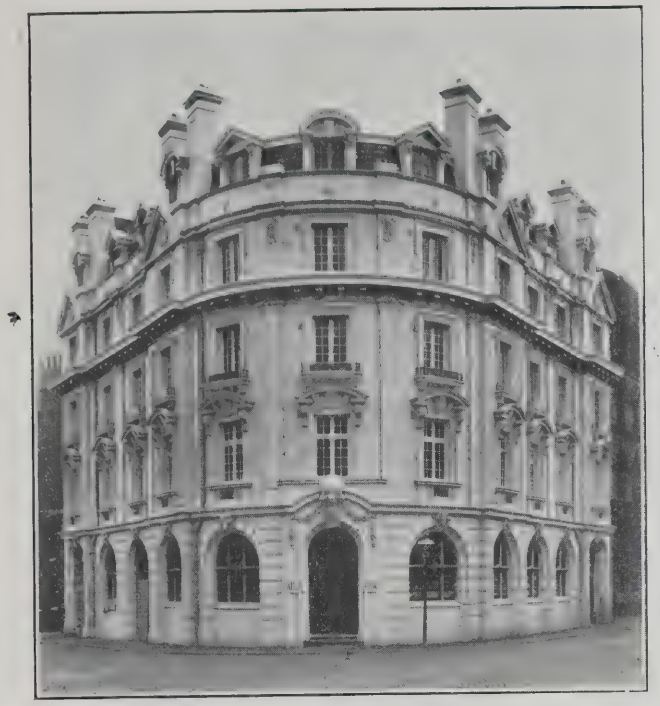


Floors in course of construction, Imperial Court, Knightsbridge, London.

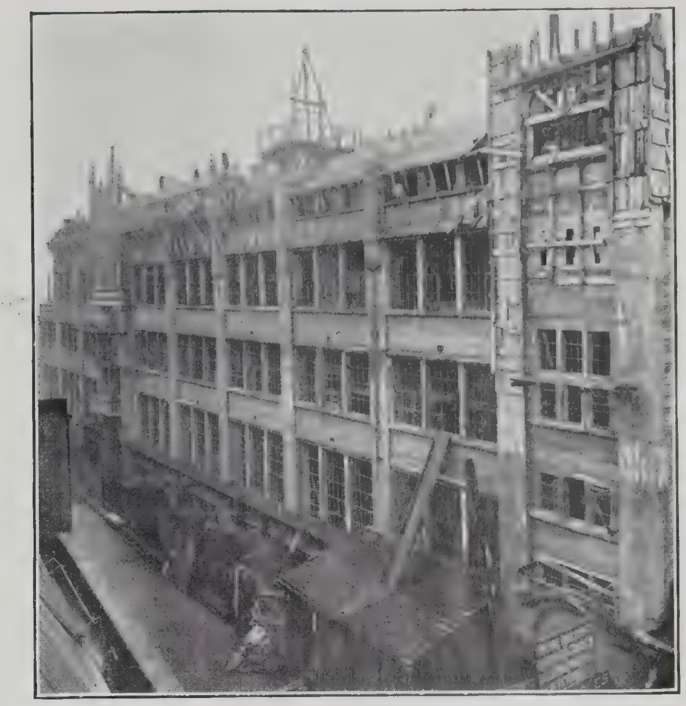


Floors in course of construction, Royal Infirmary, Sheffield.

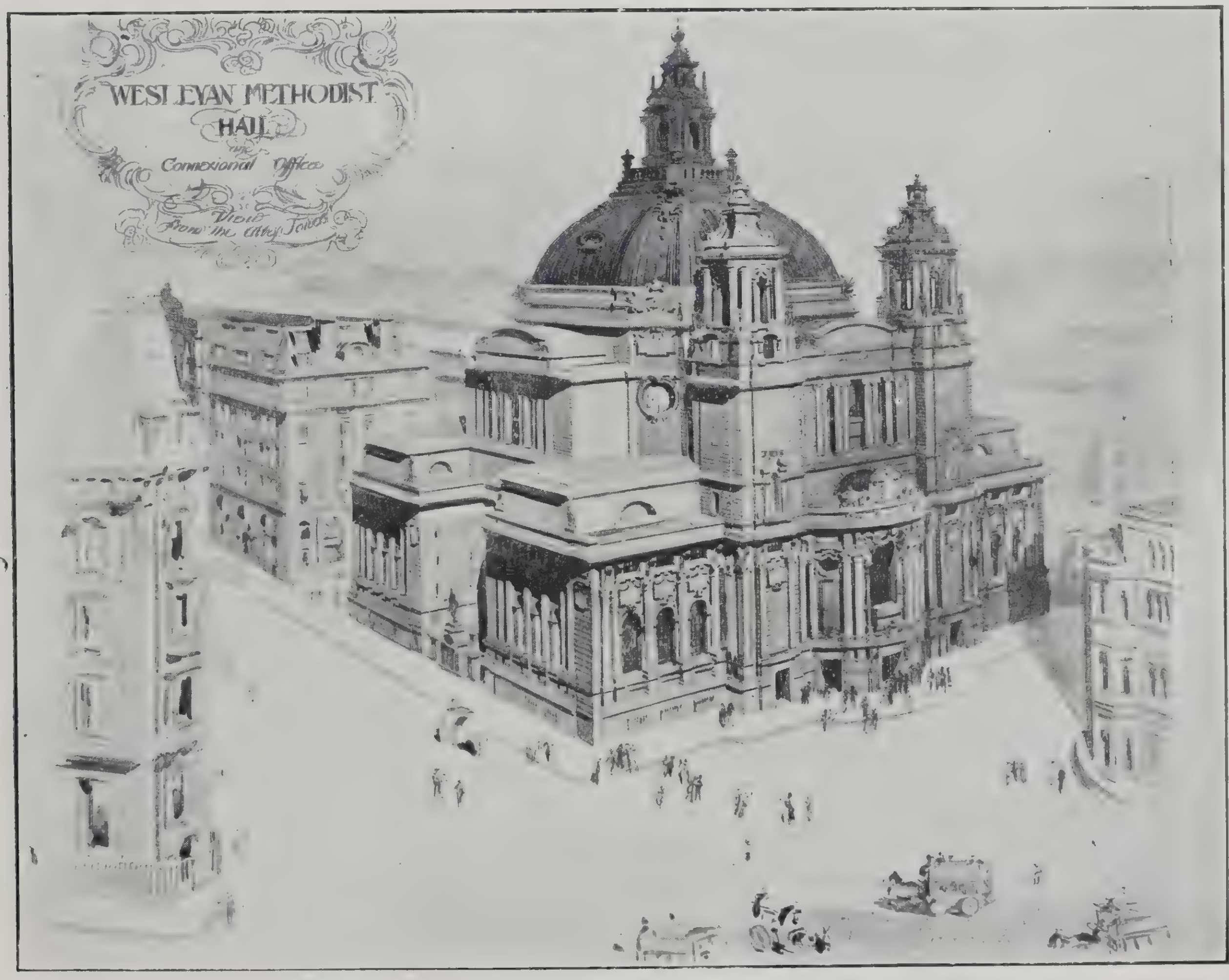
FLOOR CONSTRUCTION BY THE ARMOURED TUBULAR FLOORING COMPANY, LTD., LONDON.



Atlas Chambers, Leeds. Perkins and Bulmer, Architects.

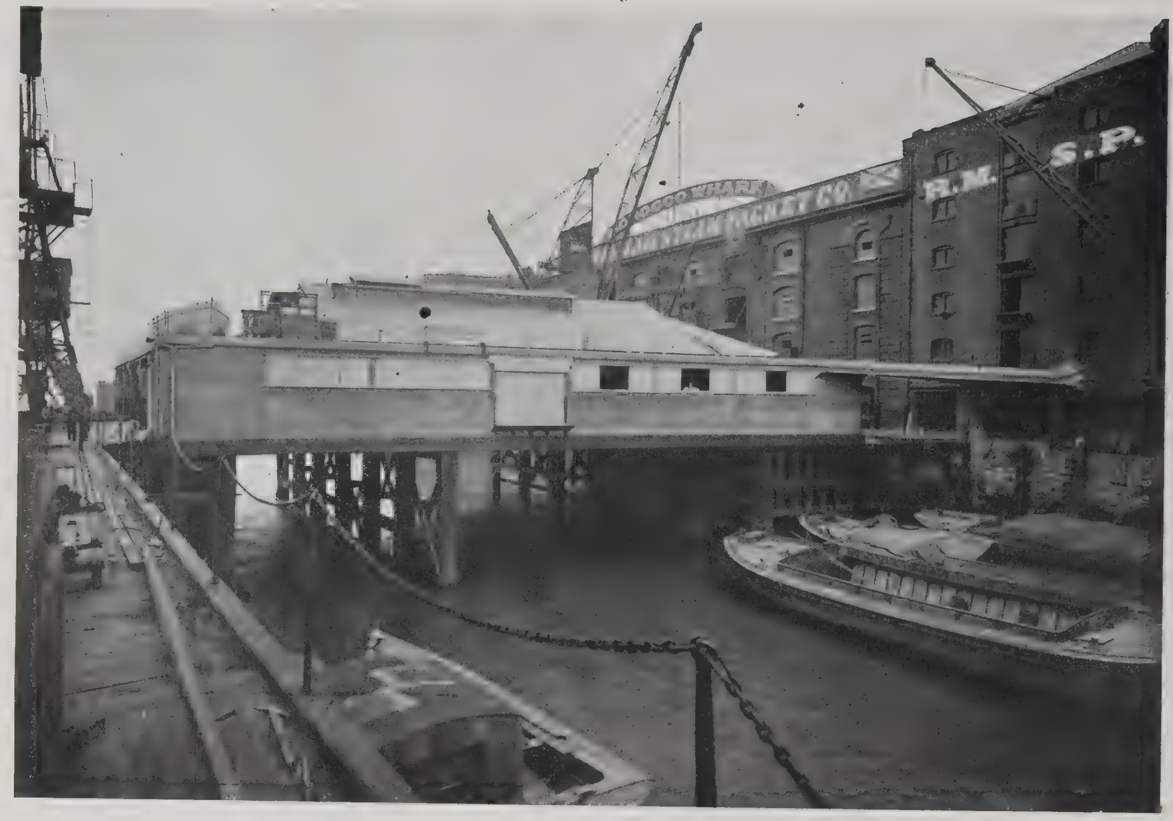


Clay's Premises, Brunswick Street, London. G. F. Collison, Architect.

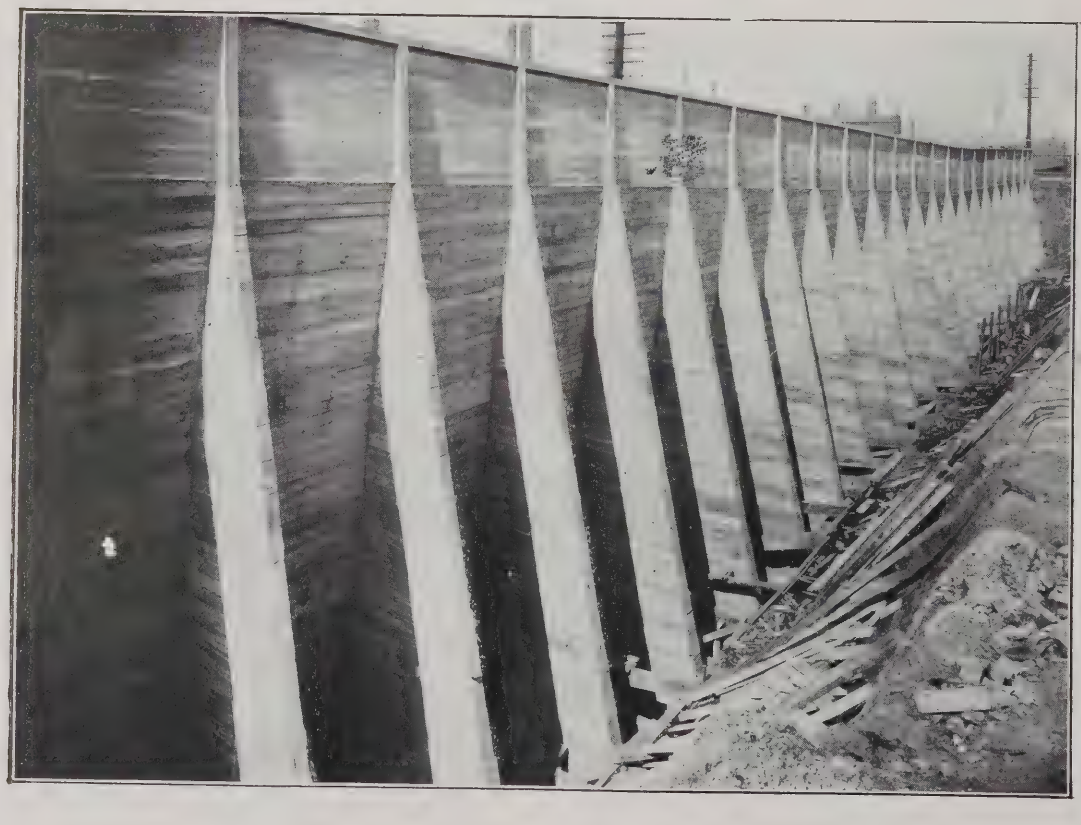


New Wesleyan Hall, Westminster. Lanchester and Rickards, FF.R.I.B.A., Architects.

BUILDINGS ERECTED ON THE KAHN SYSTEM. (The Trussed Concrete Steel Co., Ltd., London.)

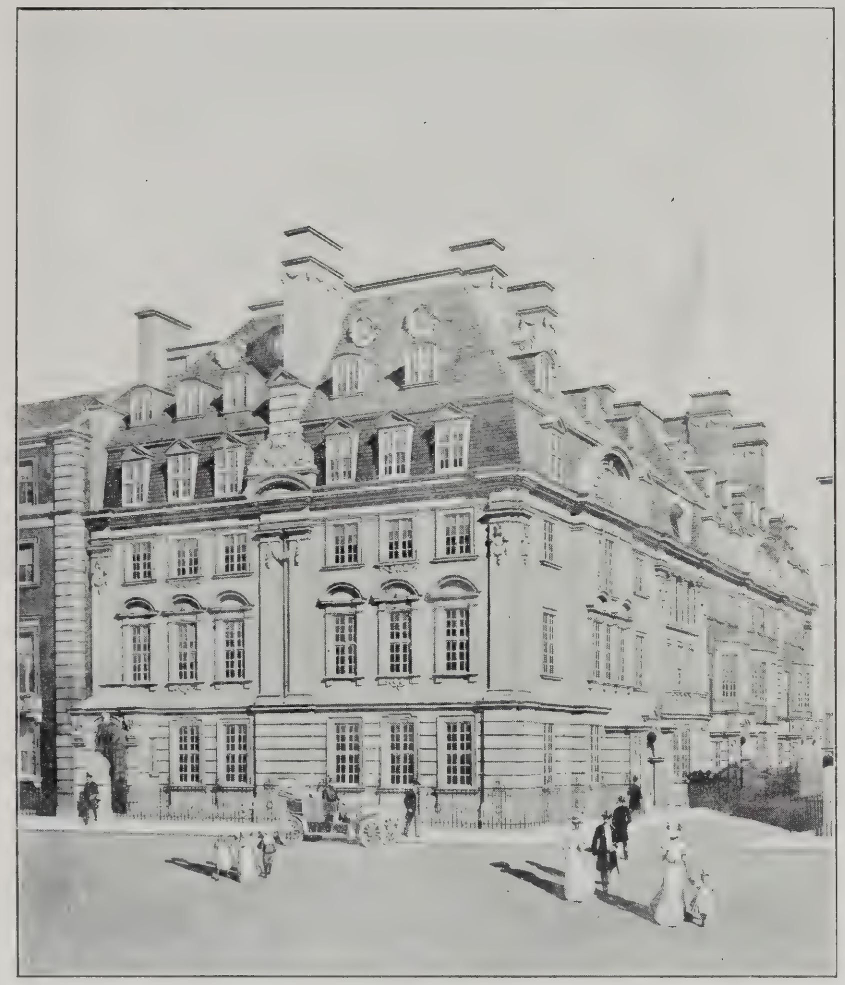


Transit Shed, Wapping, London, E. Lionel U. Grace, Architect.



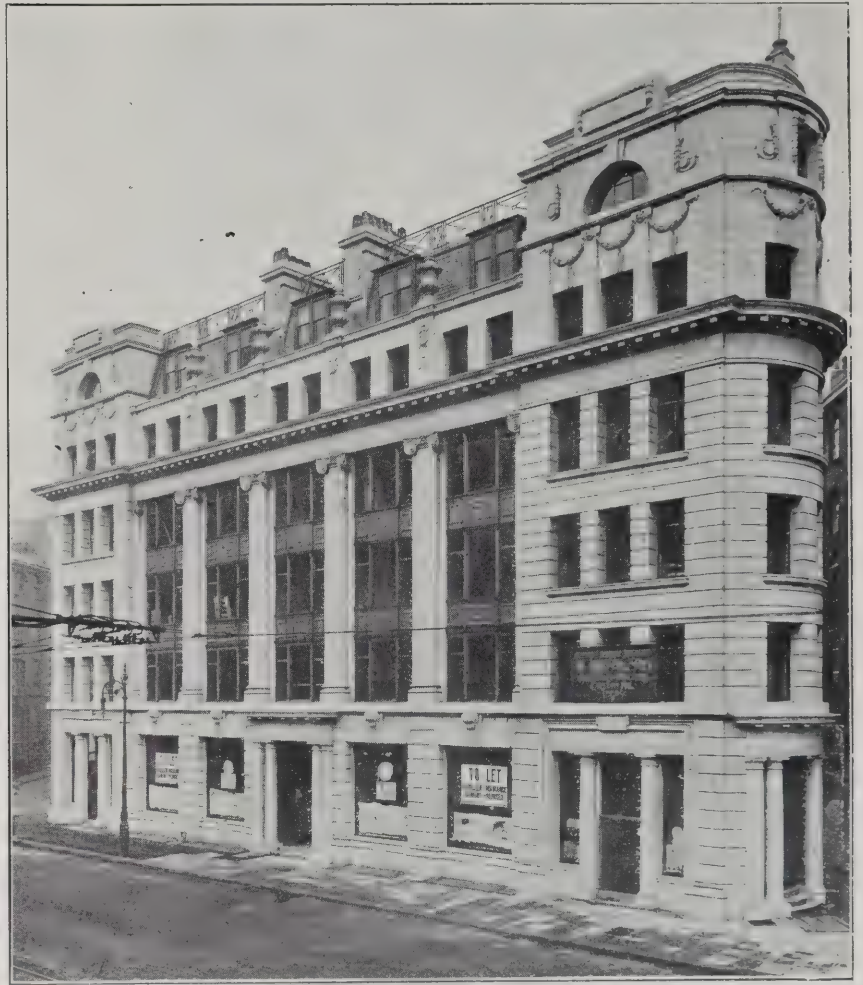
Retaining Wall at Smethwick, Birmingham, for the Corporation. C. J. Fox Allin, Borough Engineer.

WORKS CARRIED OUT IN EMPIRE FERRO-CONCRETE. (Empire Stone Co., Ltd., London).



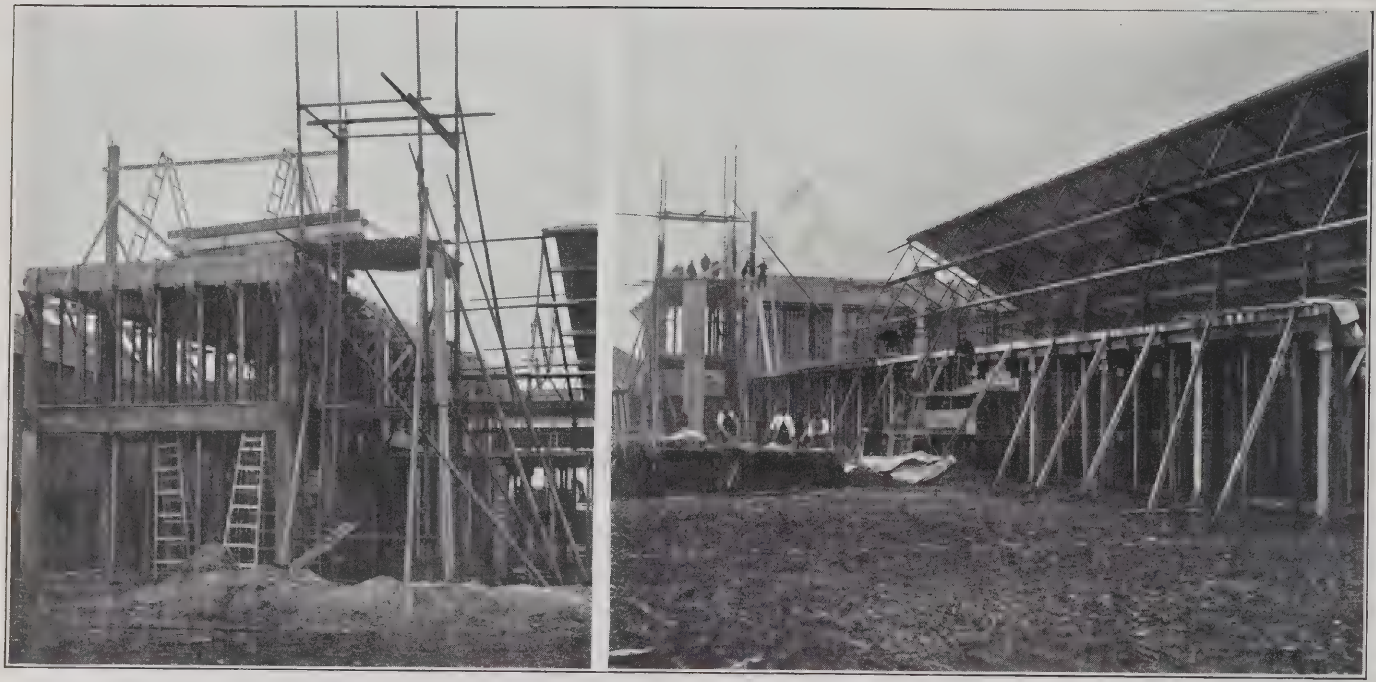
RESIDENTIAL BUILDING, UPPER GROSVENOR STREET AND PARK STREET, LONDON, W. W. D. CAROË, F.R.I.B.A., ARCHITECT.

Floors, stanchions, staircases, and roof entirely formed of reinforced Concrete. Erected by Higgs and Hill, Ltd., London.



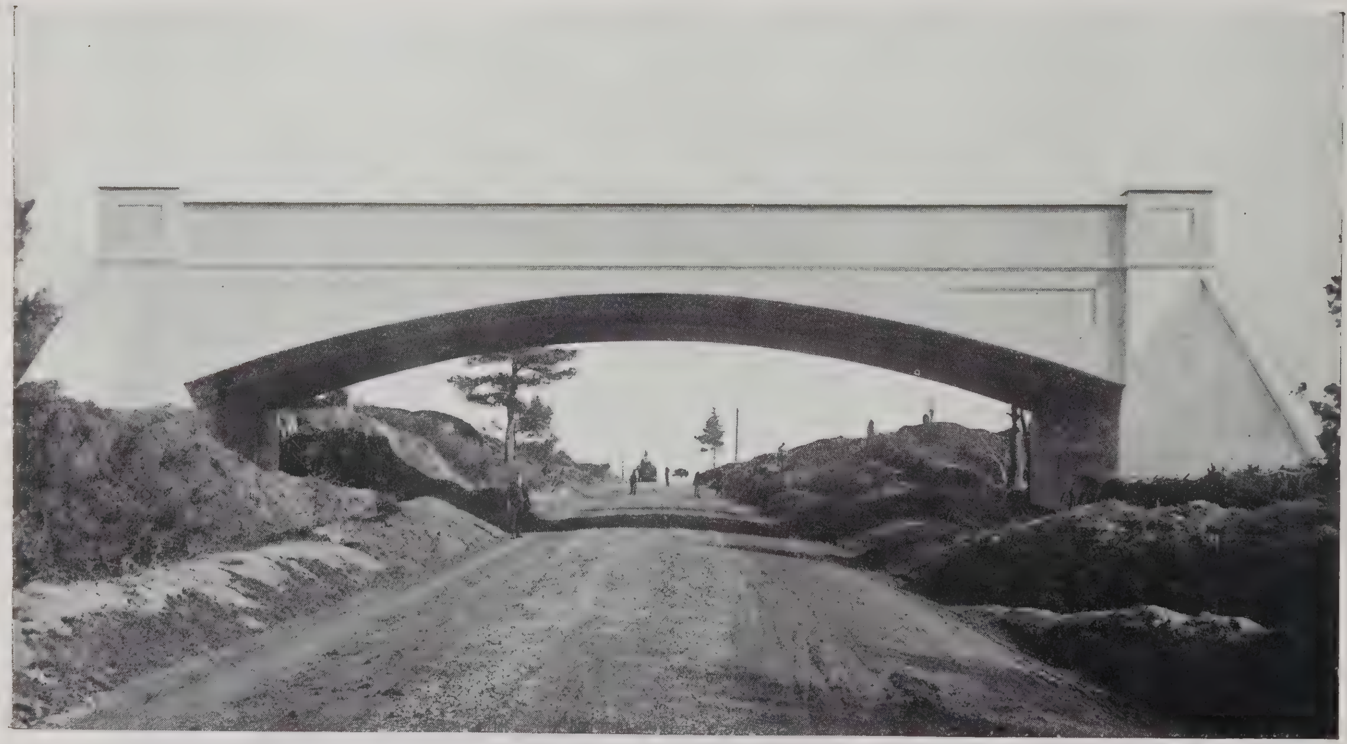
BUSINESS PREMISES, INFIRMARY STREET, LEEDS. G. D. MARTIN, F.S.I., AND S. D. KITSON, F.R.I.B.A., JOINT ARCHITECTS.

Structural work in reinforced concrete on the Coignet System (Edmond Coignet, Ltd., London).



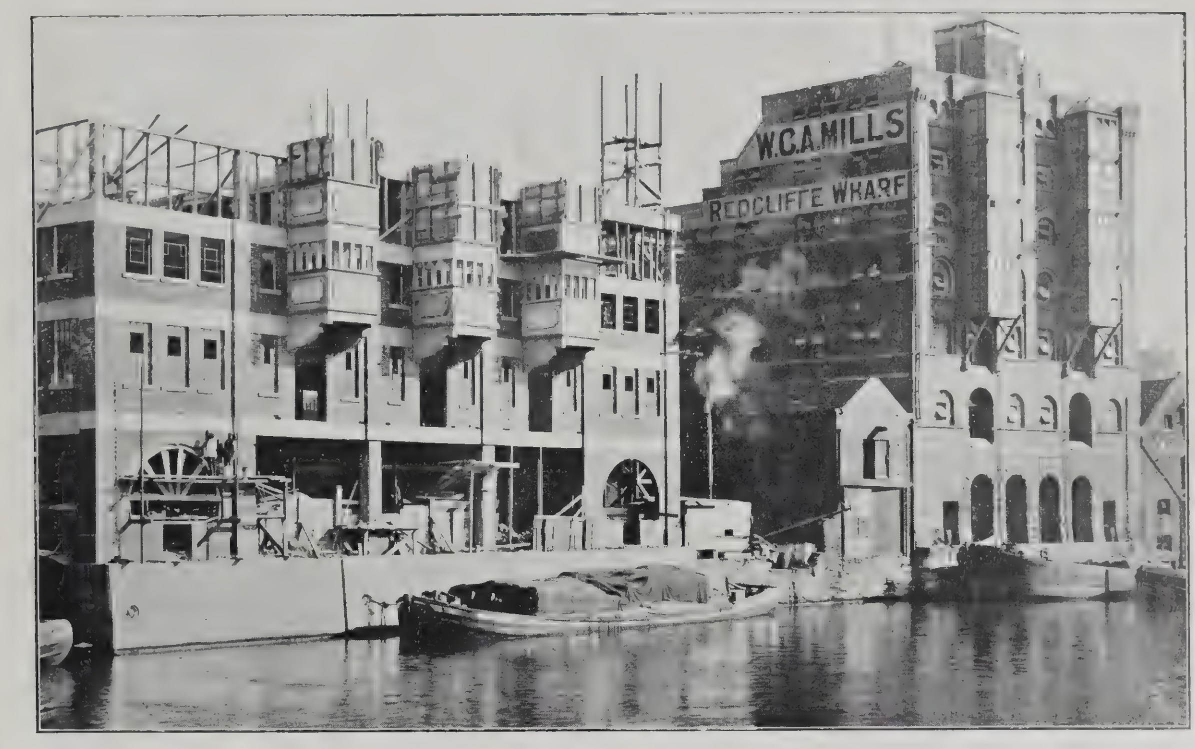
EXTENSION OF WORKS FOR MESSRS. HARGREAVES BROS. & CO., LTD., HULL.

Erected on the Leslie System (Leslie & Co., Ltd., London).

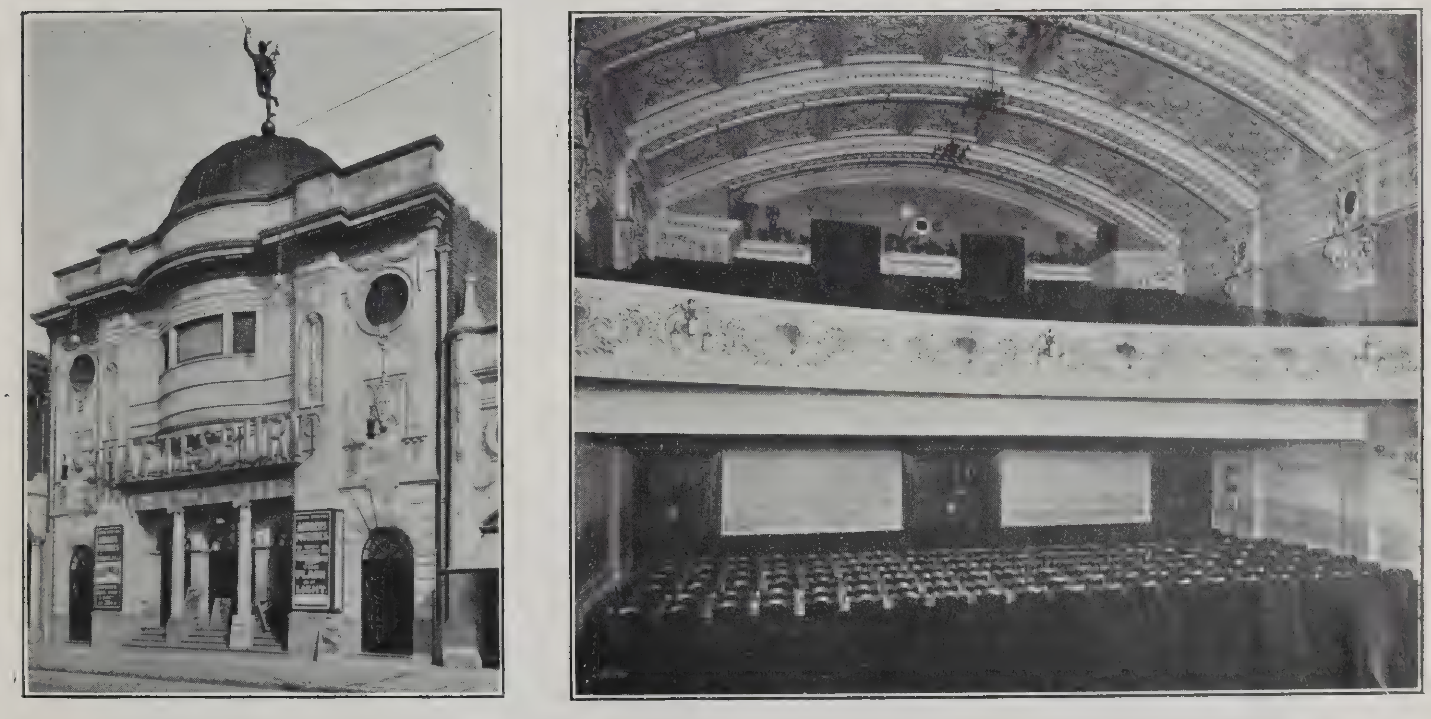


REINFORCED CONCRETE ROAD BRIDGE, RINGWOOD.

Erected by the Cubitt Concrete Construction Co., London.

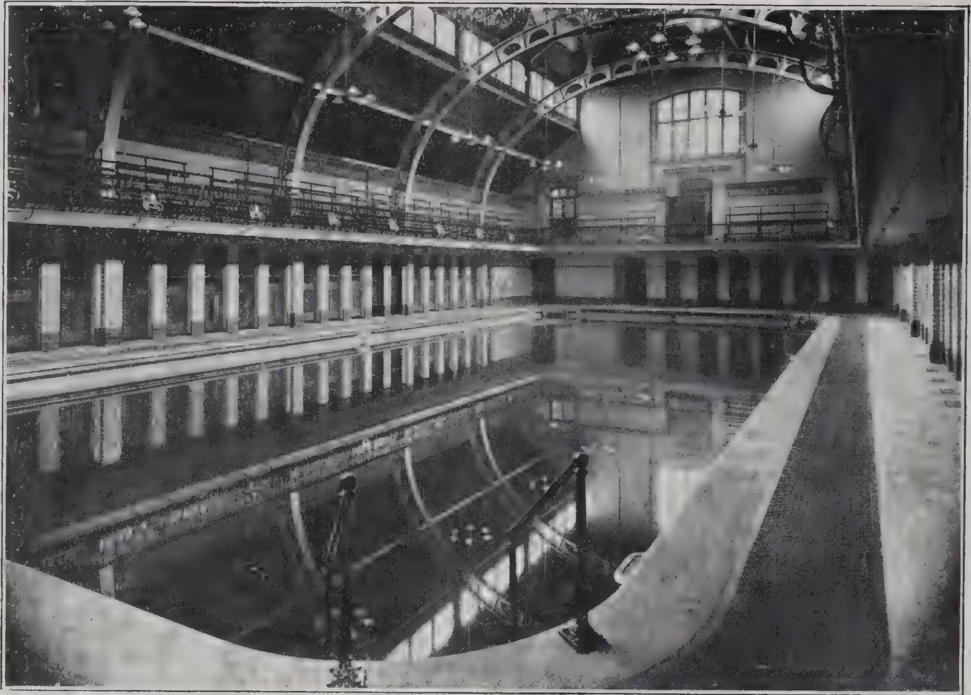


New Corn Mills and Offices for Western Counties Agricultural Association, Bristol: quay walls, piling foundations, columns, floors, and penthouses on Perfector System of reinforced Concrete: walls of reinforced brickwork on Perfector System. Erected by Perfector Buildings and Constructions, Ltd., Bristol and London.



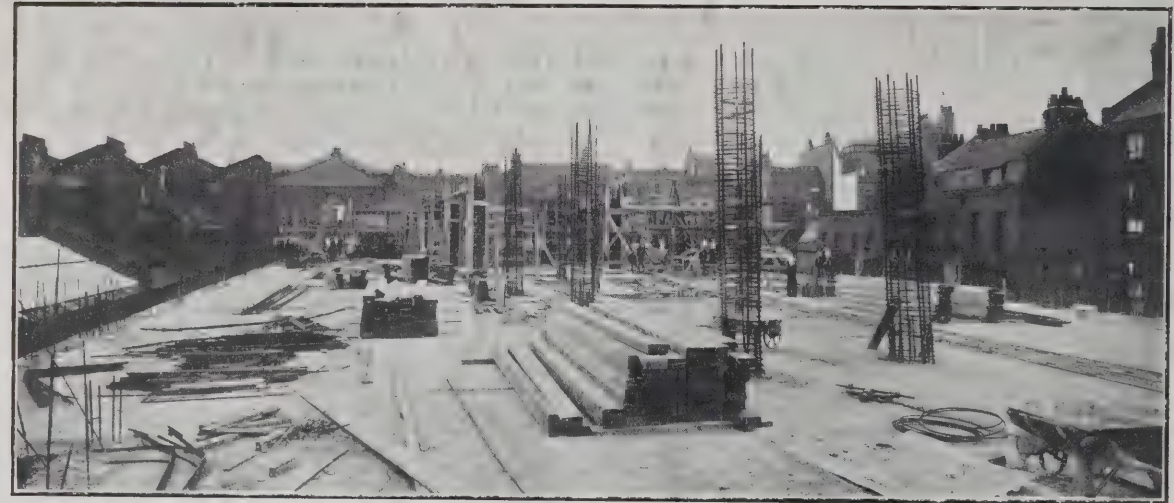
Shaftesbury Hall Theatre, Portsmouth. A. E. Tutte, Architect.

ERECTED ON THE LOCK WOVEN MESH SYSTEM. (James H. Tozer and Son, Ltd., London.)



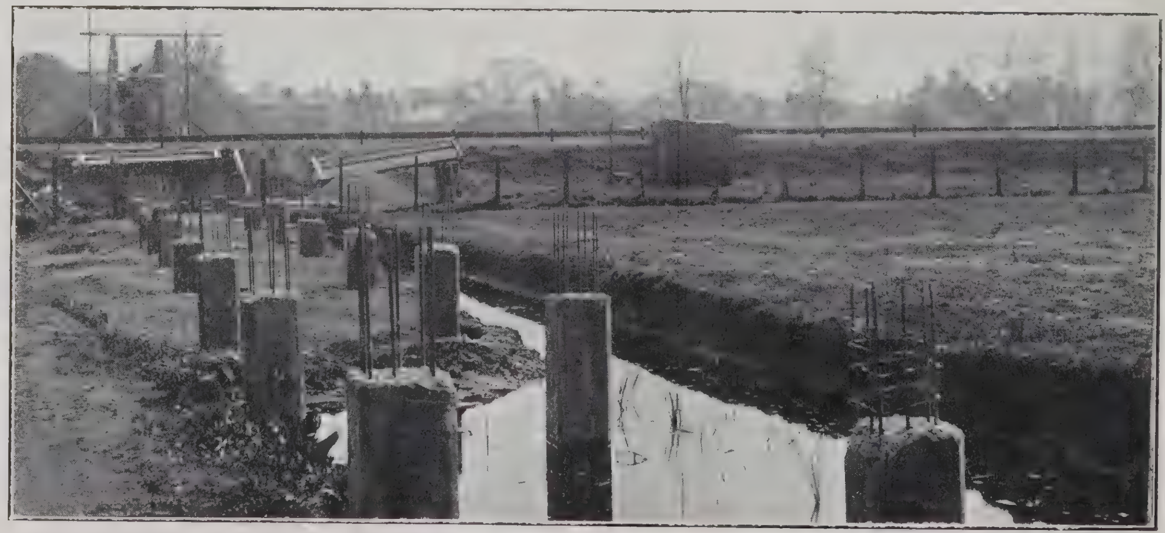
PUBLIC BATHS AT NECHELLS, BIRMINGHAM. ARTHUR HARRISON, F.R.I.B.A., ARCHITECT.

Constructed largely of Empire Ferro-Concrete. (The Empire Stone Co., Ltd., London.)



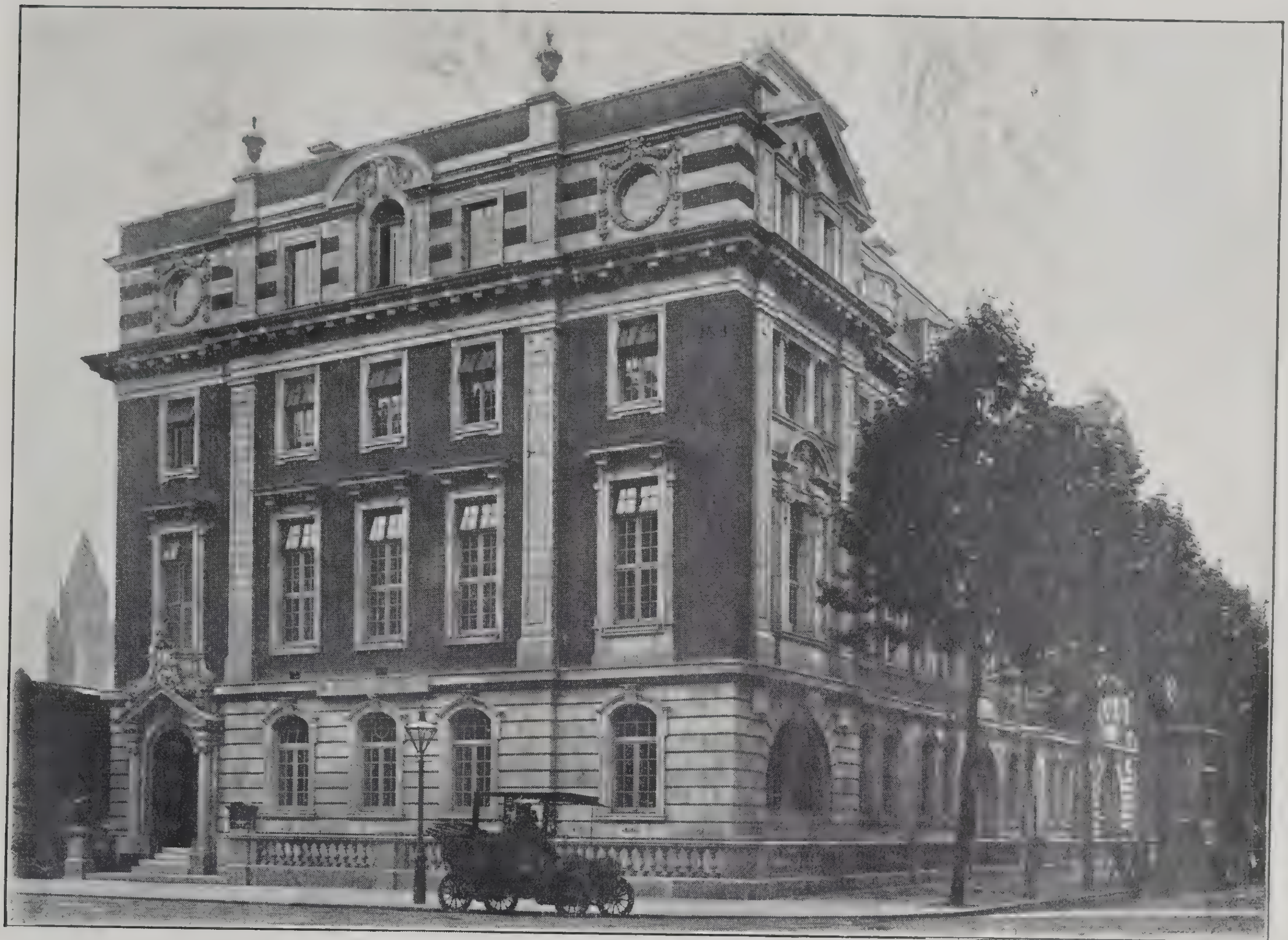
SECOND FLOOR OF NEW PRINTING WORKS, BLACKFRIARS.

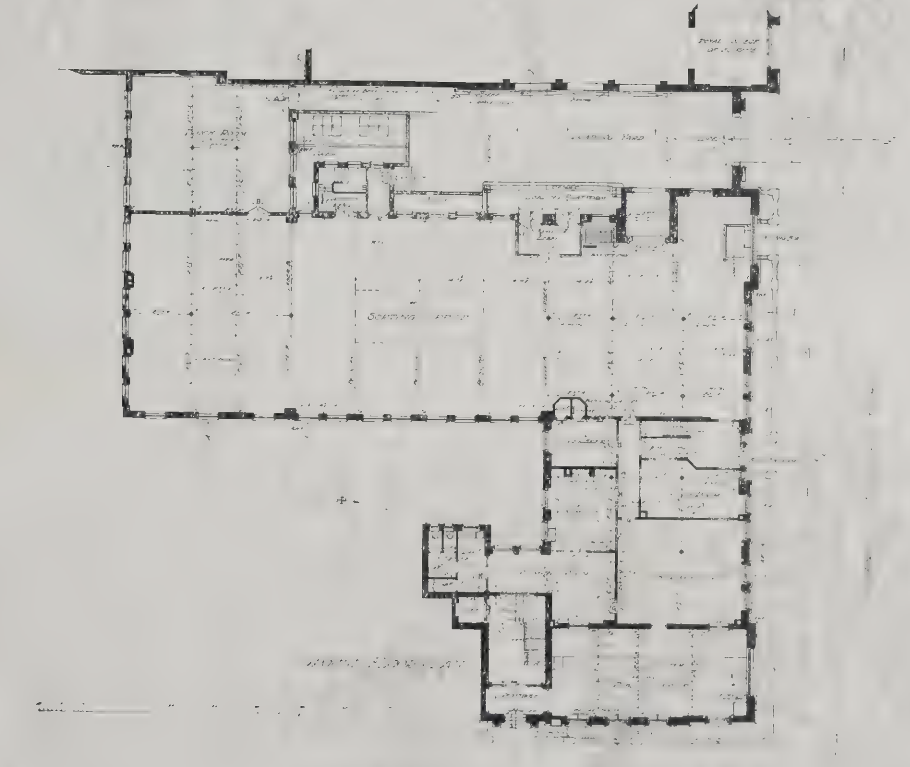
Construction by D. G. Somerville and Co., London.



PILED FOUNDATIONS FOR HEIGNHAM VIADUCT, FOR NORWICH CORPORATION.

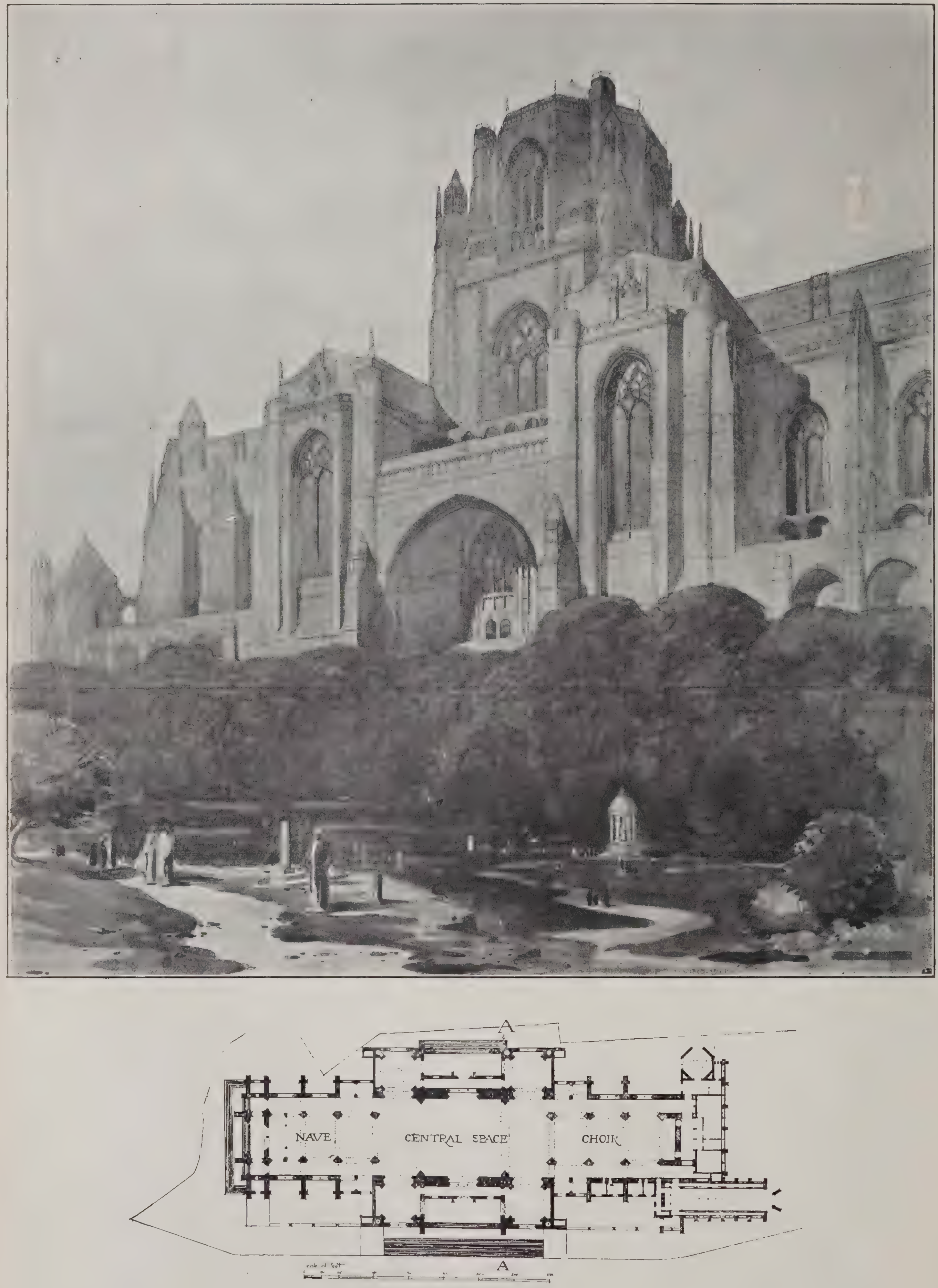
Constructed by D. G. Somerville and Co., London.





This building was completed in the autumn. The total cost was about £35,000.

NEW POST-OFFICE AND METEOROLOGICAL OFFICE, EXHIBITION ROAD AND IMPERIAL INSTITUTE ROAD) SOUTH KENSINGTON, LONDON. (H.M. OFFICE OF WORKS.)



In the amended design a single large tower is substituted for the twin towers shown in the original design. In this way economy of space is effected, and the lighting is improved, while the congregation will be more closely assembled, the new scheme providing a central space accommodating 4,000 worshippers. The portion to the right of the line A—A is the first being proceeded with, including the Lady Chapel, which has been completed this year.

THE AMENDED DESIGN FOR LIVERPOOL CATHEDRAL. G. GILBERT SCOTT, ARCHITECT.

UNIVERSITY OF ILLINOIS-URBANA
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